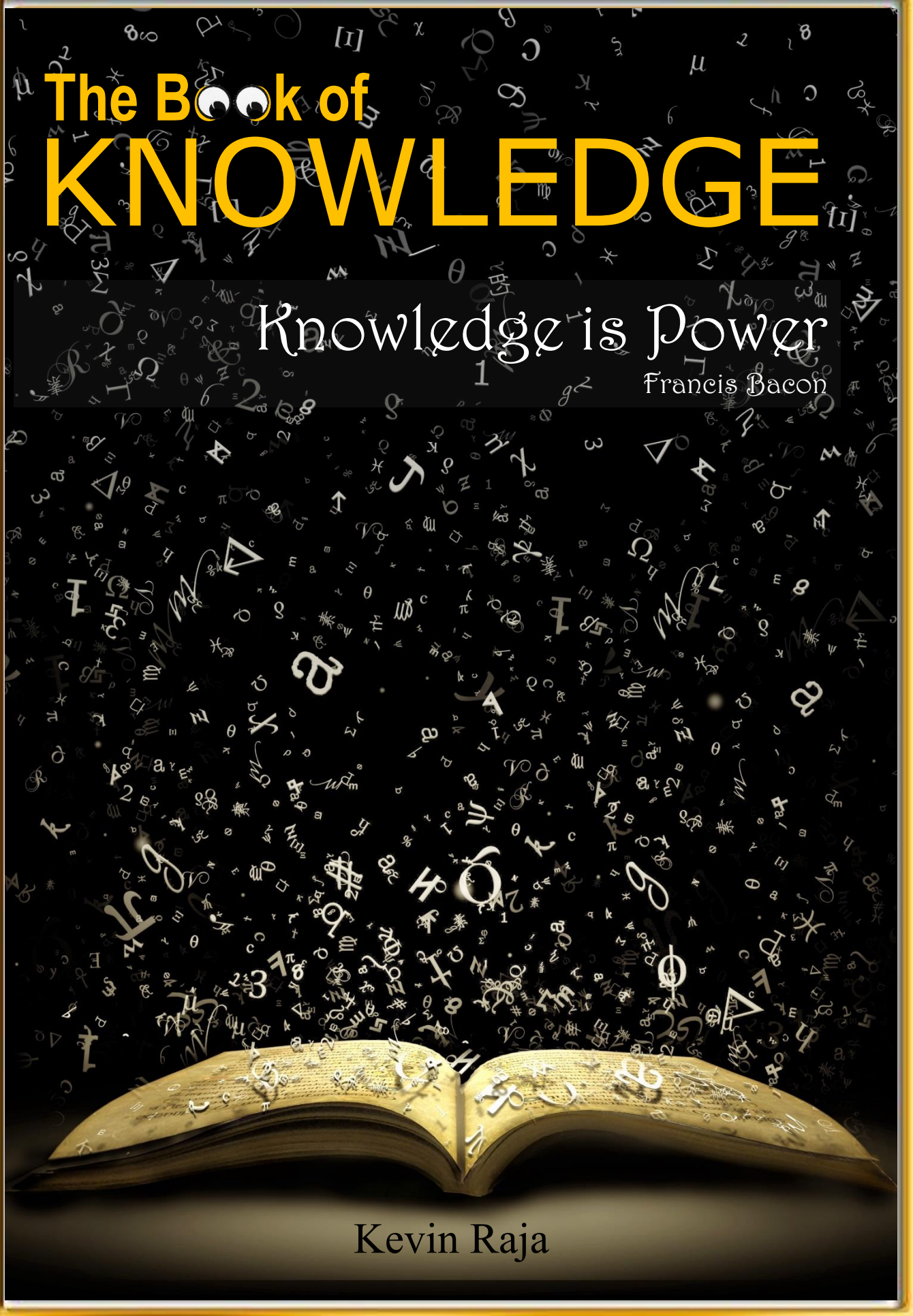
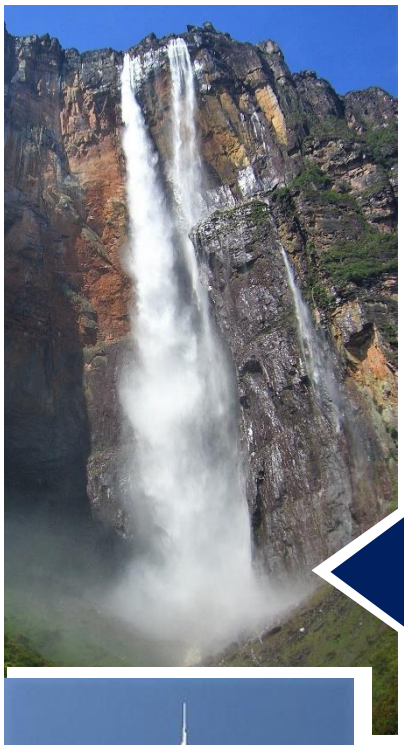
The Book of KNOWLEDGE

Knowledge is Power

Francis Bacon



Kevin Raja



The Book of KNOWLEDGE

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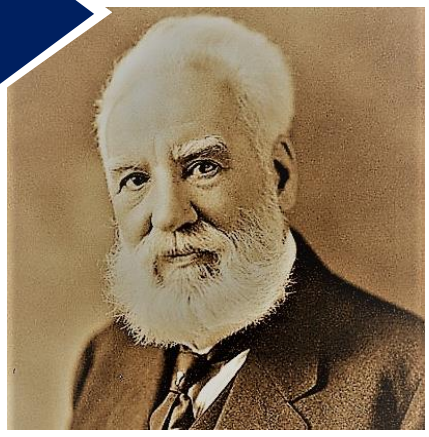

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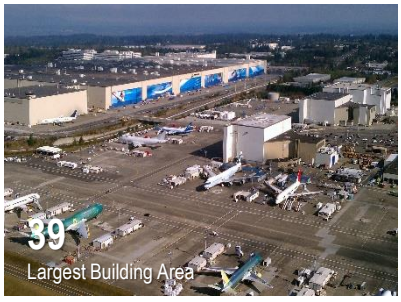
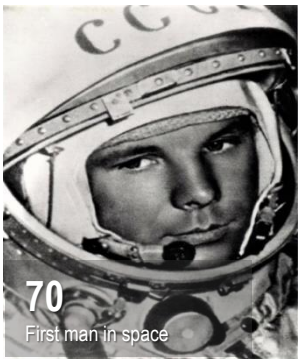
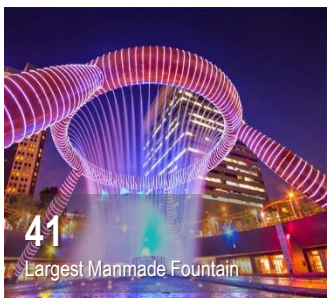
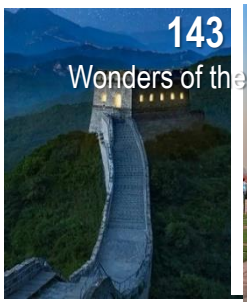








Biggest Continent in the World

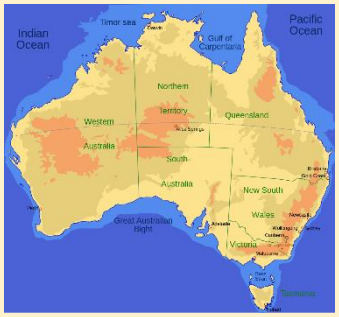
Number of Countries: 48
Area: 44,579,000 sq. km
Population: 4,560,667,108 (2018)
Density: 100 / sq. km
Biggest: Asian portion of Russia
Most Populated: China
Smallest & Least Populated: Maldives

A Kevin Raja project

Asia is Earth's **largest and most populous continent**, located primarily in the Eastern and Northern Hemispheres. It shares the continental landmass of Eurasia with the continent of Europe and the continental landmass of Afro-Eurasia with both Europe and Africa. Asia covers an area of 44,579,000 square kilometres (17,212,000 sq mi), about 30% of Earth's total land area and 8.7% of the Earth's total surface area. Its 4.5 billion people (as of June 2019) constitute roughly 60% of the world's population, more than all other continents combined.

According to the UN, there are 48 countries in Asia. Asian portion of Russia being the largest and China being the most populated whereas Maldives being the smallest and least populated.

Singapore is most densely populated country and Mongolia is least densely populated country in Asia.



Australia

is a country comprising the mainland of the Australian continent, the island of Tasmania, and numerous smaller islands. It is the largest country in Oceania and the world's 6th largest country by total area. The population of 26 million is urbanised and heavily concentrated on the eastern seaboard.

Smallest Continent in the World

Country: AUSTRALIA
Capital: Canberra
Area: 7,692,024 sq. km
Population: 25,640,500 (2020 est)
Density: 3.3 / sq. km
Currency: Australian Dollar

A Kevin Raja project

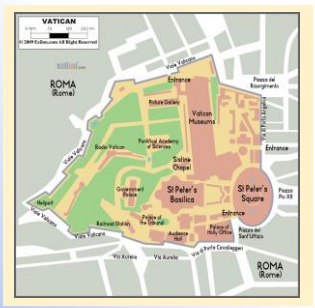
Biggest Country in the World

Country: RUSSIA
Capital: Moscow
Area: 17,098,246 sq. km
Population: 146,748,590 (2020 est)
Density: 8.4 / sq. km
Currency: Russian Ruble

A Kevin Raja project

Russia or the Russian Federation is a European country located in Eastern Europe with a vast expanse of territory that stretches across Northern Asia. At 17,098,246 square kilometres, it is by far the **largest country** in the world by area, covering more than one-eighth of the Earth's inhabited land area, spanning eleven time zones, and bordering 16 sovereign nations. They are Azerbaijan, Belarus, China, Estonia, Finland, Georgia, Japan, Kazakhstan, Latvia, Lithuania, Mongolia, North Korea, Norway, Poland, Ukraine, USA (Alaska).

On 26 December 1991, former Soviet Union was dissolved to 15 sovereign nations. Together with Russia, 14 other countries are Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan (largest landlocked country), Kyrgyzstan, Latvia, Lithuania, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.



Vatican City

is an independent city-state enclaved within Rome, Italy. Established with the Lateran Treaty (1929) it is distinct from, yet under "full ownership, exclusive dominion, and sovereign authority and jurisdiction" of the Holy See. With an area of 44 hectares (110 acres), and a population of about 1,000, it is the **smallest sovereign state** in the world by both area and population.

Smallest Country in the World

Country: VATICAN CITY
Area: 0.49 sq. km
Population: 825 (2017 est)
Density: 924 / sq. km
Currency: Euro

A Kevin Raja project

Largest Island Country in the World

INDONESIA
Capital: Jakarta
Area: 1,904,569 sq. km
Population: 267,670,543 (2018 est)
Density: 138 / sq. km
Currency: Indonesian Rupiah

A Kevin Raja project

Indonesia, is a transcontinental country in Southeast Asia and Oceania, between the Indian and Pacific oceans. It is the world's **largest island country**, with about 18,307 islands, and at 1,904,569 square kilometres (735,358 square miles), the 14th largest by land area and 7th in the combined sea and land area. With over 267 million people, it is the world's 4th most populous country, after China, India and USA, as well as the most populous Muslim-majority country. Java, the world's most populous island, is home to more than half of the country's population. The country's capital, Jakarta, is the second-most populous urban area in the world.

Smallest Island Country in the World

NAURU
Capital: Yaren
Area: 21 sq. km
Population: 10,670 (2018 est)
Density: 480 / sq. km
Currency: Australian Dollar

A Kevin Raja project

Nauru, is an island country in Micronesia, a subregion of Oceania, in the Central Pacific. Its nearest neighbour is Banaba Island in Kiribati, 300 km to the east. It further lies northwest of Tuvalu, 1,300 km northeast of the Solomon Islands, east-northeast of Papua New Guinea, southeast of the Federated States of Micronesia and south of the Marshall Islands. With only a 21 sq. km area, Nauru is the third-smallest country in the world behind Vatican City, and Monaco, making it the smallest state in the South Pacific Ocean, the smallest state outside Europe, the **smallest island state**, and the smallest republic. Additionally, its population of 10,670 is the world's third smallest, after Vatican City and Tuvalu.

Largest Island in the World

Greenland, is the world's **largest island**, located between the Arctic and Atlantic oceans, east of the Canadian Arctic Archipelago. It is an autonomous territory within the Kingdom of Denmark. Though physiographically a part of the continent of North America. Greenland is the world's largest non-continental island and the third largest area in North America after Canada and USA.

GREENLAND
Capital: Nuuk
Sovereign State: Denmark
Area: 2,166,086 sq. km
Population: 56,081 (2020 est.)
Density: 0.028 / sq. km

Australia, with a land area of 7,692,024 sq. km, is bigger than Greenland. But it is considered to be a continent and not an island.

Smallest Island with a building, in the World

The **Bishop Rock** is a very small islet in the Atlantic Ocean known for its lighthouse. It is in the westernmost part of the Isles of Scilly, an archipelago 45 km off the southwestern tip of the Cornish peninsula of Great Britain. The Guinness Book of Records lists it as the world's **smallest island with a building** on it. The rock rises from a depth of 45 meter to expose a tip 46 meters long by 16 meters wide.

The original iron lighthouse was begun in 1847 but was washed away before it could be completed. The present building was completed in 1858 and was first lit on 1 September that year. Before the installation of the helipad, visitors to the lighthouse would rappel from the top (with winches installed at the lamp level and at the base below) to boats waiting away from the lighthouse.

Most Populated Country in the World

Country: CHINA
Capital: Beijing
Area: 9,596,961 sq. km
Population: 1,400,050,000 (2019 est)
Density: 145 / sq. km
Currency: Renminbi

A Kevin Raja project

China, officially the People's Republic of China (PRC), is a country in East Asia and is the world's **most populous country**, with a population of around 1.428 billion in 2018. Covering approximately 9,600,000 sq. km (3,700,000 sq mi), it is the third largest country by area. Governed by the Communist Party of China, the state exercises jurisdiction over 22 provinces, five autonomous regions, four direct-controlled municipalities (Beijing, Tianjin, Shanghai & Chongqing), and the special administrative regions of Hong Kong and Macau.

Least Populated Country in the World

A Kevin Raja project

Country: VATICAN CITY
Area: 0.44 sq. km
Population: 1,000 (2017 est)
Density: 2272 / sq. km
Currency: Euro

Vatican City is the **least populated country** in the World. As mentioned on page 5, with an area of 44 hectares (110 acres), and a population of about 825, it is the smallest sovereign state in the world by both area and population.

Most Densely Populated Country in the World

Country: MONACO
Capital: Monaco-Ville
Area: 2.1 sq. km
Population: 38,300 (2019 est)
Density: 18,713 / sq. km
Currency: Euro

A Kevin Raja project

Monaco, officially the Principality of Monaco is a sovereign city-state, country, and microstate on the French Riviera in Western Europe. France borders the country on three sides while the other side borders the Mediterranean Sea. Monaco is about 15 km (9.3 mi) from the state border with Italy.

Monaco has an area of 2.2 sq. km, making it the **second-smallest country** in the world after the Vatican. Its population as of 2019 is 38,300. It is the **most densely-populated sovereign state** in the world. Monaco has a land border of 5.47 km the world's shortest coastline of approximately 3.83 km (2.38 mi) (regardless of the coastline paradox), and a width that varies between 1,700 and 349 m (5,577 and 1,145 ft).

Mongolia is a landlocked country in East Asia, sandwiched between Russia to the north and China to the south, At 1,564,116 sq. km, it is the 18th-largest and the most **sparsely populated sovereign state** in the world, with a population of around 3 million people. It is also the world's second-largest landlocked country behind Kazakhstan and the largest landlocked country that does not border a closed sea.

Least Densely Populated Country in the World

Country: MONGOLIA
Capital: Ulaanbaatar
Area: 1,566,000 sq. km
Population: 3,353,470 (2020 est)
Density: 2.07 / sq. km
Currency: Togrog

A Kevin Raja project

Most Populated City in the World

TOKYO
Country: Japan
Main Island: Honshu
Area: 2,194.07 sq.km
Population: 37,469,000
Density: 6,349 / sq. km

Tokyo The capital of Japan, it houses the Emperor of Japan and the Japanese government. Tokyo forms part of the Kantō region on the south-eastern side of Japan's main island, Honshu, and includes the Izu and Ogasawara Islands.

As of 2019, the population of Tokyo was estimated to be over 13.9 million, making it Japan's most populous prefecture. The metropolitan area is the world's **most populous** with about 40 million people as well as the world's largest urban agglomeration economy.

Most Densely Populated City in the World

MANILA
Country: Philippines
Area: 42.88 sq.km
Population: 1,780,148
Density: 41,515 / sq. km

Manila the capital of the Philippines and a highly urbanized city.

Manila is also the second most natural disaster-afflicted capital city in the world next to Tokyo, yet it is simultaneously among the most populous and fastest growing cities in Southeast Asia

It is the most populous region of the country, one of the most populous urban areas in the world, and is one of the wealthiest regions in Southeast Asia. The city proper is home to 1,780,148 people in 2015 and is the historic core of a built-up area that extends well beyond its administrative limits. With 71,263 people per sq. km, Manila is also the **most densely populated city** proper in the world.

Richest Country in the World

Country: QATAR
Capital: Doha
Area: 11,581 sq. km
Population: 2,795,484 (2020 est)
Density: 176 / sq. km
Currency: Riyal
GDP (per capita): $138,910

A Kevin Raja project

Qatar officially the State of Qatar, is a country located in Western Asia, occupying the small Qatar Peninsula on the north-eastern coast of the Arabian Peninsula, with its sole land border with Saudi Arabia to the south, with the rest of its territory surrounded by the Persian Gulf. The Gulf of Bahrain, an inlet of the Persian Gulf, separates Qatar from nearby Bahrain.

The country has the **highest per capita income** in the world with a high-income economy, backed by the world's third largest natural gas reserves and oil reserves. Most of the country consists of a low, barren plain, covered with sand. The highest point in Qatar is Qurayn Abu al Bawl at 103 m. The Jebel Dukhan area also contains Qatar's main onshore oil deposits, while the natural gas fields lie offshore, to the northwest of the peninsula.

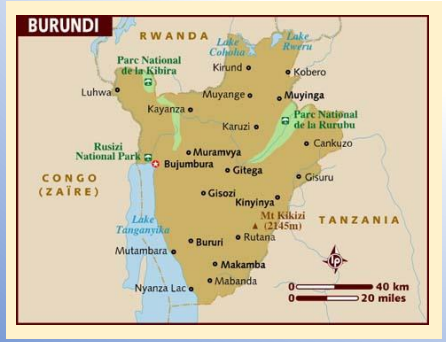
Burundi is a landlocked country in the Great Rift Valley where the African Great Lakes region and East Africa converge. It is bordered by Rwanda to the north, Tanzania to the east and southeast, and the Democratic Republic of the Congo to the west; Lake Tanganyika lies along its southwestern border.

Poorest Country in the World

Country: BURUNDI
Capital: Gitega
Area: 27,834 sq. km
Population: 11,865,821 (2020 est)
Density: 401.6 / sq. km
Currency: Burundian franc
GDP (per capita): $727 (2019 est)

A Kevin Raja project

It is a landlocked, resource-poor country with an underdeveloped manufacturing sector. The economy is predominantly agricultural, accounting for 50% of GDP in 2017 and employing more than 90% of the population. Studies since 2007 have shown Burundians to have extremely poor levels of satisfaction with life; the World Happiness Report 2018 rated them the world's least happy in 2018. Other poorer countries are Congo DR, Central African Republic, Liberia, Niger, Somalia and South Sudan.



Highest Mountain in the World

MOUNT EVEREST
Range: Himalayas
Countries: Nepal and China
Elevation: 8,848 m (29,029 ft)
1st ascent: 29 May 1953 by
Edmund Hillary and
Tenzing Norgay

A Kevin Raja project

Mount Everest is Earth's **highest mountain** above sea level, located in the Mahalangur Himal sub-range of the Himalayas. The international border between Nepal (Province No. 1) and China (Tibet Autonomous Region) runs across its summit point. There are two main climbing routes, one approaching the summit from the southeast in Nepal and the other from the north in Tibet. Everest presents dangers such as wind, altitude sickness and weather as well as significant hazards from avalanches and the Khumbu Icefall. As of 2019, over 300 people have died on Everest, many of whose bodies remain on the mountain.

Highest Waterfall in the World

ANGEL FALLS
Country: Venezuela
Total height: 979 m
Number of drops: 2
Longest drop: 807 m

A Kevin Raja project

Angel Falls is a waterfall in Venezuela. It is the world's **highest uninterrupted waterfall**, with a height of 979 metres (3,212 ft) and a plunge of 807 m (2,648 ft). The waterfall drops over the edge of the Auyán-tepui mountain in the Canaima National Park, a UNESCO World Heritage site in the Gran Sabana region of Bolívar State. The height figure, 979 m (3,212 ft), mostly consists of the main plunge but also includes about 400 metres (1,300 ft) of sloped cascade and rapids below the drop and a 30-metre (98 ft) high plunge downstream of the talus rapids. The falls are along a fork of the Rio Kerepacupai Meru which flows into the Churun River, a tributary of the Carrao River, itself a tributary of the Orinoco River.

Largest Waterfall (vertical area) in the World

VICTORIA FALLS
A Kevin Raja project
Countries: Zambia & Zimbabwe
Width: 1708 m
Total Height: 108 m
Number of drops: 2
Av. Flow Rate: 1088 cubic m/s

Victoria Falls "The Smoke That Thunders" is a waterfall on the Zambezi River in southern Africa, which provides habitat for several unique species of plants and animals. It is located on the border between Zambia and Zimbabwe. It is neither tallest nor the widest waterfall in the world, but it is the **largest by vertical area.** At 1,708 m wide and 108 m high, it creates a sheet of falling water with an area of around 184,400 sq. m.

Greatest Waterfall (annual flow) in the World

BOYOMA FALLS
A Kevin Raja project
Country: DR Congo
Location: Lualaba River
Height: 61 m (200 ft)
Average Width: 1,400 m (4,500 ft)
Average Flow rate: 16,990 cubic m/s

Boyoma Falls, formerly known as Stanley Falls, is a series of seven cataracts, each no more than 5 m (16 ft) high, extending over more than 100 km (62 mi) along a curve of the Lualaba River between the river port towns of Ubundu and Kisangani (also known as Boyoma) in the Orientale Province of the Democratic Republic of the Congo.

The seven cataracts have a total drop of 61 m (200 ft). They form the **largest waterfall** by volume of annual flow rate in the world, exceeding both the Niagara Falls and the Iguazu Falls.

The two major cataracts are the first below Ubundu, forming a narrow and crooked stream that is hardly accessible, and the last that can be seen and visited from Kisangani. At the bottom of the rapids, the Lualaba is known as the Congo River. A 1m-gauge portage railway bypasses the series of rapids, connecting Kisangani and Ubundu

Deadliest River in the World

The **Zambezi** is the 4th longest river in Africa, the longest east-flowing river in Africa and the largest flowing into the Indian Ocean from Africa. The Zambezi's most noted feature is Victoria Falls, world's largest waterfall. The Zambezi is considered to be the world's **most dangerous river**. It is peppered with unexploded mines, killer rapids and deadly animals. Hippopotamus, Nile crocodile, monitor lizard, African fish eagle, heron, pelican, egret, buffalo, zebra, giraffe, elephant and fishes like catfish, tigerfish, yellowfish and the bull shark also known as the Zambezi shark are some of the species found at the Zambezi river.

ZAMBEZI RIVER
A Kevin Raja project
Countries: Zambia, Angola, Namibia, Botswana, Zimbabwe, Mozambique
Length: 2,574 km
Basin Size: 1,390,000 sq. km

Largest River in the World

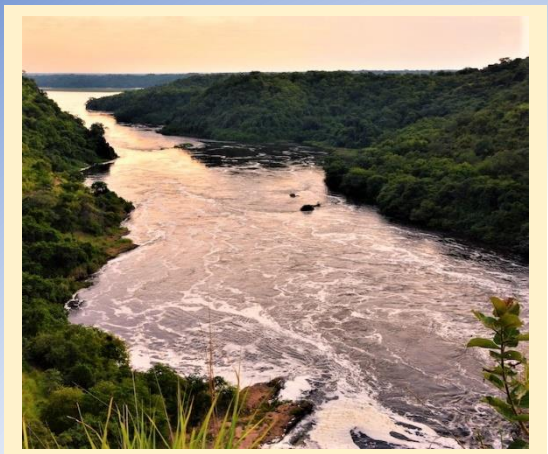
The **Amazon River** in South America is the **largest river** by discharge volume of water in the world, and by most accepted definitions it is the 2nd longest river in the world, after the Nile River.

AMAZON RIVER
A Kevin Raja project
Countries: Brazil, Colombia, Peru
Length: 6,575 km
Width: maximum 100 km (62 mi)
minimum 1 km (0.62 mi)
Depth: maximum 100 m (330 ft)
minimum 20 m (66 ft)
Discharge: maximum 340,000 cubic m / s
Basin Size: 7,050,000 sq. km
Max Discharge: 340,000 cubic m / second
Source: Rio Mantaro, Peru
Mouth: At Brazil to Atlantic Ocean

It is greater than the next seven largest independent rivers combined—the Amazon represents 20% of the global riverine discharge to the ocean. The Amazon basin is the largest drainage basin in the world.

There are no bridges across the entire width of the river. This is not because the river would be too wide to bridge; for most of its length, it is possible to build a bridge across the river easily. For most of its course, the river flows through the Amazon Rainforest, where there are very few roads and cities. Most of the time, the crossing can be done by a ferry.

Longest River in the World



NILE RIVER
Countries: Egypt, Sudan, South Sudan, Ethiopia, Uganda, Congo, Kenya, Tanzania, Rwanda, Burundi
Length: 6,650 km
1st Source: White Nile, Burundi
2nd Source: Blue Nile, Lake Tana, Ethiopia
Mouth: Nile Delta, Egypt to Mediterranean Sea

The Nile is a major north-flowing river in north-eastern Africa, and is the **longest river** in the world. The Nile, which is about 6,650 km long, is an "international" river as its drainage basin covers 11 countries. In particular, the Nile is the primary water source of Egypt and Sudan. The Nile has two major tributaries – the White Nile and the Blue Nile. The White Nile is considered to be the headwaters and primary stream of the Nile itself. The Blue Nile, however, is the source of most of the water, containing 80% of the water and silt. The White Nile is longer and rises in the Great Lakes region of central Africa, with the most distant source still undetermined but located in either Rwanda or Burundi. It flows north through Tanzania, Lake Victoria, Uganda and South Sudan. The Blue Nile begins at Lake Tana in Ethiopia and flows into Sudan from the southeast. The two rivers meet just north of the Sudanese capital of Khartoum

However, the Brazilian government says that the Amazon River is longer than the Nile. The Amazon River is the **largest river** by discharge volume of water in the world, and by most accepted definitions.

It is generally accepted that the Nile is the oldest river in the world, yet based on geological evidence, the Finke River in Australia can also make a claim that it is the oldest river in the world.

Shortest River in the World

KUOKANJOKI
Country: Finland
Length: 3.5 m

Kuokanjoki, **shortest river** in Finland is 3.5 meters long, connecting to lake Sumiainen.

Youngest River in the World

ROE RIVER
Country: Montana, USA
Length: 61 m

A Kevin Raja project

The **Roe River** runs from Giant Springs to the Missouri River. The Roe River is only 61 m long at its longest constant point, and had been named as the World's Shortest River by the Guinness book of World Records before Guinness eliminated the shortest river category. Towards its mouth, the Roe is about 1.8–2.4 m deep.

A successful campaign to get the Roe River recognized in the world originated in 1987 with fifth-grade students of teacher Susie Nardlinger at Lincoln Elementary School in Great Falls. The river was **unnamed** at the time, so the students first had to petition the United States Board on Geographic Names to accept their proposed name, Roe River, then submit their proposal to Guinness, as a shortest river. Guinness apparently never ruled on the dispute, leaving the claim by the Roe stand, but instead chose to no longer list a shortest river, possibly as a result of this ongoing dispute.

Oldest River in the World

FINKE RIVER
Country: Australia
Length: 750 km

A Kevin Raja project

The **Finke River**, in central Australia, 1 of 4 main rivers of the Lake Eyre Basin and said to be the oldest riverbed in the world. It flows for only a few days a year and when this happens, its water usually disappears into the sands of the Simpson Desert, rarely if ever reaching Lake Eyre. It is cited as the **oldest river** in the world. Its age has been deduced from observation and analysis of various factors in the geology of the area. In places such as the James Range, the Finke flows through deeply incised meanders. As meanders only form on flat plains, the river must have formed before the ranges were pushed up; this happened in a mountain building event referred to as the Alice Springs Orogeny which peaked between 400 and 300 million years ago Devonian to CarboniferousPeriods, both within the Paleozoic Era)

Largest Ocean in the World

A Kevin Raja project

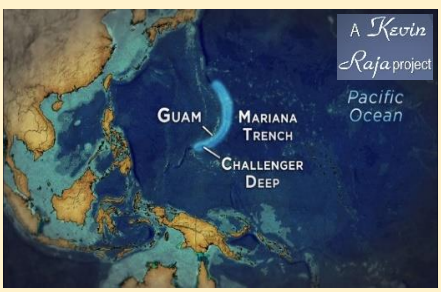
PACIFIC OCEAN
Surface Area: 165,250,000 sq. km
Average Depth: 4,280 m
Max Depth: 10,911 m
Water Volume: 710,000,000 cubic km

The **Pacific Ocean** is the **largest and deepest** of Earth's oceanic divisions. It extends from the Arctic Ocean in the north to the Southern Ocean in the south and is bounded by the continents of Asia and Australia in the west and the Americas in the east.

At 165,250,000 sq. km in area, this largest division of the World Ocean—and, in turn, the hydrosphere—covers about 46% of Earth's water surface and about 1/3 of its total surface area, making it larger than all of Earth's land area combined. The centres of both the Water Hemisphere and the Western Hemisphere are in the Pacific Ocean. The equator subdivides it into the North Pacific Ocean and South Pacific Ocean. Its mean depth is 4,000 meters. Challenger Deep in the Mariana Trench, located in the western north Pacific, is the deepest point in the world, reaching a depth of 10,928 meters (35,853 feet). The Pacific also contains the deepest point in the Southern Hemisphere, the Horizon Deep in the Tonga Trench, at 10,823 meters. The third deepest point on Earth, the Sirena Deep, is also located in the Mariana Trench.

Deepest Trench in the World

The **Mariana Trench** is located in the western Pacific Ocean about 200 km east of the Mariana Islands; it is the **deepest trench** in the world**.** It is crescent-shaped and measures about 2,550 km in length and 69 km in width. The maximum known depth is 10,994 m, at the southern end of a small slot-shaped valley in its floor known as the Challenger Deep, reached by Victor Vescovo on 29 April 2019. However, some unrepeated measurements place the deepest portion at 11,034 metres. By comparison: if Mount Everest were placed into the trench at this point, its peak would still be over two kilometres under water.



At the bottom of the trench the water column above exerts a pressure of 1,086 bars (15,750 psi), more than 1,071 times the standard atmospheric pressure at sea level. At this pressure, the density of water is increased by 4.96%. The temperature at the bottom is 1 to 4 °C.

Smallest Ocean in the World

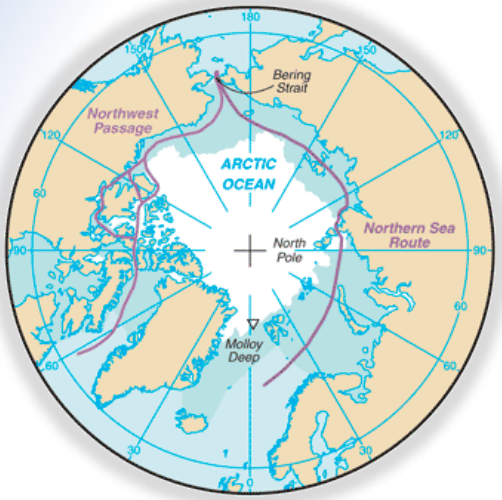
Coldest Ocean in the World

ARCTIC OCEAN
Area: 14,056,000 sq km
Coastline: 45,390 km

A Kevin Raja project

The **Arctic Ocean** is the **smallest**, **shallowest** and **coldest** of the world's 5 major oceans, and also seen as the northernmost part of the all-encompassing World Ocean.

The Arctic Ocean occupies a roughly circular basin and almost the size of Antarctica. It is the only ocean smaller than Russia. It is partly covered by sea ice throughout the year and almost completely in winter. The temperature of the surface is fairly constant, near the freezing point of seawater. Because the Arctic Ocean consists of saltwater, the temperature must reach −1.8 °C before freezing occurs. Average July temperatures range from about −10 to +10 °C, with some land areas occasionally exceeding 30 °C in summer



The **Indian Ocean** is the 3rd largest ocean. It is the **warmest ocean** in the world. The waters of the Indian Ocean have temperatures ranging between 22 and 28 °C on the upper layer of the ocean

Warmest Ocean in the World

INDIAN OCEAN
Area: 70,560,000 sq km
Max Depth: 7,258 m
Coastline: 66,526 km

A Kevin Raja project

Saltiest Ocean in the World

ATLANTIC OCEAN
Area: 106,460,000 sq km
Max. Depth: 8,376 m
Coastline: 111,866 km

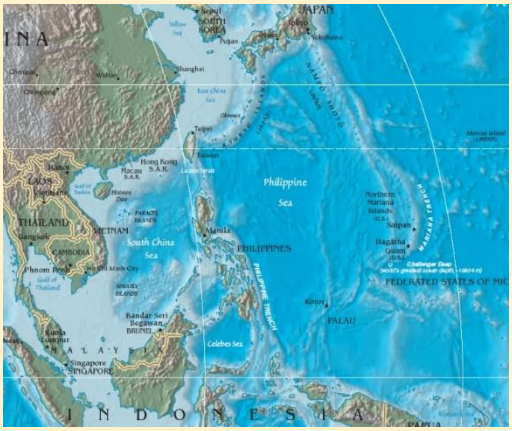
The **Atlantic Ocean** is the 2nd largest of the world's oceans. It covers approximately 20% of Earth's surface and about 29% of its water surface area. It is the **saltiest** major ocean; surface water salinity in the open ocean ranges from 33 to 37 parts per thousand (3.3–3.7%) by mass and varies with latitude and season

Largest Sea in the World

PHILIPPINE SEA
Surface Area: 5.695 million sq. km
Max Depth: 10,540 m

A Kevin Raja project

The **Philippine Sea**, the **largest sea** in the world is a marginal sea east and northeast of the Philippines occupying an estimated surface area of 5.7 million sq. km. The Philippine Sea Plate forms the floor of the sea, which forms a portion of the western North Pacific Ocean. It is bordered by the Philippine archipelago on the southeast; the Marianas, including Guam, Saipan, and Tinian, on the east; the Bonin and Iwo Jima on the northeast; the Japanese islands of Honshu, Shikoku, and Kyūshū on the north; the Ryukyu Islands on the northwest; and Taiwan in the west. Philippine Sea has deep sea trenches, among them the Philippine Trench and the Mariana Trench, containing the deepest point on the planet.



Largest Gulf in the World

GULF OF MEXICO
Location: American Mediterranean Sea
Basin Countries: USA, Cuba Mexico
Surface Area: 1,550,000 sq. km
Max Width: 1,500 km

A Kevin Raja project

The **Gulf of Mexico** is a oval ocean basin and a marginal sea of the Atlantic Ocean, largely surrounded by the North American continent. The Gulf of Mexico formed approximately 300 million years ago as a result of plate tectonics.

The Gulf of Mexico is the **largest gulf** in the World. It has a coastline of about 5,000 km. The Gulf of Mexico is connected to the Atlantic Ocean by the Straits of Florida, between Cuba and the U.S. state of Florida. US portion of the Gulf coastline spans 2,700 km, receiving water from 33 major rivers that drain 31 states. The Gulf's southwestern and southern shores lie along the Mexican states of Tamaulipas, Veracruz, Tabasco, Campeche, Yucatán, and the northernmost tip of Quintana Roo. The Mexican portion of the Gulf coastline spans 2,805 km. On its southeast quadrant the Gulf is bordered by Cuba.

Largest Lake in the World

CASPIAN SEA
Countries: Azerbaijan, Iran, Kazakhstan, Russia, Turkmenistan
Surface Area: 371,000 sq. km
Max Length: 1,030 km
Max Width: 435 km
Average Depth: 211 m
Max Depth: 1,025 m
Water Volume: 78,200 cubic km
Shore Length: 7,000 km

Caspian Sea is the world's largest inland body of water, variously classed as the world's **largest lake** or a full-fledged sea. It is an endorheic basin (a basin without outflows) located between Europe and Asia, to the east of the Caucasus Mountains and to the west of the broad steppe of Central Asia.

It has a salinity of approximately 1.2% (12 g/l), about a third of the salinity of most seawater. It is bounded by Kazakhstan to the northeast, Russia to the northwest, Azerbaijan to the west, Iran to the south, and Turkmenistan to the southeast.

The wide and endorheic Caspian Sea has a north–south orientation and its main freshwater inflow, the Volga River, enters at the shallow north end. Two deep basins occupy its central and southern areas. These lead to horizontal differences in temperature, salinity, and ecology. The Caspian Sea spreads out over nearly 1,200 kilometres from north to south, with an average width of 320 km. It covers a region of around 386,400 sq. km and its surface is about 27 m (89 ft) below sea level.

Superior Lake (Canada-USA) - largest of the Great Lakes by volume, having more water than the other 4 combined. The largest freshwater lake in the world by surface area.

Huron Lake (Canada-USA) - contains Manitoulin Island, the world's largest lake island.

Tanganyika Lake (Africa) - longest freshwater lake in the world and second-largest by volume

Malawi Lake (Africa) - Has more species of fish than any other lake in the world

Deepest & Oldest Lake in the World

Lake Baikal, etymologically meaning, in Mongolian, "Nature Lake" is a rift lake located in southern Siberia, Russia, between Irkutsk Oblast to the northwest and the Buryat Republic to the southeast.

LAKE BAIKAL
Countries: Russia, Mongolia
Surface Area: 31,722 sq. km
Average Depth: 744.4 m
Max Depth: 1,642 m
Water Volume: 23,615.39 cubic km

A Kevin Raja project

Lake Baikal is the **largest freshwater lake** by volume in the world, containing 22–23% of the world's fresh surface water. With 23,615.39 cubic km of fresh water, it contains more water than the North American Great Lakes combined. With a maximum depth of 1,642 m (5,387 ft), Baikal is the world's **deepest lake**. It is considered among the world's **clearest lakes** and is considered the world's **oldest lake** – at 25–30 million years. It is the seventh-largest lake in the world by surface area.

Deepest River in the World

CONGO RIVER
Source: Lualaba River
Mouth: Atlantic Ocean
Length: 4,370 km
Basin Size: 4,014,500 sq. km
Max Depth: 220 m

A Kevin Raja project

The **Congo River**, formerly known as the Zaire River under the Mobutu regime, is the second longest river in Africa, shorter only than the Nile, as well as the second largest river in the world by discharge volume, following only the Amazon. It is also the world's **deepest recorded river**, with measured depths in excess of 220 m (720 ft). The Congo-Lualaba-Chambeshi River system has an overall length of 4,700 km, which makes it the world's ninth-longest river. The Chambeshi is a tributary of the Lualaba River, and Lualaba is the name of the Congo River upstream of Boyoma Falls, extending for 1,800 km (1,120 mi).

Measured along with the Lualaba, the main tributary, the Congo River has a total length of 4,370 km. It is the only major river to cross the equator twice. The Congo Basin has a total area of about 4,000,000 sq. km, or 13% of the entire African landmass.

Largest Natural Cave in the World

HANG SON DOONG
Country: Vietnam
Length: approx. 9 km
Depth: max 150 m
Entrances: 2
Hazards: Underground River

A Kevin Raja project

Hang Son Doong is the world's **largest natural cave**, in Phong Nha-Kẻ Bàng National Park, Bố Trạch District, Quảng Bình Province, Vietnam. Located near the Laos–Vietnam border, Hang Sơn Đoòng has an internal, fast-flowing subterranean river and the largest cross-section of any cave, worldwide, as of 2009, believed to be twice that of the next largest passage. It is the largest known cave passage in the world by volume. Its name, Hang Sơn Đoòng, is variously translated from Vietnamese as 'cave of the mountain river' or 'cave of mountains behind Đoòng [village]. As a solutional cave, it was formed in soluble limestone and is believed to be between 2 and 5 million years old varies between 1,700 and 349 m (5,577 and 1,145 ft).

Veryovkina Cave is 2,212 meters (7,257 ft) deep and the **deepest-known cave** on Earth. Its entrance is situated 2,309 meters (7,575 ft) above sea level in Abkhazia, Georgia. The entrance of the cave has a cross section of 3 m × 4 m, and is located in the Arabika Massif, Gagra Mountain Range of the West Caucasus, on the pass between the Krepost and Zont mountains, closer to the slopes of Mt. Krepost. The depth of the entrance shaft is 32 meters.

Deepest Cave in the World

VERYOVKINA CAVE
Country: Georgia
Depth: 2212 m
Length: 17,500 m

A Kevin Raja project

The **Sahara** 'the Greatest Desert' is a desert located on the African continent. It is the **largest hot desert** in the world and the third largest desert overall after Antarctica and the Arctic. Its area of 9,200,000 sq. km (3,600,000 sq mi) is comparable to the area of China or the United States.

The desert comprises much of North Africa, excluding the fertile region on the Mediterranean Sea coast, the Atlas Mountains of the Maghreb, and the Nile Valley in Egypt and Sudan. It stretches from the Red Sea in the east and the Mediterranean in the north to the Atlantic Ocean in the west, where the landscape gradually changes from desert to coastal plains.

Largest Hot Desert in the World

SAHARA DESERT
Countries: Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Sudan, Tunisia
Area: 9,200,000 sq. km
Length: 4,800 km
Width: 1,800 km

A Kevin Raja project

Do You Know?
Antarctica, on average, is the coldest, driest and windiest continent, and has the highest average elevation of all the continents. Most of Antarctica is a polar desert.

Smallest Desert in the World

CARCROSS DESERT
Country: Canada
Area: 2.6 sq. km

A Kevin Raja project

Carcross Desert, located outside Carcross, Yukon, Canada, is often considered the **smallest desert** in the world. The Carcross Desert measures approximately 2.6 sq. km, or 640 acres.

Carcross Desert is commonly referred to as a desert, but is actually a series of northern sand dunes. The area's climate is too humid to be considered a true desert. The sand was formed during the last glacial period, when large glacial lakes formed and deposited silt. When the lakes dried, the dunes were left behind. Today, sand comes mainly from nearby Bennett Lake, carried by wind.

Oldest Island in the World

MADAGASCAR
Capital: Antananarivo
Area: 587,041 sq. km
Population: 26,262,313 (2018 est)
Density: 35.2 / sq. km
Currency: Malagasy ariary (MGA)
Time zone: UTC+3 (EAT)

A Kevin Raja project

Madagascar, previously known as the Malagasy Republic, is an island country in the Indian Ocean, approximately 400 kilometres (250 miles) off the coast of East Africa.

Madagascar is the world's 47th largest country, the 2nd largest island country and the fourth-largest island. The nearest mainland state is Mozambique, located to the west.

Following the prehistoric breakup of the supercontinent Gondwana, Madagascar split from the Indian subcontinent around 88 million years ago, it is the **oldest island** according to Guinness World Records.

Madagascar belongs to the group of least developed countries, according to the United Nations. Malagasy and French are both official languages of the state.

Largest Sand Island in the World

FRASER ISLAND
Country: Australia
Area: 1,655 sq. km
Population: 182
Density: 0.10997 / sq. km

A Kevin Raja project

Fraser Island is a heritage-listed island located along the southeastern coast in the Wide Bay–Burnett region, Queensland, Australia. It is approximately 250 kilometres (160 mi) north of the state capital, Brisbane, and is a locality within the Fraser Coast Region local government area. In the 2016 census, Fraser Island had a population of 182 people

The island is considered to be the **largest sand island** in the world at 1,840 square kilometres (710 sq mi). It is also Queensland's largest island, Australia's sixth largest island and the largest island on the east coast of Australia.

The total volume of sand above sea level on Fraser Island is directly proportional to the mass of 113 cubic kilometres (27 cubic miles).

Reykjavík is the capital and largest city of Iceland. It is located in southwestern Iceland, on the southern shore of Faxaflói bay. Its latitude is 64°08' N, making it the world's **northernmost capital** of a sovereign state. (Nuuk, the capital of Greenland, is slightly further north at 64°10', but Greenland is a constituent country, not an independent state).

The city was founded in 1785 as an official trading town and grew steadily over the following decades, as it transformed into a regional and later national centre of commerce, population, and governmental activities. It is among the cleanest, greenest, and safest cities in the world.

Ny-Ålesund is a small city in Svalbard, Norway with 35 people. It is the northernmost functional civilian settlement in the world, at 78°55′30″N 011°55′20″E.

Most Northerly Capital in the World

REYKJAVIK (Iceland)
Latitude: 64°08' N
Area: 273 sq. km
Population: 131, 136 (2020)
Density: 471.77 / sq. km

Most Southerly Capital in the World

WELLINGTON (New Zealand)
Latitude: 41°17' S
Area: 442 sq. km
Population: 215, 400 (2019)
Density: 490 / sq. km

Wellington is the capital and 2nd-most populous urban area of New Zealand, after Auckland. It is located at the south-western tip of the North Island. With a latitude of 41° 17' South, Wellington is the **southernmost capital** city in the world.. It features a temperate maritime climate, and is the world's **windiest city** by average wind speed, with an average wind speed of 27 km/h (17 mph)

One of the world's most liveable cities, the 2016 Mercer Quality of Living Survey ranked Wellington 12th in the world. Wellington was declared a city in 1840, and was chosen to be the capital city of New Zealand in 1865.

Ushuaia, a city at Antártida e Islas del Atlántico Sur Province, Argentina, is the southernmost city in the world.

Country with Most Lakes in the World

FINLAND
Capital: Helsinki
Area: 338,424 sq. km
Population: 5,528,737
Official Lakes: 187,888

A Kevin Raja project

Finland is a Nordic country in Northern Europe bordering the Baltic Sea, Gulf of Bothnia, and Gulf of Finland, between Sweden to the west, Russia to the east, Estonia to the south, and north-eastern Norway to the north.

Finland has about 168,000 lakes (of area larger than 500 sq. m) and 179,000 islands. Its largest lake, Saimaa (surface area: 4,400 sq.km), is the fourth largest in Europe. Saimaa (left) has a shoreline of 13,700 km. The Finnish Lakeland is the area with the most lakes in the country. The greatest concentration of islands is found in the southwest, in the Archipelago Sea between continental Finland and the main island of Åland.

These statistics have caused debate over which country has the highest number of lakes. If we take into consideration the number of official lakes that are claimed by a country, Finland would overtake Canada by a large margin. Canada may have the highest number of lakes in the world. Canada's large size may be a contributing factor to the number of lakes in the country. It is the second largest country in the world, with area of 9,984,670 sq. km and population of 37,894,799 (2020 est.)

Canada has over 2,000,000 lakes (563 greater than 100 sq. km which is more than any other country, containing much of the world's fresh water.) Lake Superior (right), is world's largest freshwater lake with a surface area of 82,000 sq. km.

Country with Most Rivers in the World

BANGLADESH
Capital: Dhaka
Area: 148,460 sq. km
Population:
161,376,708 (2018 est)

A Kevin Raja project

Bangladesh is a sovereign, democratic and secular state in South Asia. With numerous criss-crossing rivers and inland waterways, the dominant geographic feature of Bangladesh is the Ganges delta, which empties into the Bay of Bengal with the combines waters of several river systems. Most of the country is dominated by the fertile Ganges-Brahmaputra delta, which is the largest river delta in the world. Bangladesh has 57 trans-boundary rivers.

Countries with NO Rivers in the World

Saudi Arabia is the only country with both the Persian Gulf and the Red Sea coasts. A considerable part of Saudi Arabia is made up of mountains, lowlands, and arid desert. Even though. Saudi Arabia occupies about 80% of the Arabian Peninsula (the world's largest peninsula).

BAHAMAS
BAHRAIN
COMOROS
KIRIBATI
KUWAIT
LIBYA
MALDIVES
MALTA
MARSHALL ISLANDS
MONACO
NAURU
OMAN
QATAR
SAUDI ARABIA
TUVALU
UAE
VATICAN CITY
YEMEN

Though there are a few lakes in the country, it is the largest country in the world by area with **no permanent rivers.** Wadis, however, are very numerous. A river is a permanent body of running water. Besides Saudi Arabia, there are 17 other countries, with no river for various reasons.

Countries without rivers are covered primarily by desert. These countries experience arid and semi-arid climates, with little or no rainfall throughout the year. The riverless countries in this category are Saudi Arabia, which is the largest country without a river. Other countries include Bahrain, Kuwait, the United Arab Emirates, Oman, Yemen and Qatar. Most of these countries have river beds that may flood from time to time, but do not have permanent running rivers.

Island countries is another category of countries without rivers. In this category are the Bahamas, Malta, Maldives, Nauru, and Comoros. Island countries are either too small to accommodate the flow of a river or do not have a landform high from which a river can flow. Comoros is one of the smallest countries in the world. Although it receives a lot of rain, the steep mountains and low hills are not high enough to form the source of a river. The terrain of the Bahamas is also low and flat. In Malta, some small rivers can form during the rainy season, but are not permanent. There is also no lake in Malta. In addition to having no rivers, Nauru is the least populated sovereign country in the world. Some island countries are scattered over several atolls, making it difficult for a meaningful and permanent river to form and flow. Countries in this category include Kiribati, which includes more than 32 atolls, the Marshall Islands, which has 29 atolls, and Tuvalu.

Monaco and the Vatican, the two smallest countries in the world, are also riverless countries. The Vatican is located in Rome, Italy, with no river passing through it, despite the many rivers in Italy.

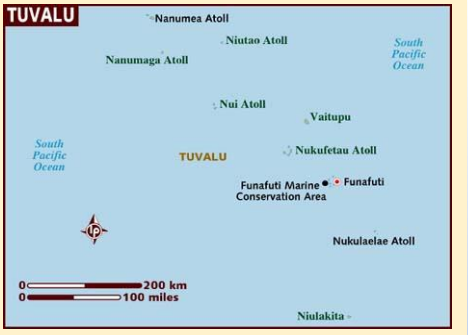
Countries with NO Lakes in the World

Malta has **no permanent rivers or lakes**. In addition to having no rivers, although there are some small rivers at times of high rainfall. However, some watercourses have fresh water running all year round at Baħrija near Ras ir-Raħeb, at l-Imtaħleb and San Martin, and at Lunzjata Valley in Gozo.

Malta officially known as the Republic of Malta is a Southern European island country consisting of an archipelago in the Mediterranean Sea. It lies 80 km south of Italy, 284 km east of Tunisia, and 333 km north of Libya. With a population of about 493,559 over an area of 316 sq. km Malta is the world's 10th smallest in area and 5th most densely populated sovereign country with 1457 per sq. km. Its capital is Valletta, which is the smallest national capital in the European Union by area at 0.8 sq. km

Do You Know?
Countries with NO Rivers and Lakes are Kuwait, Malta, Marshall Islands, Qatar, Tuvalu, Vatican City and Yemen

Tuvalu (formerly known as the Ellice Islands), is a country in Polynesia, located in the Pacific Ocean, situated in Oceania and about midway between Hawaii and Australia. The island country lies east-northeast of the Santa Cruz Islands (which belong to the Solomon Islands), southeast of Nauru, south of Kiribati, west of Tokelau, northwest of Samoa and Wallis and Futuna, and north of Fiji. It is composed of three reef islands and six true atolls spread out between the latitude of 5° to 10° south and longitude of 176° to 180°, west of the International Date Line. Tuvalu has a population of 11,192 (2017 census). The total land area of the islands of Tuvalu is 26 sq. km. Tuvalu is a volcanic archipelago, and consists of three reef islands (Nanumanga, Niutao and Niulakita) and six true atolls (Funafuti, Nanumea, Nui, Nukufetau, Nukulaelae and Vaitupu)



Besides Tuvalu, Kuwait, Marshall Islands, Qatar, Vatican City and Yemen are the other countries with **no prominent lakes.**

The **Maldives** is a small island nation in South Asia, located in the Arabian Sea of the Indian Ocean. It lies southwest of Sri Lanka and India. Maldives is the lowest country in the world, with maximum and average natural ground levels of only 2.4 m and 1.5 m above sea level, respectively, in areas where construction exists. Maldives are at high risk of being submerged due to rising sea levels.

Flattest Country in the World

MALDIVES
Capital: Male
Area: 298 sq. km
Population: 392,473 (2018 est)
Highest Point: 2.4 m

A Kevin Raja project

Countries with NO Mountains in the World

BELARUS
DENMARK
ESTONIA
GAMBIA
GUINEA-BISSAU
KUWAIT
LATVIA
LITHUANIA
MOLDOVA

Belarus in general has a plain and hilly relief and is on average 160 m above the sea level, its highest spot Dzyarzhynskaya Hara reaching as high as 345 m.

Denmark has no mountains, not counting two additional overseas constituent countries - the Faroe Islands and Greenland. The country is flat with little elevation; having an average height above sea level of 31 m, with its highest point Møllehøj at 170.86 m.

Estonia's average elevation reaches only 50 m and the country's highest point is the Suur Munamägi in the southeast at 318 m. Estonia's forests cover half the country and are home to a wonderful range of wildlife including bears, wolves, lynx, flying squirrels, wild boar, deer and elk. It has thousands of wetlands, some of which are over 3,000 years old.

The **Gambia**'s highest point is Red Rock at only 53 m. Most of the country is mangrove swamp, floodplain, or a coastal beach.

The **Guinea-Bissau**, a small tropical country lies at a low altitude; its highest unnamed point is 300 m. The interior is savanna.

Kuwait is mostly hot desert and its highest point Mutla Ridge is 306 m.

Latvia lies on the eastern shores of the Baltic Sea on the level north-western part of the rising East European platform, between Estonia and Lithuania. About 98% of the country lies under 200 m elevation, Gaiziņkalns at 311.6 m being the highest point.

Lithuania's terrain is moderate lowlands and highlands; its maximum elevation is Aukštojas Hill at 294 m in the eastern part of the country.

Moldova's highest point, Balănesti Hill, rises to 430 meters amid the Codri Hills of west-central Moldova. The average elevation is only 147 m.

Places with NO Trees in the World

GREENLAND
HAITI
QATAR
THE FAROE ISLANDS

A Kevin Raja project

Greenland is the world's largest island, located between the Arctic and Atlantic oceans, east of the Canadian Arctic Archipelago. It is an autonomous territory within the Kingdom of Denmark. With an area of 2,166,086 sq. km. and population of 55,992 (2019 est.) its population density is 0.028 / sq. km. It has no native forests.

Greenland is a land without GREEN. The average daily temperature of its capital, Nuuk varies over the seasons from −5.1 to 9.9 °C. In northern Greenland, the ground is covered with a carpet of mosses and low-lying shrubs such as dwarf willows and crowberries. Flowering plants in the north include yellow poppy, Pedicularis, and Pyrola. Plant life in southern Greenland is more abundant, such as the dwarf birch and willow, may grow several feet high.

Haiti is a country located on the island of Hispaniola in the Greater Antilles archipelago of the Caribbean Sea. It is 27,750 sq. km in and has an estimated population of 11.1 million, making it the 2nd most populous country in the Caribbean after Cuba.

It is said that until the year 1923, around 60% area of Haiti was covered in trees. However, this small Caribbean country fell prey to huge deforestation and today only some small shrubs left.

Qatar is rich, safe, owns the world's greatest airline, and is home to a large number of skyscrapers. But sadly, this opulent country has no trees. With area of 11,581 sq. km and population of 2,641,669 (2017 est.), most of the country consists of a low, barren plain, covered with sand. To the southeast lies the Khor al Adaid ("Inland Sea"), an area of rolling sand dunes surrounding an inlet of the Persian Gulf.

The **Faroe Islands**, is a North Atlantic archipelago, 320 km north-northwest of Scotland, and halfway between Norway and Iceland. It is an autonomous territory within the Kingdom of Denmark. The islands have a total area of about 1,400 sq. km with a population of 51,783 as of June 2019. The natural vegetation is dominated by arctic-alpine plants, wildflowers, grasses, moss, and lichen.

Largest & Tall Living Tree in the World

Sequoiadendron Giganteum, (giant sequoia); also known as giant redwood, Sierra redwood, Sierran redwood, Wellingtonia or simply big tree, a nickname also used by John Muir is the sole living species in the genus Sequoiadendron. They are the most massive individual trees in the world. The world's **largest living tree** is General Sherman the giant sequoia, growing in the Sequoia National Park, California, USA. It stands 82.6 m tall, has a diameter of 8.2 m and a circumference of approximately 25.9 m. The trunk had a volume of 1,530 cubic m in 2004.

However, the **tallest tree** currently living is Hyperion, which measured 115.85 metres (380 feet 1 inch) as of 2017. This coast redwood (Sequoia sempervirens) was discovered by Chris Atkins and Michael Taylor (both USA) in the Redwood National Park, California, USA, on 25 August 2006.

Largest & Smallest Fruits in the World

Atlantic Giant Pumpkin

is the world's currently the **largest fruit** on earth ever grown. The Atlantic Giant is likely a descendant of Mammoth Pumpkin, which held the world record from 1904 to 1976. The current records-breaking heavy-weighed fruit is still pumpkin but it is in 2014 that the new world record was proposed. The record-breaking pumpkin weighed 1,054 kg. It was grown by Beni Meier. He broke 3 new world records in three weeks. This fruit was until today placed in the world record for heaviest fruit.

The fruit of species in the genus of **Wolffia** is the **smallest and lightest fruit** in the world. Two of the smallest species of Wolffia in the world, the Australian Wolffia angusta, and the Asian/African Wolffia globosa are so small that it is difficult to distinguish between the size of their fruits. The fruit of Wolffia angusta is 0.30 mm long and weighs about 70 micrograms.

Largest Flower in the World

Rafflesia Arnoldii, called as the ‘corpse lily’ or ‘stinking corpse lily’, is a species of flowering plant in the parasitic genus Rafflesia. It is noted for producing **the largest individual flower** on Earth. It has a very strong and unpleasant odour of decaying flesh, earning it the nickname "corpse flower". It is endemic to the rainforests of Sumatra and Borneo.

Rafflesia arnoldii (*padma raksasa* in Indonesia), also called *kerubut* (devil's betelnut box), is one of the 3 national flowers in Indonesia, the other two being the white jasmine and moon orchid. It was officially recognized as a national "rare flower"

The flower of Rafflesia arnoldii grows to a diameter of around one meter, but the greatest measurement from a reliable source is 105 cm for one at Palupah Nature Reserve near Bukittinggi, Sumatra measured by Prof. Syabuddin of Andalas University. Rafflesia weighs up to 11 kg. These flowers emerge from very large, cabbage-like, maroon or magenta buds typically about 30 cm wide, but the largest flower bud ever recorded, 43 cm in diameter was found at Mount Sago, Sumatra in May 1956.

Smallest Flowering Plant in the World

Wolffia Globosa is a species of flowering plant known by the common names Asian watermeal and duckweed. It is native to Asia and is found in parts of the Americas, where it may be native or naturalized. It grows in mats on the surface of calm, freshwater bodies, such as ponds, lakes, and marshes. It is a very tiny, oval-shaped plant with no leaves, stems, or roots. The body of the plant, a transparent green frond, is less than a millimeter wide. In one human experiment, processed Wolffi globosa was reported to provide dietary protein and vitamin B12. It has been described as the world's **smallest flowering plant**, at 0.1–0.2 mm in diameter

Known in Thai as Pham, it is a popular item in Thai cuisine, especially in Isan.

Youngest ‘Planet’

K2-33b, also known by its EPIC designation EPIC 205117205.01, is a very young super-Neptune exoplanet, orbiting the pre-main-sequence star K2-33. It was discovered by NASA's Kepler spacecraft on its "Second Light" mission. It is located about 456 light-years (140 parsecs) away from Earth in the constellation of Scorpius. The exoplanet was found by using the transit method, in which the dimming effect that a planet causes as it crosses in front of its star is measured. It is mostly notable for its extremely **young age** − a mere 9.3 million years old, only other exoplanet is even younger with an age of 2 Myr (V830 Tau b). K2-33b is a super-Neptune, an exoplanet that has a mass and radius larger than that of Neptune. It has an equilibrium temperature of 850 K (577 °C; 1,070 °F). It has a radius of 5.04 R⊕. While the exoplanet's mass hasn't been constrained yet, upper estimates place a mass of 3.6 MJ.

Given this age, the planetary system most likely formed back near the end of the Miocene epoch of the Earth's history. Observations made on the planet confirmed that it was in fact a fully formed exoplanet, not just a protoplanet. In 2014, NASA's Kepler spacecraft began its "Second Light" mission, after two of its reactor wheels had failed the previous year, ending the primary mission. From 23 August to 13 November 2014, the spacecraft collected data from the core of Upper Scorpius, which included K2-33. The exoplanet was simultaneously discovered by two independent research groups, one led by astronomers from the California Institute of Technology and the other led by astronomers from the University of Texas at Austin.

Oldest ‘Planet’

While our solar system may seem old at 4.6 billion years, the oldest planets discovered are twice and even three times as old as our oldest planet, which is Jupiter, as well as the largest planet in our solar system.

However, including exoplanets and protoplanets, **PSR B1620−26b** is one of the oldest known extrasolar planets, believed to be about 12.7 billion years old. It is an exoplanet located approximately 12,400 light-years from Earth in the constellation of Scorpius. The planet is in a circumbinary orbit around the two stars of PSR B1620-26 (which are a pulsar (PSR B1620-26 A) and a white dwarf (WD B1620-26)) and is the first circumbinary planet ever confirmed. It is also the first planet found in a globular cluster.

Space Special

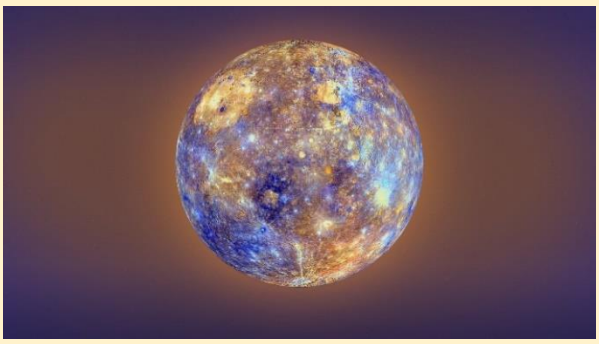
Largest Planet

Jupiter is the fifth planet from the Sun and the **largest** in the Solar System. It is a gas giant with a mass one-thousandth that of the Sun but two-and-a-half times that of all the other planets in the Solar System combined.

JUPITER
A Kevin Raja project
Surface Area: $6.1419 \times 10_{10}$ sq.km
Volume: $1.4313 \times 10_{15}$ cubic km
Mass: $1.8982 \times 10_{27}$ kg
Mean Density: 1,326 kg / cubic m
Mean Radius: 69,911 km
Av. Orbital Speed: 13.07 km/s
Orbital Period: 11.862 years
Distance from Earth to Jupiter: 628,730,000 km
Distance from Sun to Jupiter: 778,547,200 km

Jupiter is one of the brightest objects visible to the naked eye in the night sky, and has been known to ancient civilizations since before recorded history. When viewed from Earth, Jupiter can be bright enough for its reflected light to cast shadows, and is on average the third-brightest natural object in the night sky after the Moon and Venus.

Jupiter has 79 known natural satellites. Of these, 63 are less than 10 kilometres in diameter and have only been discovered since 1975. The four largest moons, visible from Earth with binoculars on a clear night, known as the "Galilean moons", are Io, Europa, Ganymede, and Callisto.



Smallest Planet

MERCURY
A Kevin Raja project
Surface Area: $7.48 \times 10_{7}$ sq.km
Volume: $6.083 \times 10_{10}$ cubic km
Mass: $3.3011 \times 10_{23}$ kg
Mean Density: 5.427 g/cubic cm
Mean Radius: 2,439.7±1.0 km
Av. Orbital Speed: 47.362 km/s
Orbital Period: 87.9691 days
Distance from Earth to Mercury: 105.98 million km
Distance from Sun to Mercury: 65.5 million km

Mercury is the **smallest** and innermost planet in the Solar System. Its orbit around the Sun takes 87.97 days, the shortest of all the planets in the Solar System. Like Venus, Mercury orbits the Sun within Earth's orbit as an inferior planet, and its apparent distance from the Sun as viewed from Earth never exceeds 28°. Mercury appears to have a solid silicate crust and mantle overlying a solid, iron sulfide outer core layer, a deeper liquid core layer, and a solid inner core.

Venus is the 2nd planet from the Sun. As the 2nd-brightest natural object in the night sky after the Moon, Venus can cast shadows and, rarely, is visible to the naked eye in broad daylight. Venus is by far the **hottest planet** in the Solar System, with a mean surface temperature of 735 K (462 °C; 863 °F), even though Mercury is closer to the Sun. As the planet with the closest approach to Earth, Venus has been a prime target for early interplanetary exploration. It was the 1st planet beyond Earth visited by a spacecraft (Mariner 2 in 1962), and the 1st to be successfully landed on (by Venera 7 in 1970). In January 2020, astronomers reported evidence that suggests that Venus is currently volcanically active.

Venus, which can be seen with the unaided eye from Earth, is the **brightest planet** in our Solar System. It was given the nickname evening star and morning star because of its bright, consistent presence.

Venus is one of the 4 terrestrial planets in the Solar System, meaning that it is a rocky body like Earth. It is similar to Earth in size and mass, and is often described as Earth's "sister" or "twin.

The **lack of an intrinsic magnetic field** at Venus was surprising, given that it is similar to Earth in size and was expected also to contain a dynamo at its core. Conditions on the Venusian surface differ radically from those on Earth because its dense atmosphere is 96.5% carbon dioxide, with most of the remaining 3.5% being nitrogen.

Mercury and Venus are the 2 planets that have **no moons**. The other planets in the solar system have a combined total of 146 moons, with 27 more moons waiting for confirmation.

Hottest Planet

Brightest Planet Seen from Earth

Largest Planet With No Magnetic Field

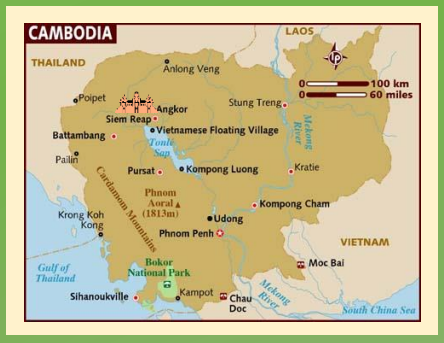
Largest Planet Without a Moon

VENUS
Surface Area: 4.6023×10^8 sq.km
Volume: 9.2843×10^{11} cubic km
Mass: 4.8675×10^{24} kg
Mean Density: 5.243 g / cubic cm
Mean Radius: 6,051.8±1.0 km
Av. Orbital Speed: 35.02 km/s
Orbital Period: 224.701 days
Distance from Earth to Venus: 106.64 million km
Distance from Sun to Venus: 107.48 million km

Largest Religious Monument in the World

Angkor Wat is a Buddhist temple complex in Cambodia and is the **largest religious monument / structure** in the world, on a site measuring 162.6 hectares (1,626,000 sq. m). Originally constructed as a Hindu temple dedicated to the god Vishnu for the Khmer Empire, it was gradually transformed a Buddhist temple towards the end of the 12th century. It was built by the Khmer King Suryavarman II in the early 12th century in Yaśodharapura, the capital of the Khmer Empire, as his state temple and eventual mausoleum. Breaking from the Shaiva tradition of previous kings, Angkor Wat was instead dedicated to Vishnu. As the best-preserved temple at the site, it is the only one to have remained a significant religious centre since its foundation. The temple is at the top of the high classical style of Khmer architecture. It has become a symbol of Cambodia, appearing on its national flag, and it is the country's prime attraction for visitors.

Angkor Wat combines two basic plans of Khmer temple architecture: the temple-mountain and the later galleried temple. It is designed to represent Mount Meru, home of the devas in Hindu mythology: within a moat more than 5 kilometres (3 mi) long and an outer wall 3.6 kilometres (2.2 mi) long are 3 rectangular galleries, each raised above the next.



At the centre of the temple stands a quincunx of towers. Unlike most Angkorian temples, Angkor Wat is oriented to the west; scholars are divided as to the significance of this. The temple is admired for the grandeur and harmony of the architecture, its extensive bas-reliefs, and for the numerous devatas adorning its walls. Since the 1990s, Angkor Wat has become a major tourist destination. In 1993, there were only 7,650 visitors to the site; by 2004, government figures show that 561,000 foreign visitors had arrived in Siem Reap province that year, approx. 50% of all foreign tourists in Cambodia. The number reached over a million in 2007, and over two million by 2012. Most visited Angkor Wat, which received which received over two million foreign tourists in 2013 and 2.6 million by 2018.

Tallest Statue in the World

The **Statue of Unity** is a colossal statue of Indian statesman and independence activist Sardar Vallabhbhai Patel (1875–1950), who was the first Deputy Prime Minister and Home minister of independent India and the chief adherent of Mahatma Gandhi during the non-violent Indian Independence movement. It is the world's **tallest statue** with a height of 182 m. It is located on a river facing the Sardar Sarovar Dam on river Narmada in Kevadiya colony. Over 128,000 tourists visited it in 11 days after it was opened to the public on 1 November 2018. The daily average tourist footfall at Statue of Unity during November 2019 reached 15,036, outpacing Statue of Liberty.

STATUE OF UNITY
Country: Gujarat, India
Height: 182 m
Opened: 31 October 2018

Heaviest Statue in the World

The **Statue of Liberty** is a colossal neoclassical sculpture on Liberty Island in New York Harbour in New York, in the United States. The copper statue, a gift from the people of France to the people of the United States, was designed by French sculptor Frédéric Auguste Bartholdi and its metal framework was built by Gustave Eiffel. It was dedicated on October 28, 1886

STATUE OF LIBERTY
Country: Liberty Island, New York, USA
Weight: 207,375 kg
Height: 46 m (statue to torch)
93 m (ground to torch)

Total weight of the Statue of Liberty is 227,375 kg, making it the **heaviest statue** in the world. There are 154 steps from the pedestal to the head of the Statue of Liberty. A group of statues stands at the western end of the island, honouring those closely associated with the Statue of Liberty. 2 Americans: Pulitzer and Lazarus and 3 Frenchmen: Bartholdi, Eiffel, and Laboulaye are depicted.

Heaviest Building in the World

The **Palace of the Parliament** is the seat of the Parliament of Romania. It has a height of 84 m, a floor area of 365,000 sq. m. The Palace of the Parliament is the **heaviest building** in the world weighing 4,098,500,000 kg

Tallest Building in the World

BURJ KHALIFA
Country: Dubai, UAE
Opened: 4 January 2010
Architectural Height: 828 m
Floors: 163 / Lifts: 57

Burj Khalifa

known as the Burj Dubai prior to its inauguration in 2010, is a skyscraper in Dubai, United Arab Emirates. With a total height of 829.8 m and a roof height (excluding antenna, but including a 244 m spire) of 828 m, it has been the **tallest structure and building** in the world since its topping out in 2009. On 28 March 2011, Alain "Spiderman" Robert scaled the outside of Burj Khalifa. The climb to the top of the spire took 6 hours.

Followed by Burj Khalifa are Shanghai Tower (632 m) in China, world's tallest twisted building and Abraj Al-Bait Clock Tower (601 m) in Saudi Arabia, tallest building with a clock face.

Largest Office Building in the World

THE PENTAGON
Location: Virginia, USA
Floor Area: 620,000 sq. m
Height: 22 m
Completed: 15 January, 1943

The **Pentagon** is the headquarters building of the United States Department of Defence. The Pentagon is the world's **largest office building**, with about 600,000 sq. m of space, of which 340,000 sq. m are used as offices. Some 23,000 military and civilian employees, and another 3,000 non-defense support personnel, work in the Pentagon.

The Pentagon is listed on the National Register of Historic Places and is a National Historic Landmark.

On 11 September, 2001, coincidentally the 60th anniversary of the Pentagon's ground breaking, hijackers deliberately crashed an airliner into the western side of the Pentagon at 9:37 am, as part of the 911 attacks. The impact of the plane severely damaged the outer ring of one wing of the building and caused its partial collapse

Largest Building Area in the World

NEW CENTURY GLOBAL CENTRE
Country: Chengdu, China
Floor Area: 1,700,000 sq. m
Opened: 1 July 2013

A Kevin Raja project

New Century Global Centre is a multipurpose building in Chengdu, China, It houses offices, conference rooms, a university complex, two commercial centre, hotels, an IMAX cinema, a "Mediterranean village", a pirate ship and an Olympic-size skating rink. The centrepiece, is a water park ("Paradise Island Water Park"), containing artificial beach, where a giant 150 by 40 m screen forms the horizon to offer sunrises and sunsets

The 100 m tall structure is 500 by 400 m with 1,700,000 sq. m of floor space, making it the world's **largest building** measured by floor space. The Boeing Everett Factory in Everett, Washington, in the United States has the largest volume, while AvtoVAZ main assembly building has the largest footprint.

Boeing Everett Factory, in Everett, Washington, is an airplane assembly building owned by Boeing. Located on the north-east corner of Paine Field, it is the **largest factory building** in the world by volume at 13,385,378 m3 (472,370,319 cu ft) and covers 399,480 m2 (98.7 acres; 39.948 hectares; 0.399 square kilometres). This is the factory where the wide-body Boeing 747, 767, 777, and 787 are assembled.

Largest Factory Building Area in the World

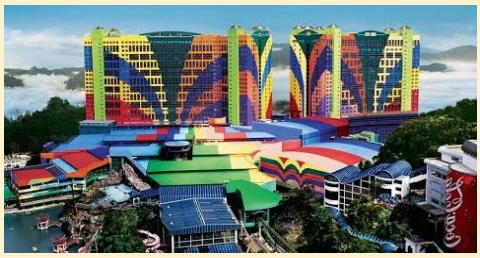
BOEING EVERETT FACTORY
Location: Washington, USA
Area: 399,480 sq. m
Volume: 13,385,378 cubic m
Employees: 30,000

A Kevin Raja project

Largest Hotel in the World

FIRST WORLD HOTEL
Country: Genting, Malaysia
Total Rooms: 7,351
Opened: 2001 (Tower 1)
2005 (Tower 2)
2014 (Tower 2A)

A Kevin Raja project



First World Hotel is a three-star hotel in Resorts World Genting, Pahang, Malaysia. Featuring a total of 7,351 rooms, it has set the Guinness World Records for the **largest hotel** in the world (by number of rooms). In 2006, it featured 6,118 rooms, making it the largest hotel until The Palazzo took the title, an expansion of The Venetian located on Las Vegas Strip which was officially opened on 1 January 2008. In 2015, First World Hotel regained the title after the opening of a new block. The hotel has received 35.5 million guests since 2006

First World Hotel is the first hotel in Southeast Asia to launch E-Kiosk or Express Check-in and Check-out kiosks.

Largest Shopping Mall in the World

IRAN MALL
Country: Iran
Area: 1.4 million sq. m.
Opened: 2018

A Kevin Raja project

The **Iran Mall** as of 2020, the world's **largest shopping mall**. Parts of it are still under construction. Located in northwest Tehran by Chitgar Lake, its 1st of 2 phases opened in 2018. It currently occupies an area of 1.4 million sq. m. The 1st phase includes 700 shops, a 20,000 sq. m hypermarket, a fashion avenue, a diamond and crystal atrium, 3 food courts with more than 200 restaurants, a 3,300 sq. m. book garden with 67,000 volumes of books and several book stores, a cinema complex with 12 IMAX cinemas as well as a state-of-the-art 2,000-seat theatre, a family entertainment centre with a roofed amusement park, a museum, art galleries, a permanent car showroom, an Iranian Bazaar, and 3 hotels including a 5-star luxury hotel with 450 rooms, a 3,000-seat conference hall, a convention centre, several galleries, and meeting and banquet facilities.

The roof of the mall serves as a sports complex with long routes for hiking, cycling, and public activities. It includes 15 sports fields, tennis courts, a 12,000 square meter ice rink and swimming pools. The remaining 550,000 sq. m. are to be inaugurated as part of the 2nd phase. When the project is complete, the total area of the mall will be 1.95 million sq. m.

Largest Man-Made Fountain in the World

The **Fountain of Wealth** is listed by the Guinness Book of Records in 1998 as the **largest fountain** in the world. It is located in one of Singapore's largest shopping malls, Suntec City.

FOUNTAIN OF WEALTH
Country: Singapore
Area: 1683.07 sq. m
Height: 13.8 m

During certain periods of the day, the fountain is turned off and visitors are invited to walk around a mini fountain at the centre of the fountain's base, three times for good luck. At night, the fountain is the setting for laser performances, as well as live song and laser message dedications between 8 pm to 9 pm daily. It is situated in such a way the fountain is the hub of the shopping mall

Constructed in 1995, the fountain is made of silicon bronze, and consists of a circular ring with a circumference of 66 m supported on four large slanted columns. The base of the fountain is located underground, and on its base perimeter lies the main basement restaurant area of Suntec City. The circular ring top of the fountain is visible at ground level.

Largest Man-Made Waterfalls in the World

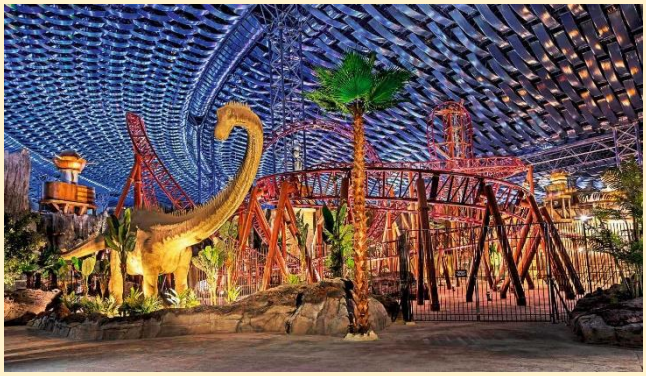
The **Cascata delle Marmore** or Marmore Falls is a man-made waterfall created by the ancient Romans. Its total height is 165 m, making it the **tallest man-made waterfall** in the world. Of its three sections, the top one is the tallest, at 83 m. Its source is portion of the waters of river Velino (the rest of the river flows into a hydroelectric power plant), after flowing through Piediluco lake near the community of Marmore.

CASCATA DELLE MARMORE
Country: Umbria, Italy
Total Height: 165 m
Longest Drop: 83 m
Number of Drops: 3

The world's **largest man-made waterfall** (from a building) makes a striking addition to the facade of this skyscraper in the south-western Chinese city of Guiyang. The **108 metre** water feature cascades from the top levels of the Liebian International Building, a 121-metre tower being developed by the Ludi Industry Group.

Largest Theme Park in the World

IMG WORLDS OF ADVENTURE
Country: Dubai, UAE
Area: 140,000 sq. m.
Opened: 15 August 2016

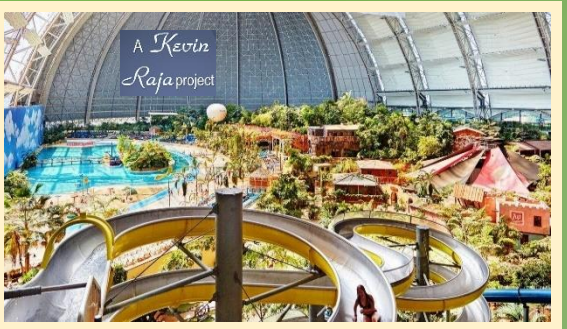


IMG Worlds of Adventure is an indoor amusement park in the United Arab Emirates in Dubai. It is Dubai's first mega themed entertainment destination. The park is divided into five "epic zones". Two of the five zones represent global brands Cartoon Network and Marvel, while IMG Boulevard and the Lost Valley – Dinosaur Adventure zones are original concepts created by the IMG Group.

It is the **largest temperature controlled indoor themed entertainment destination** in the world, covering an area in excess of 140,000 sq. m. With the capacity to welcome more than 20,000 guests a day, the destination features roller coasters, thrill rides, and other attractions based on popular Cartoon Network characters, iconic Marvel Super Heroes and animatronic dinosaurs. Other facilities include a variety of themed retail stores and dining venues, and a 12-screen Novo cinema complex.

Biggest Indoor Water Theme Park in the World

TROPICAL ISLANDS RESORT
Country: Krausnick, Germany
Opened: 19 December 2004



Tropical Islands Resort is a tropical theme park located in the former Brand-Briesen Airfield in Halbe, in Germany. It is housed in a former airship hangar, the **biggest free-standing hall** in the world.

It has a maximum capacity of 8,200 visitors a day. In its first year of operation it attracted 975,000 visitors. Approximately 600 people work at Tropical Islands. It has a world record for the **largest indoor waterpark** and is bigger than Canada's World Waterpark at West Edmonton Mall. It is also the fourth-largest building in the world by usable volume. The bathing area includes a 27-metre high water slide tower with four slides, a children's play area and a crazy golf course.

Largest Indoor Arena in the World

PHILIPPINE ARENA
Country: Philippines
Grounds: 36,443.6 sq. m.
Seating Capacity: 55,000
Inaugurated: 21 July 2014

The **Philippine Arena** is the world's **largest indoor arena**. It is a multipurpose indoor arena about 30 km north of Manila. It is one of the centrepieces of the many centennial projects of the Iglesia Ni Cristo (INC) for their centennial celebration on 27 July, 2014.

The seating layout of the arena is different from that of a standard arena where the stage is at the middle and is surrounded by seats. The seating of this arena closely resembles that of a Greek amphitheatre, built in a semi-circle with the seats at the sides and front of the arena stage

Largest Stadium in the World

RUNGRADO STADIUM
Country: Pyongyang, North Korea
Capacity: 150,000
Area: 207,000 sq. m
Opened: 1 May 1989

The **Rungrado 1st of May Stadium**, also known as the May Day Stadium, is a multi-purpose stadium in Rungra Island, Pyongyang, North Korea which was opened on 1 May 1989 . Its first major event was the 13th World Festival of Youth and Students. It is the **largest stadium** in the world, with a total capacity of approximately 114,000. The site occupies an area of 20.7 hectares. It is commonly confused with the nearby 50,000 capacity Kim Il-sung Stadium due to proximity, but possesses unique size and seating capacities which provide distinction. It is currently used for football matches, a few athletics events, but most often for the mass games of the Arirang Festival

City with Most Skyscrapers in the World

Hong Kong officially the Hong Kong Special Administrative Region of the People's Republic of China (HKSAR), is a city and special administrative region of China and is one of the most densely populated places in the world.

HONG KONG
Skyscrapers: 355
Area: 2,755 sq. km
Population: 7,500,700
Density: 6,777 / sq. km

Hong Kong is on China's southern coast, 60 km (37 mi) east of Macau, on the east side of the mouth of Pearl River estuary. It is surrounded by the South China Sea on all sides except the north, which neighbours the Guangdong city of Shenzhen along the Sham Chun River. The territory's 2,755 sq. km (1,064 sq mi) area consists of Hong Kong Island, the Kowloon Peninsula, the New Territories, Lantau Island, and over 200 other islands. The territory's highest point is Tai Mo Shan, 957 metres (3,140 ft) above sea level.

Hong Kong has the world's **largest number of skyscrapers**, with 355 towers taller than 150 metres (490 ft), and the third-largest number of high-rise buildings in the world.

City with Most Bridges in the World

Hamburg, officially the Free and Hanseatic City of Hamburg is the 2nd largest city in Germany after Berlin and 7th largest city in the European Union. Hamburg's many streams, rivers and canals are crossed by some 2,500 bridges, more than London, Amsterdam and Venice put together. Hamburg has more bridges inside its city limits than any other city in the world.

HAMBURG (Germany)
Area: 755.22 sq. km
Population: 1,822,445
Density: 2,400 / sq. km

Longest Bridge in the World

DANYANG-KUNSHAN GRAND BRIDGE
Country: China
Total Length: 164.8 km
Opened: 30 June 2011

Danyang - Kunshan Grand Bridge, a 169 km-long (105 mi), and world's **longest bridge** is a viaduct on the Beijing–Shanghai High-Speed Railway. The bridge is located on the rail line between Shanghai and Nanjing in Jiangsu province. The bridge runs roughly parallel to the Yangtze River, about 8 to 80 km south of the river. It passes through the northern edges of population centres (from west to east) beginning in Danyang, Changzhou, Wuxi, Suzhou, and ending in Kunshan. There is a 9-km long section over open water across Yangcheng Lake in Suzhou.

Shortest International Bridge in the World

Zavikon Island refers to either the larger or the pair of islands in the Thousand Islands archipelago on the St. Lawrence River between New York and Ontario, two kilometres southeast of Rockport, Ontario and about 200 metres (660 ft) north of the international boundary.

A popular tale among local guides is that the larger island is in Canada, while "Little Zavikon Island" is in the United States, and the footbridge between them is the "**shortest international bridge** in the world“

Widest Bridge in the World

SAN FRANCISCO-OAKLAND BAY BRIDGE
Country: USA
Width: West, 17.5 m (5 lanes)
East, 78.74 m (10 lanes)
Length: 7.18 km
Height: 160 m

A Kevin Raja project

San Francisco–Oakland Bay Bridge, world's **widest bridge**, is a complex of bridges spanning San Francisco Bay in California. It carries about 260,000 vehicles a day on its two decks. It has one of the longest spans in the United States.

It opened on Thursday, November 12, 1936, six months before the Golden Gate Bridge. It originally carried automobile traffic on its upper deck, with trucks, cars, buses and commuter trains on the lower, but after the Key System abandoned rail service, the lower deck was converted to all-road traffic as well.

Unlike the western section and the original eastern section of the bridge, the new eastern section is a single deck with the eastbound and westbound lanes on each side making it the world's widest bridge, according to Guinness World Records, as of 2014. Demolition of the old east span was completed on September 8, 2018

Longest Suspension Bridge in the World

The **Akashi Kaikyo Bridge** is a suspension bridge, which links the city of Kobe on the Japanese mainland of Honshu to Iwaya on Awaji Island. It crosses the busy Akashi Strait as part of the Honshu-Shikoku Highway. It was completed in 1998, and has the **longest central span of any suspension** bridge in the world, at 1,991 metres (1.237 mi). It is one of the key links of the Honshū–Shikoku Bridge Project, which created 3 routes across the Inland Sea.

AKASHI-KYOTO
Country: Japan
Total Length: 3.911 km
Height: 282.8 m
Longest Span: 1.991 m
Clearance below: 65.72 m
Opened: 5 April 1998

A Kevin Raja project

The 2 towers were 1,990 m apart, but the Great Hanshin earthquake on January 17, 1995, moved the towers so much (only the towers had been erected at the time) that the span had to be increased by 1 m (3.3 ft).

It has a total of 1,737 illumination lights.

Akashi-Kaikyo Bridge and Awaji Island

Largest Pool in the World

San Alfonso del Mar is a private resort in Algarrobo, Chile, about 100 km (62 mi) west of Santiago. The resort had one of the world's largest swimming pools. At the time of its completion in 2006, it was in the Guinness Book of World Records for the **largest pool** in the world by area. From the year 2010, the pool is no longer available for swimming, due to lack of maintenance.

The pool is 1,013 m (3,323 ft) long, covering 8 ha (20 acres),containing some 250 million litres of seawater, with a maximum depth of 3.5 m. The water is pumped from the adjacent Pacific Ocean, then filtered and treated. Access to the pool limited to resort residents only. There is no hotel at the premises, just apartments.

Deepest Pools in the World

Nemo 33 is an indoor non chlorinated fresh water facility in Brussels, Belgium. It held the record as the **deepest indoor swimming pool** in the world between its opening on 1 May 2004, and the completion of Y-40 in Montegrotto Terme, Popular Mechanics rates Nemo 33 as one of the top 18 strangest pools in the world.

Y-40 "The Deep Joy", the world's **deepest pool**, named in Guinness World Records, is in Hotel Terme Millepini, Padua, Italy. The pool is 42.15 m deep and contains 4,300 cubic metres of thermal water kept at a temperature of 32-34 degrees Celsius. The pool features underwater caves and a suspended, transparent underwater tunnel for guests to walk through. When it opened on 5 June 2014, it was awarded "Deepest Swimming Pool for Diving".

Deepest Hole in the World

The **Kola Superdeep Borehole** is the result of a scientific drilling project of the Soviet Union in the Pechengsky District, on the Kola Peninsula. The project attempted to drill as deep as possible into the Earth's crust. Drilling began on 24 May 1970 using the Uralmash-4E, and later the Uralmash-15000 series drilling rig. Boreholes were drilled by branching from a central hole. The deepest, SG-3, reached 12,262 metres (40,230 ft) in 1989 and is the **deepest artificial point** on Earth. The borehole is 23 centimetres (9 in) in diameter.

KOLA SUPERDEEP BOREHOLE
Country: Russia
Greatest Depth: 12,262 metres
Opened: 1965

In terms of true vertical depth, it is the deepest borehole in the world. For two decades it was also the world's longest borehole in terms of measured depth along the well bore, until it was surpassed in 2008 by the 12,289 metre-long Al Shaheen oil well in Qatar, and in 2011 by the 12,345 metre-long Sakhalin-I Odoptu OP-11 Well (offshore from the Russian island of Sakhalin)

Deepest Mine in the World

Mponeng is a gold mine in South Africa's Gauteng province. It extends over 4 kilometres (2.5 mi) below the surface, and is considered to be one of the most substantial gold mines in the world. It is also currently the world's **deepest mine** from ground level. The trip from the surface to the bottom of the mine takes over an hour. Over 5400 metric tonnes of rock are excavated from Mponeng each day. At a price of USD19.4 per gram of gold, the mine only needs to extract 10 grams of gold per ton excavated to remain profitable. The mine contains at least 2 gold reefs, the deepest one meter thick.

MPONENG GOLD MINE
Country: South Africa
Depth: over 4 km
Commissioned: 1987

Largest Man-Made Island in the World

FLEVOPOLDER
Country: Netherlands
Area: 970 sq. km
Population: 317,000

A Kevin Raja project

The **Flevopolder** is a polder, or region of reclaimed land, in Flevoland, Netherlands. The eastern part was drained in 1955 and the southern part in 1968.

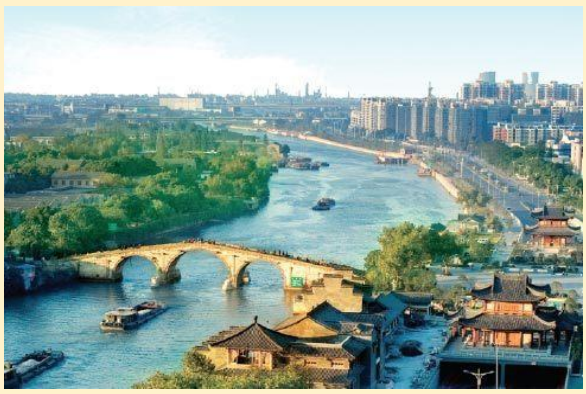
Unlike other major polders, such as Noordoostpolder and the Wieringermeer, the Flevopolder is completely surrounded by bordering lakes, the Veluwemeer, Ketelmeer, and Gooimeer and can therefore be considered an island. It is the **largest artificial island** in the world. Its construction, however, differed from other artificial islands; dikes were first built around the area of the polder, and the water was then drained by diesel/electric pumps.

A polder is a low-lying tract of land that forms an artificial hydrological entity, enclosed by embankments known as dikes.

Largest Canal in the World

GRAND CANAL
Country: China
Length: 1,776 km
Start Point: Beijing
End Point: Hangzhou

A Kevin Raja project



The **Grand Canal**, 'Beijing–Hangzhou Grand Canal', is a UNESCO World Heritage Site, is the **longest as well as the oldest canal** or artificial river in the world. Starting at Beijing, it passes through Tianjin and the provinces of Hebei, Shandong, Jiangsu and Zhejiang to the city of Hangzhou, linking the Yellow River and Yangtze River. The oldest parts of the canal date back to the 5th century BC, but the various sections were first connected during the Sui dynasty (581–618 AD). Dynasties in 1271–1633 significantly rebuilt the canal and altered its route to supply their capital Beijing.

The total length of the Grand Canal is 1,776 km. Its greatest height is reached in the mountains of Shandong, at a summit of 42 m.

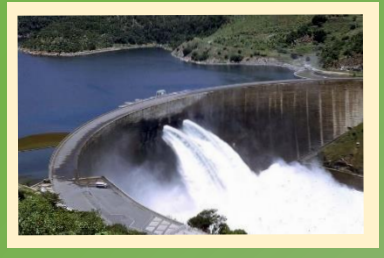
Largest Man-Made Lake in the World

LAKE KARIBA
Countries: Zambia & Zimbabwe
Catchment Area: 663,000 sq. km
Surface Area: 5,580 sq. km
Max Length: 223 km
Max Width: 40 km
Average Depth: 29 m
Max Depth: 97 m
Water Volume: 180 cubic km

Lake Kariba is the world's **largest man-made lake and reservoir** by volume. It lies 1,300 kilometres (810 mi) upstream from the Indian Ocean, along the border between Zambia and Zimbabwe. Lake Kariba was filled between 1958 and 1963 following the completion of the Kariba Dam at its north-eastern end, flooding the Kariba Gorge on the Zambezi River.

The Zimbabwean town of Kariba was built for construction workers on the lake's dam, while some other settlements such as Binga village and Mlibizi in Zimbabwe and Siavonga and Sinazongwe in Zambia have grown up to house people displaced by the rising waters.

The lake has several islands, including Maaze Island, Mashape Island, Chete Island, Sekula, Sampa Karuma, Fothergill, Spurwing, Snake Island, Antelope Island, Bed Island, and Chikanka.



Largest Man-Made Dams in the World

Kariba Dam, is a double curvature concrete arch dam in the Kariba Gorge of the Zambezi river basin between Zambia and Zimbabwe. The dam stands 128 m tall, 579 m long and has crest width of 13 m and base width of 24 m. The dam forms Lake Kariba, which extends for 280 km and holds 185 cubic km of water and is the world's **largest manmade reservoir.**

Tarbela Dam is an earth-filled dam along the Indus River in Pakistan's Khyber Pakhtunkhwa province. The dam is 2.743 km, 143 m high above the riverbed. The dam's reservoir, Tarbela Lake, has a surface area of approximately 250 sq km and 13,69 cubic km in capacity. It is the **largest earth-filled dam** in the world, and also the **largest dam by structural volume**.

Fastest Train in the World

The **Shanghai Maglev** train or Shanghai Transrapid is a magnetic levitation train (maglev) line that operates in Shanghai The line is the third commercially operated maglev line in history (after the British Birmingham Maglev and the German MBahn), the oldest commercial maglev still in operation, and the first commercial high speed maglev with cruising speed of 431km/h (268 mph). It is also **the fastest commercial electric train** in the world.

SHANGHAI MAGLEV TRAIN
Location: Shanghai, China
Top Speed: 431 km/h
System Length: 30.5 km
Opened: 31 December 2002

Deepest Train Station in the World

ARSENALNA
Location: Kiev, Ukraine
Depth: 105.5 m
Opened: 6 November 1960

Arsenalna is a station on Kyiv Metro's Sviatoshynsko-Brovarska Line. The station was opened along with the first stage and is currently the **deepest station** in the world (105.5 metres (346 ft) This is attributed to Kyiv's geography where the high bank of the Dnieper River rises above the rest of the city. Also unusual is the station's design, which lacks a central concourse and is thus similar in layout to stations on the London Underground.

Longest Car in the World

American Dream, a 30.5 m (100 ft) long 26-wheeled limousine, designed by Jay Ohrberg of Burbank, California, USA is recognized by Guinness World Records as the world's **longest car**. It has many features, including a swimming pool with diving board and a king-sized water bed. It is designed to drive as a rigid vehicle or it can be changed to bend in the middle. Its purpose was for use in films and displays. Stretch limousines, the favoured means of transport for Hollywood stars, are not produced by any of the major motor manufacturers, but are made by coach builders who modify standard luxury vehicles. Specifications and levels of luxury vary accordingly. In the United States, vehicles by luxury car manufacturer Lincoln hold the biggest share of the market, although other marques such as Cadillac and Mercedes are also popular. Cadillac has redesigned its new DeVille models with limo conversions in mind, creating a chassis that can handle a 3 m (10 ft) stretch conversion.

Smallest Car in the World

The **Peel P50** is a three-wheeled microcar originally made from 1962 to 1965 by the Peel Engineering Co on the Isle of Man. It was in listed in the 2010 Guinness World Records as the s**mallest production car** ever made. It had no reverse gear, but a handle at the rear allows the very lightweight car to be manoeuvred physically when required. With 134 cm long, 98 cm wide and 100 cm height with an unladen weight of 56 kg, it was and is still road-legal in the UK.

Heaviest Limo in the World

Midnight Rider weighing 22,933 kg the **heaviest limousine**. It is 21.3 m long and 4.1 m high. It was designed by Michael Machado and Pamela Bartholemew (both USA) in California, USA and begun operating on 3 September 2004.

Midnight Rider features three lounges and a separate bar and can accommodate up to 40 passengers, served by a crew of four.

SYMPHONY OF THE SEAS
Port: Nassau, Bahamas
Gross Tonnage: 228,081
Length: 361.011 m
Beam: 47.448 m (waterline)
66 m (max. beam)
Height: 72.5 m
Draught: 9.322 m
Decks: 18
Speed: 22 knots
Max Passengers: 6,680
Crew: 2,200
In Service: 31 March 2018

A Kevin Raja project

Largest Passenger Ship in the World

Symphony of the Seas is an Oasis-class cruise ship owned and operated by Royal Caribbean International. She is the largest passenger ship in the world by gross tonnage, at 228,021 GT, surpassing her sister Harmony of the Seas, which is still slightly longer at 362.12 m.

There are 16 decks for guest use, 4 pools, 22 restaurants and 2,759 cabins. Facilities include a children's water park, a full-size basketball court, ice-skating rink, and two 43-foot rock-climbing walls. There is also a 'central park' which contains over 20,000 tropical plant. Her maiden cruise started from Barcelona, Spain on 7 April 2018 for a week-long trip through the Mediterranean.

Largest Supertanker in the World

Seawise Giant, later known as Knock Nevis was a ULCC super-tanker that was the **longest ship** ever, built by Sumitomo Heavy Industries in Yokosuka, Kanagawa, Japan. It possessed the greatest deadweight tonnage ever recorded. Fully loaded, its displacement was 657,019 tonnes, the **heaviest ship** of any kind, and with a laden draft of 24.6 m, it was incapable of navigating the English Channel, the Suez Canal or the Panama Canal. It is the **largest ship** ever built. It was sunk during the Iran-Iraq War, but was later salvaged and restored to service. It was converted to a floating storage and offloading unit in 2004, moored off the coast of Qatar. The vessel was sold to Indian ship breakers, and renamed Mont for its final journey in December 2009. After clearing Indian customs it sailed to Alang, Gujarat, where it was beached for scrapping.

SEAWISE GIANT
Port: Norway
Gross Tonnage: 260,941
Length: 458.45 m
Height: 72.5 m
Draft: 24.611 m
Depth: 29.8 m
Speed: 16.5 knot
Fate: Scrapped in 2010

A Kevin Raja project

Largest Warship in the World

USS Gerald R. Ford (CVN-78) is the lead ship of her class of United States Navy aircraft carriers. The ship is named after the 38th President of the United States, Gerald Ford, whose World War II naval service included combat duty aboard the light aircraft carrier Monterey in the Pacific Theatre. The keel of Gerald R. Ford was laid down on 13 November 2009. She was christened on 9 November 2013. Gerald R. Ford entered the fleet replacing the decommissioned USS Enterprise (CVN-65), which ended her 51 years of active service in December 2012. Gerald R. Ford was delivered to the Navy on 31 May 2017 and formally commissioned by President Donald Trump on 22 July 2017. She is expected to leave on her first deployment around 2022. As of 2017, she is the world's **largest aircraft carrier**, and the **largest warship** ever constructed in terms of displacement.

USS GERALD R. FORD
Country: United States
Length: 337 m
Beam: 41 m (waterline)
78 m (flight deck)
Height: 76m
Decks: 25
Speed: 56 km / h

A Kevin Raja project

Fastest Ship/s in the World

HSC Francisco is a high-speed catamaran owned by Argentine-Uruguayan ferry company Buquebus operating from Buenos Aires, Argentina and Uruguay's Montevideo. The ship is named after Argentine born Pope Francis.

HSC FRANSISCO
Route: Buenos Aires
to Montevideo
Gross Tonnage: 7,109
Length: 99 m
Speed: 107.6 km /h
Capacity: 1024 passengers
150 cars
Launched: 17 November 2012

A Kevin Raja project

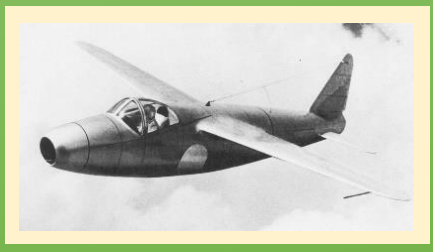
SS United States is a retired ocean liner and the **fastest ocean liner** to cross the Atlantic in either direction, retaining the Blue Riband for the highest average speed at claimed 80 km /h.

The **Algol**-class vehicle cargo ships are currently the **fastest cargo ships** in the world, capable of speeds in excess of 33 knots (61 km/h)

Skjold-class corvettes are a class of six large, superfast, stealth missile corvettes in service with the Royal Norwegian Navy. At 110 km/h, they were the **fastest combat ships** afloat at the time of their introduction.

First Aircrafts

First airplane flies. Near Kitty Hawk, North Carolina, Orville and Wilbur Wright make the first successful flight in history of a self-propelled, heavier-than-air aircraft. Orville piloted the gasoline-powered, propeller-driven biplane, which stayed aloft for 12 seconds and covered 120 feet on its inaugural flight. On December 17, 1903, Wilbur and Orville Wright made four brief flights at Kitty Hawk with their first powered aircraft. The Wright brothers had invented the **first successful airplane**. The Wrights used this stopwatch to time the Kitty Hawk flights.



The **Heinkel He 178** was the world's first aircraft to fly under turbojet power, and the **first practical jet aircraft**. It was a private venture by the German Heinkel company in accordance with director Ernst Heinkel's emphasis on developing technology for high-speed flight. The aircraft made its maiden flight on 27 August 1939, only days before Germany invaded Poland. The test pilot was Erich Warsitz, who had also flown the world's **first rocket powered airplane**, the **Heinkel He 176**, on its maiden flight in June 1939.

The **Messerschmitt Me 262**, nicknamed Schwalbe in fighter versions, or Sturmvogel in fighter-bomber versions, was the world's **first operational jet-powered fighter aircraft**. While German use of the aircraft ended with the close of World War II, a small number were operated by the Czechoslovak Air Force until 1951. It also heavily influenced several designs, such as Sukhoi Su-9 (1946) and Nakajima Kikka.

The **de Havilland DH 106 Comet** was the world's **first commercial jet airliner**. Developed and manufactured by de Havilland at its Hatfield Aerodrome in Hertfordshire, United Kingdom, the Comet 1 prototype first flew in 1949. It featured an aerodynamically clean design with four de Havilland Ghost turbojet engines buried in the wing roots, a cabin, and large square windows. For the era, it offered a relatively quiet, comfortable passenger cabin and was commercially promising at its debut in 1952.

Largest Military Aircrafts in the World

The **Tupolev Tu-160** is a supersonic, variable-sweep wing heavy strategic bomber in the Soviet Union in the 1970s. It is the **largest and heaviest** Mach 2+ supersonic military aircraft ever built and second only to the XB-70 Valkyrie in overall length. It is the **largest and heaviest** combat aircraft, the **fastest bomber** now in use and the **largest and heaviest** variable-sweep wing airplane ever flown.

The **Convair B-36** "Peacemaker" is a strategic bomber built by Convair and operated by the United States Air Force from 1949 to 1959. The B-36 is the largest mass-produced piston-engined aircraft ever built. It had the **longest wingspan** of any combat aircraft ever built, at 70.1 m.

The **Antonov An-124 Ruslan** is a strategic airlift quadjet. Until the Boeing 747-8F, the An-124 was, for thirty years, the world's heaviest gross weight production cargo airplane and second heaviest operating cargo aircraft, behind the one-off Antonov An-225 Mriya (a greatly enlarged design based on the An-124). The An-124 remains the **largest military transport aircraft** in current service.

The **Tupolev Tu-28** was a long-range interceptor aircraft introduced by the Soviet Union in the 1960s. The official designation was Tu-128, but this designation was less commonly used in the West. It was the **largest and heaviest fighter** ever in service. The Tu-128, with its maximum weight of 43 tonnes, was the heaviest fighter to enter service.

Largest Cargo Aircraft in the World

ANTONOV AN-225
Country: Soviet Union
Wingspan: 88.4 m
Length: 84 m
Height: 18.1 m
Weight: 285,000 kg
Max Speed: 850 km/h
First Flight: 21 Dec 1988

The **Antonov An-225 Mriya** is a strategic airlift cargo aircraft in the Soviet Union during the 1980s. It is powered by six turbofan engines and is the **heaviest aircraft** ever built, with a maximum take-off weight of 640 tonnes. It also has the **largest wingspan** of any aircraft in operational service.

The airlifter holds the absolute world records for an airlifted single-item payload of 189,980 kg and an airlifted total payload of 253,820 kg. It has also transported a payload of 247,000 kg on a commercial flight.

On 11 June 2010, the An-225 carried the world's longest piece of air cargo, two 42.1 m test wind turbine blades from Tianjin, China to Skrydstrup, Denmark.

Largest Passenger Aeroplane in the World

The **Airbus A380** is the world's **largest passenger airliner**, a wide-body aircraft manufactured by Airbus. Airbus studies started in 1988 and project was announced in 1990 to challenge the dominance of the Boeing 747 in the long haul market. It was first delivered to Singapore Airlines on 15 October 2007 and entered service on 25 October. On 14 February 2019, after Emirates reduced its last orders in favour of the A350 and the A330neo, Airbus announced that A380 production would end by 2021. The full-length **double-deck** aircraft has a typical seating capacity of 525, though it is certified for up to 853 passengers.

As of December 2019, Airbus has received 251 firm orders and delivered 242 aircraft; Emirates is the biggest customer with 123 ordered, of which 115 have been delivered.

Fastest Passenger Aeroplanes in the World

The **Tupolev Tu-144** is a retired jet airliner and commercial supersonic transport aircraft. It was the world's 1st commercial SST (maiden flight: 31 December 1968), the 2nd being the Anglo-French Concorde (maiden flight: 2 March 1969). It conducted 102 commercial flights, of which only 55 carried passengers, at an average service altitude of 16,000 m and cruised at a speed of around 2,000 km/h (Mach 1.6). The Tu-144 first went supersonic on 5 June 1969 (Concorde first went supersonic on 1 October 1969), and on 26 May 1970 became the world's **first commercial transport to exceed Mach 2.**

Along with early Tu-134s, the Tu-144 was one of the last commercial aircraft with a braking parachute. The prototypes were also the only passenger jets ever fitted with ejection seats, albeit only for the crew and not the passengers.

The Aérospatiale/BAC **Concorde** is a British-French turbojet powered supersonic passenger airliner that was operated until 2003. It had a maximum speed over twice the speed of sound, at Mach 2.04 (2,180 km/h at cruise altitude), with seating for 92 to 128 passengers.

First flown in 1969, Concorde entered service in 1976 and continued flying for the next 27 years. It is one of only two supersonic transports to have been operated commercially. The only supersonic airliner in direct competition with Concorde was the Soviet Tupolev Tu-144, nicknamed "Concordski" by Western European journalists for its outward similarity to Concorde. It had been alleged that Soviet espionage efforts had resulted in the theft of Concorde blueprints, supposedly to assist in the design of the Tu-144.

The fastest transatlantic airliner flight was from New York JFK to London Heathrow on 7 February 1996 by the British Airways G-BOAD in 2 hours, 52 minutes, 59 seconds from take-off to touchdown aided by a 282 km/h tailwind. On 13 February 1985, a Concorde charter flight flew from London Heathrow to Sydney—on the opposite side of the world—in a time of 17 hours, 3 minutes and 45 seconds, including refuelling stops.

Fastest Jets in the World

The Lockheed SR-71 "**Blackbird**" is a long-range, high-altitude, Mach 3+ strategic reconnaissance aircraft that was operated by the United States Air Force. The SR-71 served with the U.S. Air Force from 1964 to 1998. Since 1976, it has held the world record for the **fastest air-breathing manned aircraft,** a record previously held by the related Lockheed YF-12.

The air inlets allowed the SR-71 to cruise at over Mach 3.2, while keeping airflow into the engines at the initial subsonic speeds. Mach 3.2 was the design point for the aircraft, its most efficient speed.

The first flight of an SR-71 took place on 22 December 1964, at Air Force Plant 42 in Palmdale, California, piloted by Bob Gilliland. The SR-71 reached a top speed of Mach 3.4 during flight testing, with pilot Major Brian Shul reporting a speed of Mach 3.5 on an operational sortie while evading a missile over Libya. NASA operated the two last airworthy Blackbirds until 1999. All other Blackbirds have been moved to museums except for the two SR-71s and a few D-21 drones retained by the NASA Dryden Flight Research Centre (later renamed the Armstrong Flight Research Centre).

The North American X-15 was a hypersonic rocket-powered aircraft operated by the United States Air Force and the National Aeronautics and Space Administration as part of the X-plane series of experimental aircraft. It set speed and altitude records in the 1960s, reaching the edge of outer space and returning with valuable data used in aircraft and spacecraft design. The X-15's official world record for the **highest speed ever** recorded by a crewed, powered aircraft, set in October 1967 when William J. Knight flew at Mach 6.70 at 31,120 m, a speed of 7,274 km/h, has remained unbroken as of 2020. Over 13 flights, 8 pilots flew above 80,467, thereby qualifying as astronauts according to the US definition of the space border.

Largest Helicopter in the World

MIL MI-26
Weight: 28,200 kg
Length: 40 m
Height: 8.145 m
First Flight: 14 Dec 1977

A Kevin Raja project

The **Mil Mi-26** is a Soviet/Russian heavy transport helicopter. Operated by both military and civilian operators, it is the **largest and most powerful helicopter** to have gone into series production. The Mi-26 was the first factory-equipped helicopter with a single, eight-blade main lift rotor. While its empty weight is only slightly higher than the Mi-6's, the Mi-26 has a payload of up to 20,000 kg. It is the second largest and heaviest helicopter ever constructed, after the experimental Mil V-12. The tail rotor has about the same diameter and thrust as the four-bladed main rotor fitted to the MD Helicopters MD 500.

The Mi-26 was designed to replace earlier Mi-6 and Mi-12 heavy lift helicopters and act as a heavy-lift helicopter for military and civil use, having twice the cabin space and payload of the Mi-6, then the world's largest and fastest production helicopter.

Largest Military Helicopter in the World

CH 53E SUPER STALLION
Weight: 15,071 kg
Length: 30.2 m
Height: 8.46 m
Rotor: 7 blades
Disc Area: 460 sq. m
Max Speed: 278 km/h
First Flight: 1 March 1974

A Kevin Raja project

The Sikorsky **CH-53E** Super Stallion, a heavy-lift helicopter operated by the U.S. Marine Corps, is the **heaviest and largest** military helicopter. As the Sikorsky S-80 it was developed from the CH-53 Sea Stallion, mainly by adding a third engine, adding a seventh blade to the main rotor and canting the tail rotor 20 degrees. Sikorsky then proposed a new version, originally the "CH-53X", and in April 2006, the U.S. Marine Corps signed a contract for 156 aircraft as the "CH-53K".

Fastest Civilian Helicopter in the World

H 155
Max Speed: 324 km/h
Capacity: 13 passengers
Length: 14.3 m
Height: 4.35 m
Weight: 2.618 kg
Main Rotor Diameter: 12.6 m
First Flight: 17 June 1997

A Kevin Raja project

Airbus Helicopters **H155** (Eurocopter EC155) is a long-range medium-lift passenger transport helicopter. It is a twin-engined aircraft and can carry up to 13 passengers along with 1 or 2 crew.

The helicopter is marketed for passenger transport, offshore support, VIP corporate transport and casualty transport duties. In 2015, the EC155 was formally renamed to the H155. Development began in September 1996 with the helicopter officially announced by Eurocopter at the Paris Air Show in June 1997.

The aircraft is operated by private individuals, companies and charter operators. It is also operated by government organisations and as an offshore transport for the gas and oil industry. Countries using the H155 are China, Germany, Thailand (Police), Dominican Republic (Air Force), Hong Kong and United States (Flying Services).

Fastest Military Helicopter in the World

The Boeing **CH-47 Chinook** is an American twin-engined, tandem rotor, heavy-lift helicopter. The pre-1962 designation for Model 114 development aircraft that would be redesignated CH-47 Chinook. Phases are years from CH-47A, ACH-47A, CH-47B, CH-47C, CH-47D, MH-47D, MH-47E to CH-47F. In 2001, the first CH-47F, an upgraded CH-47D, made its maiden flight. The MH-47G Special Operations Aviation (SOA) version is currently being delivered to the U.S. Army. On 9 November 2006, the HH-47, a new variant of the Chinook based on the MH-47G, was selected by the U.S. Air Force as the winner of the Combat Search and Rescue (CSAR-X) competition.

CH 47F CHINNOK
Max Speed: 310 km/h
Capacity: 33 - 55 troops
Length: 30 m
Height: 5.77 m
Weight: 11,148 kg
Main Rotor Diameter: 18 m (x 2)
First Flight: 21 September 1961

A Kevin Raja project

Shortest Woman in the World

PAULINE MUSTERS
Nationality: Dutch
Born: 26 February 1876
Died: 1 March 1895 (aged 19)
Height: 61 cm (24 in)

Pauline Musters was a Dutch woman. She is recognized by the Guinness World Records as the **shortest woman ever recorded,** standing at only 61 cm tall.

Born in Ossendrecht, the Netherlands, she died in New York City at the age of 19 from a combination of pneumonia and meningitis. At the time of her death, she measured exactly 61 cm (24 in) tall.

Shortest Living Woman in the World

JYOTI KISANGE AMGE
Nationality: Indian
Born: 16 December 1993
Height: 62.8 cm (2 ft 3/4 in)

Jyoti Kisange Amge is an Indian actress notable for being the world's **smallest living woman** according to Guinness World Records.

Following Amge's 18th birthday, she was officially declared the world's smallest woman by Guinness World Records with a height of 62.8 centimetres (2 ft 0.6 in). Her restricted height is due to a genetic disorder called achondroplasia.

Amge was featured in the 2009 documentary entitled Body Shock: Two Foot Tall Teen. She was also a guest participant on Bigg Boss 6, an Indian television show. On 13 August 2014, she was cast in the fourth season of American Horror Story: Freak Show as Ma Petite.

In 2012, she met the world's shortest man, Chandra Bahadur Dangi of Nepal. The pair posed together for the 57th edition of the Guinness World Records.

Her wax statue is also present in Celebrity Wax Museum, Lonavala, a town and a hill station Municipal Council in Pune district in the Indian State of Maharashtra.

Chandra Bahadur Dangi was a Nepali man who was the **shortest man in recorded history** for whom there is irrefutable evidence, measuring 54.6 cm (1 ft 9 1⁄2 in). Dangi was a primordial dwarf. He broke the record of Gul Mohammed (1957–1997), whose height was 57 cm.

Shortest Man in the World

CHANDRA BAHADUR DANGI
Nationality: Nepalese
Born: 30 November 1939
Died: 3 September 2015 (aged 75)
Height: 54.6 cm (1 ft 9 ½ in)

A Kevin Raja project

Dangi came to the attention of the media when a wood contractor saw him in his village in the Dang district of Nepal. He was awarded the title of shortest adult human ever recorded after his height was measured in February 2012. He was included in the Guinness World Records. Three of his five brothers were less than 1.22 m (four feet) tall, while his two sisters and two other brothers are of average height.

Edward Nino Hernandez is the world's **shortest living mobile man**. He was certified on September 4, 2010 by the Guinness World Records. At 24 years of age Hernandez was 0.7 m (2 ft 3 1⁄2 in) tall and weighed 10 kg (22 lb). He lives in Bogotá, Colombia.

Shortest Living Man in the World

Edward Nino Hernandez
Nationality: Colombian
Born: 1986
Height: 72.1 cm

A Kevin Raja project

The previous titleholder, He Pingping of Inner Mongolia, was 3.8 cm (1.5 inches) taller and died on March 13, 2010 in Rome, Italy, where he was filming the TV program Lo show dei record. Hernandez's reign ended on October 14, 2010 when Khagendra Thapa Magar of Nepal turned 18. He reclaimed the record following Magar's death on January 17, 2020.

Edward is a reggaeton, merengue, and vallenato dancer.

When he was born, his parent went to the doctor to do medical studies, but none of them helped them to find out what was happening. After 20 years, they discovered his medical condition. As of today, he consumes a medicine called tyrosine (tirosina in Spanish) that helps him regulating his metabolism, thus, regulating his hypothyroidism.

Robert Pershing Wadlow

known as the Alton Giant and the Giant of Illinois, was an American man who was the **tallest person in recorded history** for whom there is irrefutable evidence. He was born and raised in Alton, Illinois, a suburb of St. Louis Missouri. Wadlow reached 2.72 m in height and weighed 199 kg (439 lb) at his death at age 22. His great size and his continued growth in adulthood were due to hyperplasia of his pituitary gland, which results in an abnormally high level of human growth hormone (HGH). Even by the time of his death, there was no indication that his growth had ended.

Tallest Man in the World

ROBERT WADLOW
A Kevin Raja project
Nationality: American
Born: 22 February 1918
Died: 15 July 1940 (aged 22)
Height: 2.72 m (8 ft 11.1 in)

Sultan Kosen

Sultan Kosen is a Turkish man who holds the Guinness World Record for **tallest living male** at 2.51 m (8 ft 2.82 in). His growth resulted from the condition acromegaly, caused by a tumour affecting his pituitary gland. Due to his condition, he uses crutches in order to walk.

On 25 August 2009 Kösen's standing height was recorded at 246.4 cm in his home country by Guinness World Records, overtaking former world record holder Bao Xishun who stands 236.1 cm tall. Kösen also holds the current Guinness record for the largest hands at 27.5 cm and the second largest feet at 36.5 cm (left foot) and 35.5 cm (right foot). On 25 August 2010, according to the University of Virginia, a height of up to 254.3 cm had been confirmed by doctors, who stated that this might be Kösen's actual height, artificially lowered by scoliosis and bad posture. On 9 February 2011, Kösen was remeasured by Guinness World Records at 251 cm. They also remeasured his hands at 28 cm, which broke his previous record

Tallest Living Man in the World

SULTAN KOSEN
A Kevin Raja project
Nationality: Turkish
Born: 10 December 1982
Height: 2.51 m (8 ft 2 7/8 in)

Tallest Woman in the World

ZENG JINLIAN
Nationality: Chinese
Born: 26 June 1964
Died: 13 Feb 1982 (aged 17)
Height: 248.3 cm (8 ft 1.8 in)

Zeng Jinlian was the **tallest verified woman**, taking over Jane Bunford's record. In the year between Don Koehler's death and her own, she surpassed fellow "eight-footers" Gabriel Estêvão Monjane and Suleiman Ali Nashnush. Zeng's growth patterns were close to Robert Wadlow.

Zeng Jinlian of Yujiang village in the Hunan Province, began to grow abnormally from the age of four months and stood 156 cm (5 ft 1 1/2 in) before her fourth birthday and 217 cm (7 ft 1 1/2 in) when she was aged 13.

Her hands measure 25.5 cm (10 in) and her feet 35.5 cm (14 in) in length. She suffered from both scoliosis and diabetes. Her parents are 163 cm (5 ft 4 1/2 in) and 156 cm (5 ft 1 1/2 in) while her brother was 158 cm (5 ft 2 1/2 in), aged 18.

Heaviest Woman in the World

CAROL ANN YAGER
Nationality: American
Born: 26 January 1960
Died: 18 July 1994 (aged 34)
Weight: 544 kg
Height: 170 cm

Carol Ann Yager was an American woman who was the **heaviest woman ever recorded** and one of the most severely obese people in history.

Yager lost the most weight by non-surgical means in the shortest documented time: 236 kg in 3 months. When Yager died in 1994 at the age of 34, she weighed about 540 kg and was 1.7 m in height.

Heaviest Man in the World

JON BROWER MINNOCH
Nationality: American
Born: 29 September 1941
Died: 10 September 1983 (aged 41)
Weight: 635 kg
Height: 185 cm (6 ft 1 in)

Jon Brower Minnoch was an American man who, at his peak weight, was the **heaviest human being ever recorded**, weighing 635 kilograms (1,400 lb)

At the age of 12, Minnoch weighed 294 lb (133 kilograms and by age 22 he was 185 cm in height and weighed 230 kilograms (500 lb).

Minnoch's weight continued to increase steadily until his hospitalization in March 1978 at age 36 due to cardiac and respiratory failure. That same year, he broke a record for the greatest difference in weight between a married couple when he married his 50 kg wife Jeannette and later fathered two children.

With his underlying condition of edema being incurable and difficult to treat, the decision was made to discontinue treatment, and he died 23 months later on September 10, 1983, aged 41. At the time of his death, he weighed 362 kg (798 lb) with a Body Mass Index of 105.3.

Heaviest Living Man in the World

KHALID BIN MOHSEN SHAARI
Nationality: Saudi Arabian
Born: 28 February 1991
Weight: 610 kg
Height: 173 cm

Khalid bin Mohsen Shaari is a Saudi Arabian man who in August 2013 was found to be the **heaviest living person** and the second-heaviest person in recorded history at 610 kg (1,340 lb), behind Jon Brower Minnoch. He also had a BMI of 204, the highest ever recorded. As a result of medical treatment, he lost a total of 320 kg—more than half his body weight in 6 months.

He was 22 when he was declared the "Fattest man alive". In November 2017, Al Arabiya reported that he had lost 542 kg (1,195 lb) and now weighs 68 kg (150 lb).

Oldest Human/Woman in the World

Jeanne Louise Calment was a French supercentenarian from Arles, and the **oldest human** whose age was well-documented, with a lifespan of 122 years and 164 days. Her longevity attracted media attention and medical studies of her health and lifestyle.

According to census records, Calment outlived both her daughter and grandson. She was widely reported to have been the oldest living person in 1988 at 112, and was declared the oldest person ever in 1995 at age 120.

Some researchers have challenged Calment's extreme age due to statistical unlikelihood, and have examined the possibility that her daughter Yvonne may have assumed Calment's identity in 1934. Other researchers have dismissed this hypothesis on the basis of extensive prior research into Calment's life.

JEANNE CALMENT
Nationality: French
Born: 21 February 1875
Died: 4 August 1997
(aged 122 years, 164 days)

A Kevin Raja project

Oldest Living Woman in the World

KANE TANAKA
Nationality: Japanese
Born: 2 January 1903

A Kevin Raja project

Kane Tanaka is a validated Japanese supercentenarian who, at age 117 years, is the world's **oldest verified living person / woman** following the death of 117-year-old Chiyo Miyako on 22 July 2018. She is the ninth verified oldest person ever.

Kane, from Fukuoka, Japan, has been officially confirmed as the oldest person living at 116 years 66 days old as of 9 March 2019. On 30 January 2019 (when she was 116 years 28 days), she was confirmed as the oldest person alive and was presented with her certificates for that record and oldest woman living in a ceremony at her home.

She was born prematurely on 2 January 1903, the same year the Wright brothers became the first to achieve powered flight.

Kane is 5 years shy of the record for oldest person ever, which has been held by Jeanne Louise Calment (France) for the past 23 years

Oldest Man in the World

JIROEMON KIMURA
Nationality: Japanese
Born: 19 April 1897
Died: 12 June 2013
(aged 116 years, 54 days)

A Kevin Raja project

Jiroemon Kimura was a Japanese supercentenarian. He became the **oldest verified male** in history on 28 December 2012, at the age of 115 years and 253 days when he surpassed the age of Christian Mortensen who died in 1998, and also became the first, and so far the only, man who indisputably reached 116 years of age, being 116 years, 54 days old at the time of his death from natural causes on 12 June 2013, in a hospital in his hometown of Kyōtango, Kyoto Prefecture, Japan. He was the last verified living man born in the 19th century, as well as the last living person born in 1897.

Kimura became the oldest living man in Japan upon the death of Tomoji Tanabe on 19 June 2009, the world's oldest living man upon the death of Walter Breuning on 15 April 2011, the oldest living person in Japan upon the death of Chiyono Hasegawa on 2 December 2011, and the world's oldest living person upon the death of Dina Manfredini (who was only 15 days older) on 17 December 2012, until his own death. After Breuning's death, Kimura was also the last living man born before 1900. Breuning and Kimura were also the only two verified men born before 1900 who were living in the second decade of the 21st century (2011–2020).

Oldest Living Man in the World

SATURNINO de la FUENTE
Nationality: Spanish
Born: 8 February 1909

A Kevin Raja project

Saturnino de la Fuente, a Spanish is the **oldest known living man**, aged 111 years, after the death of Robert Weighton on 28 May 2020, at the age of 112 years, 60 days.

Saturnino de la Fuente Garcia, the youngest of six siblings, was born in León, Spain on 8 February 1909. He has lived in the same province of Spain for his entire life.

Englishman Robert Weighon, who held the title for the oldest person living (male), has passed away due to cancer. Bob Weighton was officially confirmed as the oldest person living (male) at 112 years and 1 day on 30 March 2020.

Most Prolific Father Ever in the World

Feodor Vassilyev was a peasant from Shuya, Russia. His first wife is claimed to have lived to be 76 and, between 1725 and 1765, have had 69 children (16 pairs of twins, 7 sets of triplets and 4 sets of quadruplets); 67 of them survived infancy with the loss of one set of twins: the **record for most children born to a single woman**. However their name, date of birth, and date of death are all unknown.

Vassilyev also had 18 children with his second wife, who had 6 pairs of twins and 2 sets of triplets, making him a father of 87 children in total. Of his 87 children, at least **82 are said to have survived infancy**.

The data about his children are included in the Guinness Book of World Records.

FEODOR VASSILYEV
Nationality: Russian
Born: 1707
Died: 1782 (aged 74-75)
Number of children: 87

A Kevin Raja project

Most Children Delivered at a Single Birth to Survive

NADYA DENISE SULEMAN
Nationality: American
Born: 11 July 1975
Children: 14 (6 + 8)

A Kevin Raja project

Nadya Suleman (born Natalie Denise Suleman, known as Octomom in the media, is an American media personality who came to international attention when she **gave birth to octuplets** (8 offspring) on 26 January 2009. One week after their birth, they surpassed the previous worldwide survival rate for a complete set of octuplets set by the Chukwu octuplets in 1998. The circumstances of their high order multiple birth led to controversy in the field of assisted reproductive technology as well as an investigation by the Medical Board of California of the fertility specialist involved.

Nadya conceived the octuplets and her six older children via in vitro fertilization (IVF). Although she initially denied ever having used public assistance, she confirmed in April 2012 on NBC's Today show that she was on public assistance.

First Human / Man in Space

YURI GAGARIN
Nationality: Russian
Mission: 12 April 1961
Born: 9 March 1934
Died: 27 March 1968 (aged 34)

A Kevin Raja project

Yuri Alekseyevich Gagarin was a Soviet Air Force pilot and cosmonaut who became the **first human to journey into outer space**, achieving a major milestone in the Space Race; his capsule Vostok 1 completed one orbit of Earth on 12 April 1961. Gagarin became an international celebrity and was awarded many medals and titles, including Hero of the Soviet Union, his nation's highest honour.

Vostok 1 was Gagarin's only spaceflight but he served as the backup crew to the Soyuz 1 mission, which ended in a fatal crash, killing his friend and fellow cosmonaut Vladimir Komarov. Fearing for his life, Soviet officials permanently banned Gagarin from further spaceflights. After completing training at the Zhukovsky Air Force Engineering Academy on 17 February 1968, he was allowed to fly regular aircraft. Gagarin died five weeks later when the MiG-15 training jet he was piloting with his flight instructor Vladimir Seryogin crashed near the town of Kirzhach.

Valentina Vladimirovna Tereshkova is a member of the Russian State Duma, engineer, and former cosmonaut. She is the **first and youngest woman to have flown in space** with a solo mission on the Vostok 6 on 16 June 1963. She orbited the Earth 48 times, spent 3 days in space, and remains the only woman to have been on a solo space mission. On the morning of 16 June 1963, Tereshkova and her backup Solovyova were both dressed in spacesuits and taken to the launch pad by bus. After a two-hour countdown, Vostok 6 launched faultlessly, and Tereshkova became the first woman in space; she remains the only woman to fly to space solo, and the youngest at 26 years old.

First Woman in Space

VALENTINA TERESHKOVA
Nationality: Russian
Mission: 16 June 1963
Born: 6 March 1937

A Kevin Raja project

First Men on the Moon

NEIL ARMSTRONG
Nationality: American
Mission: 20 July 1969
Born: 5 August 1930
Died: 25 August 2012

'BUZZ' ALDRIN
Nationality: American
Born: 20 January 1930

A Kevin Raja project

Neil Alden Armstrong was an American astronaut and aeronautical engineer and the **first person to walk on the Moon**. He was also a naval aviator, test pilot, and university professor.

A Saturn V rocket launched Apollo 11 from Launch Complex 39 site at the Kennedy Space Center on July 16, 1969, at 13:32:00 UTC (09:32:00 EDT local time). Armstrong's wife Janet and two sons watched from a yacht moored on the Banana River

On 20 July, 1969, Armstrong and Apollo 11 Lunar Module (LM) pilot Buzz Aldrin became the first people to land on the Moon, and the next day they spent two and a half hours outside the spacecraft while Michael Collins remained in lunar orbit in the mission's command module (CM). When he and Aldrin were ready to go outside, Eagle was depressurized, the hatch was opened, and Armstrong made his way down the ladder. At the bottom of the ladder Armstrong said, "I'm going to step off the LM [lunar module] now".

He turned and set his left boot on the lunar surface at 02:56 UTC July 21, 1969, then said, "That's one small step for [a] man, one giant leap for mankind.

Edwin Eugene Aldrin Jr. is an American engineer, former astronaut and fighter pilot. Aldrin made three spacewalks as pilot of the 1966 Gemini 12 mission, and as the lunar module pilot on the 1969 Apollo 11 mission, he and mission commander Neil were the first two humans to land on the Moon.

Of the 12 people who have walked on the moon, none have been women. NASA's Artemis program aims to change that by landing the first woman on the moon. "In the 1960s, young ladies didn't have the opportunity to see themselves in that role. Today they do, and I think this is a very exciting opportunity." said NASA Administrator Jim Bridenstine. With the ambitious goal to launch this lunar mission by 2024, people have started to speculate about who might be the first woman to walk on the moon. Of the 38 active astronauts in NASA's astronaut corps, 12 are women, and another 5 are in the class that will wrap up astronaut training this year, for a total of 17.

Sir Edmund Percival Hillary was a New Zealand mountaineer, explorer, and philanthropist. On 29 May 1953, Hillary and Sherpa mountaineer Tenzing Norgay became the first climbers confirmed to have **reached the summit of Mount Everest.** They were part of the ninth British expedition to Everest, led by John Hunt.

First Man to Reach Both North & South Poles

Hillary had been part of the British reconnaissance expedition to the mountain in 1951 as well as an unsuccessful attempt to climb Cho Oyu in 1952. As part of the Commonwealth Trans-Antarctic Expedition he reached the South Pole overland in 1958. He subsequently reached the North Pole, making him the **first person to reach both poles and summit Everest**.

First Men to Climb Mount Everest

EDMUND HILLARY
Nationality: New Zealander
Mission: 29 May 1953
Born: 20 July 1919
Died: 11 January 2008 (aged 88)

In January 1948, Hillary and others ascended the south ridge of Aoraki / Mount Cook, New Zealand's highest peak. In 1951 he was part of a British reconnaissance expedition to Everest led by Eric Shipton, before joining the successful British attempt of 1953. In 1952, Hillary and George Lowe were part of the British team led by Shipton, that attempted Cho Oyu. After that attempt failed due to the lack of a route from the Nepal side, Hillary and Lowe crossed the Nup La pass into Tibet and reached the old Camp II, on the northern side, where all the previous expeditions had camped. In 1949, the long standing climbing route to the summit of Everest was closed by Chinese-controlled Tibet. For the next several years, Nepal allowed only one or two expeditions per year. A Swiss expedition (in which Tenzing took part) attempted to reach the summit in 1952, but was forced back by bad weather around 800 feet (240 m) below the summit. On 29 May1953, they reached Everest's 29,028 ft (8,848 m) summit – the highest point on earth – at 11:30 am.

TENZING NORGAY
Nationality: Nepalese
Mission: 29 May 1953
Born: 29 May 1914
Died: 9 May 1986 (aged 71)

Tenzing Norgay born Namgyal Wangdi and often referred to as Sherpa Tenzing, was a Nepali-Indian mountaineer. On his 39th birthday, he was one of the first 2 individuals known to reach the summit of Mount Everest.

First Woman to Climb Mount Everest & 7 Summits

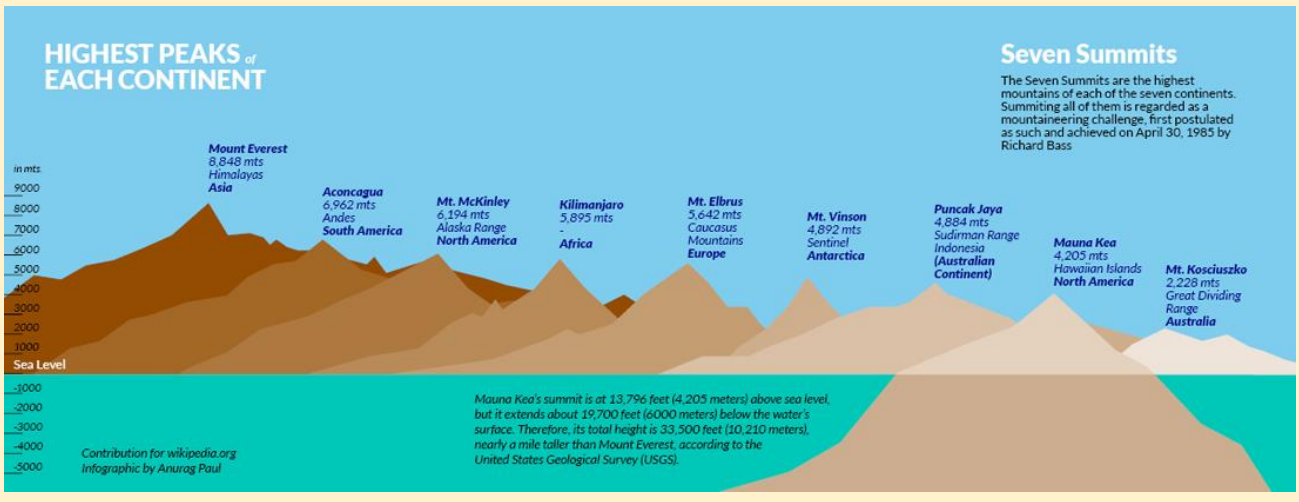
Junko Tabei born Ishibashi Junko was a Japanese mountaineer. She was the **first woman to reach the summit of Mount Everest,** located between Nepal and China, and the **first woman to ascend all the Seven Summits by climbing the highest peak on every continent.**

JUNKO TABEI
Nationality: Japanese
Mission: 16 May 1975
Born: 22 September 1939
Died: 20 October 2016
(aged 77)

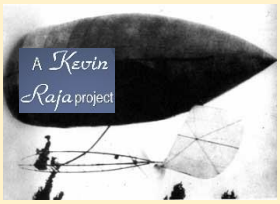
A Kevin Raja project

After a long training period, the team began the expedition early in 1975 when they travelled to Kathmandu. They used the same route to ascend the mountain that Sir Edmund Hillary and Tenzing Norgay had taken in 1953. In early May, the group was camping at 6,300 meters when an avalanche struck their camp. The women and their guides were buried under the snow. Tabei lost consciousness for approximately six minutes until her sherpa guide dug her out. Twelve days after the avalanche, on 16 May 1975, with her sherpa guide, Ang Tsering, Tabei became the **first** woman to reach the summit of Everest.

Tabei climbed Kilimanjaro (5,895 m) in Tanzania in 1980, Mt Aconcagua (6,959 m) in Argentina in 1987, Denali (6,190 m) in Alaska in 1988, Mt Elbrus (5,642 m) in Russia in 1989, Vinson Massif (4,892 m) in Antarctica in 1991 and she completed the Seven Summits in 1992 with her ascent of Jaya Peak (4,884 m) in Indonesia (Australia and Oceania), thus became the first woman to complete the Seven Summits. In addition, she attempted to reach the top of the highest mountain in each country, and she conquered some 70 of the peaks on the list.



First Women Pilots in the World



Aida de Acosta Root Breckinridge (28 July 1884 – 26 May 1962) was an American socialite and the **first woman to fly a powered aircraft solo**. On **27 June 1903**, while in Paris with her mother, she caught her first glimpse of dirigibles. She then proceeded to take only three flight lessons, before taking to the sky by herself.

Therese Peltier (1873 – 1926) was a French aviator. She may have been the **first woman to pilot** a heavier-than-air craft. On unknown date, she made a solo flight of 200 m at a height of 2.5 m at the Military Square in Turin.

Blanche Stuart Scott (April 8, 1884 – January 12, 1970), was possibly the first American woman aviator. On **6 September 1910** either the limiter moved or a gust of wind lifted the biplane and she flew to an altitude of forty feet before executing a gentle landing. Her flight was short and possibly unintentional but Scott is credited as the **first woman** to pilot and solo in an airplane in the US, although Bessica Medlar Raiche's flight on 16 September was accredited as first by the Aeronautical Society of America at the time.

Bessica Faith Raiche (April 1875 – 11 April 1932) was the **first woman** in the United States accredited with flying solo in her homemade airplane at Hempstead Plains, New York, on **16 September 1910**.

Harriet Quimby (11 May 1875 – 1 July 1912) was an early American aviator. In 1911, she was awarded a U.S. pilot's certificate by the Aero Club of America, becoming the first woman to gain a pilot's license in the US. On 16 April 1912, she took off from Dover, England, en route to Calais, France, and made the flight in 59 minutes, landing about 40 km from Calais on a beach in Équihen-Plage, Pas-de-Calais. She became the **first woman** to pilot an aircraft across the English Channel.

Alys McKey Bryant (1880–1954) was an American aviator and the **first woman** to fly on the Pacific Coast and in Canada, on 3 May 1913, who had solo piloted an aircraft prior to December 17, 1916. She set an altitude record for women.

First Women Pilots in the World

Ruth Law Oliver (21 May 1887 – 1 December 1970) was a pioneer American aviator during the 1910s. After World War 1, she continued to set records. After Raymonde de Laroche of France set a women's altitude record of nearly 13,000 ft (3,962 m) on 7 June 1919, She broke Laroche's record on 10 June, flying to 14,700 ft (4,481 m). Laroche in turn, however, broke Oliver's record on 12 June, flying to a height of 15,748 ft (4,800 m).

Raymonde de Laroche (22 August 1882 – 18 July 1919), is thought to be the **first woman** to pilot a plane. She did become the world's first licensed female pilot on March 8, 1910. She received the 36th aeroplane pilot's licence issued by the Aeroclub de France, the world's first organization to issue pilot licences. In June 1919 de Laroche set two women's altitude records, one at 15,700 ft (4,800 m); and also the women's distance record, at 323 km.

Adrienne Bolland, (25 November 1895 – 18 March 1975) was a French test pilot and the **first woman** to fly over the Andes between Chile and Argentina. Bolland's flight was especially challenging. The G.3 could not fly much higher than 4,500 m, well below the range's summits, which reach up to 6,959 m at Aconcagua, South America's highest peak. So, she had to fly between and around them and through valleys, a riskier route than Godoy and her predecessors had chosen.

Amelia Mary Earhart (born July 24, 1897; disappeared July 2, 1937) was an American aviation pioneer and author. Earhart was the **first female aviator** to fly solo across the Atlantic Ocean. Earhart reportedly received a rousing welcome on June 19, 1928, when she landed at Woolston in Southampton, England. She flew the Avro Avian 594 Avian III, SN: R3/AV/101 owned by Lady Mary Heath.

Amy Johnson (born 1 July 1903; disappeared presumed dead 5 January 1941) was a pioneering English pilot who was the **first woman** to fly solo from London to Australia. Flying solo or with her husband, Jim Mollison, she set many long-distance records during the 1930s.

First Woman Helicopter Pilot in the World

Hanna Reitsch (29 March 1912 – 24 August 1979) was a German aviator and test pilot. During the Nazi era, she and Melitta von Stauffenberg flight tested many of the regime's new aircraft.

She set more than 40 flight altitude records and women's endurance records in gliding and unpowered flight. In 1938, Reitsch was the **first female helicopter pilot** and one of the few pilots to fly the Focke-Achgelis Fa 61, the first fully controllable, practical and functional helicopter (first flown in 1936) for which she received the Military Flying Medal.

First Woman Fighter Pilot in the World

Sabiha Gokçen (22 March 1913 – 22 March 2001) was a Turkish aviator. She was the world's **first female fighter pilot**, aged 23, as recognised by Guinness Book of World Records.

During her flying career, some 8,000 hours, 32 of which were combat missions were achieved.

Avani Chaturvedi (born 27 Nov 1993), **Mohana Singh Jitarwal** (27 Oct 1993) and **Bhawana Kanth** (1 Dec 1992) are cohort Indian pilots, declared as the first combat pilots along inducted into the Indian Air Force fighter squadron in June 2016.

In 2018, Avani became the **first Indian woman pilot** to take a solo flight in a MiG-21. In May 2019, Bhawana became the first female fighter pilot in India to qualify to undertake combat missions. On 16 March 2018, she takes the solo flight of Mig-21 'Bison'.

First Woman to break the Sound Barrier

Jacqueline Cochran (11 May 1906 - 9 August 1980) was an American pilot. She was the **first woman to break the sound barrier**. On 18 May 1953, at California, Cochran flew the Sabre 3 and set a new 100 km speed record of 1,050.15 km/h. During the course of this run the Sabre went supersonic, and Cochran became the first woman to break the sound barrier. Later on 3 June, she set a new 15 km closed circuit record of 1078 km/h.

First Women Commercial Airplane Pilot

Helen Richey (1909–1947) was a pioneering female aviator and the **first woman to be hired** as a pilot by a commercial airline in the United States.

In 1933 Richey partnered with another female pilot, Frances Marsalis, to set an endurance record by staying airborne for nearly 10 days, with midair refuelling.

In May 1936, Helen, flying a light plane, set an international altitude record for aircraft weighing under 200 kg. She reached 18,448 ft during a flight from Congressional Airport to Endless Caverns Airport in New Market, Virginia. In addition to being the first female commercial airline pilot, Richey also was the first woman sworn in to pilot air mail and one of the first female flight instructors.

Emily Howell Warner (born 30 October 1939 – 3 July 2020 in Denver, Colorado) is an American airline pilot and the **first woman captain** of a scheduled US airline. On 29 January 1973, Warner was the first woman pilot to be hired by Frontier Airlines, flying Boeing 737, since Helen Richey was hired as a co-pilot in 1934. In 1976 Warner was the first woman to become a US airline captain.

Lynn Rippelmeyer is the **first woman to fly the Boeing 747**. She flew the 747 as a first officer for Seaboard World Airlines 1980-1981. In 1984, Lynn also became the first woman to captain the "Jumbo Jet" across the Atlantic Ocean. On 30 December 1977, she was the first officer (with Captain Emilie Jones) for the first all-female crew for a scheduled commercial US carrier, DHC-6 Twin Otter.

Youngest Female Pilot

Louise Van Meter (13 March 1982 – 15 March 2008) was an American aviator. She was known for setting several "**youngest pilot**" distance-flying records. At the age of 11, she was the youngest "pilot" to fly east to west across the continental United States of America, and the youngest female pilot to cross in either direction. She died from a self-inflicted gunshot wound, at the age of 26. Her suicide was due to her depression.

First Man to Reach Mariana Trench

Victor Vescovo, a retired American naval officer and undersea explorer, is the **first person to have reached the deepest points of four of the Earth's five oceans** during the Five Deeps Expedition of 2018–2019 .

In 2018, Vescovo launched the Five Deeps expedition, whose objective was to thoroughly map and visit the bottom of all five of the world's oceans by the end of September 2019.

This objective was achieved one month ahead of schedule, and the expedition's team successfully carried out biological samplings and depth confirmations at each location. Besides the deepest points of the five world oceans, the expedition also made dives in the Horizon Deep and the Sirena Deep, and mapped the Diamantina Fracture Zone.

In December 2018, he became the first person to reach the deepest point of the Atlantic Ocean– 8,376 m below the ocean surface to the base of the Puerto Rico Trench, an area referred to by world media as Brownson Deep.

On February 4, 2019, he became the first person to reach the bottom of the Southern Ocean, in the southern portion of the South Sandwich Trench.

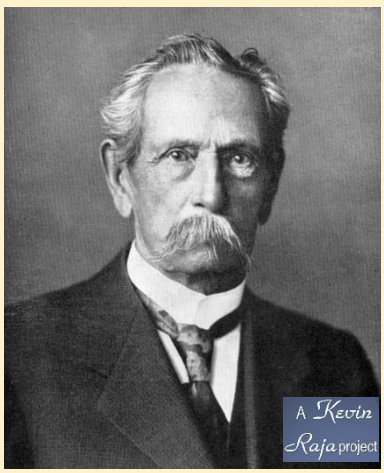
On April 16, 2019, Vescovo dived to the bottom of the Sunda Trench south of Bali, reaching the bottom of the Indian Ocean. The team reported sightings of what they believed to be entirely new species, including a hadal snailfish and a gelatinous organism believed to be a stalked Ascidean.

On April 28, 2019, Vescovo descended nearly 11 km to the **deepest place in the ocean** – the Challenger Deep in Pacific Ocean's Mariana Trench. On his first descent, he piloted the DSV Limiting Factor to a depth of 10,928 m (35,853 ft), a world record by 16 m. Diving for a second time on May 1, he became the first person to dive the Challenger Deep twice, finding "at least three new species of marine animals" and "some sort of plastic waste".

On June 10, 2019, he reached the bottom of the Horizon Deep in the Tonga Trench, confirming that it is the second deepest point on the planet and the deepest in the Southern Hemisphere at 10,823 m.

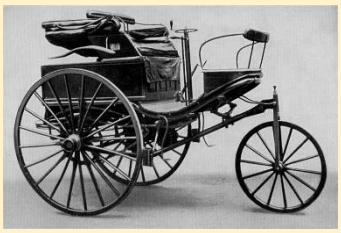
Vescovo completed the Five Deeps Expedition on 24 August 2019 when he reached a depth of 5,550 m at the bottom of the Molloy Deep in the Arctic ocean. He was the first human to reach this location.

Automobiles & Locomotives

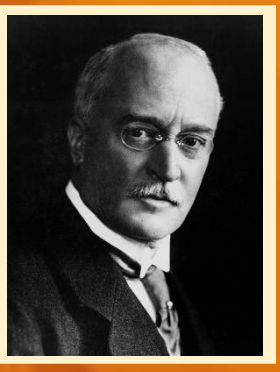


Karl Friedrich Benz (25 Nov 1844 - 4 April 1929) was a German engine designer, automobile engineer, inventor of modern car. His Benz Patent Motor from 1885 is considered the **first practical automobile.** He received a patent for the motorcar in 1886. The world's first ever long distance automobile trip was undertaken by his wife Bertha Benz using a Model 3.

On the morning of 5 August 1888 Bertha took the vehicle on a 104 km trip from Mannheim to Pforzheim to visit her mother, taking he 3 sons with her.

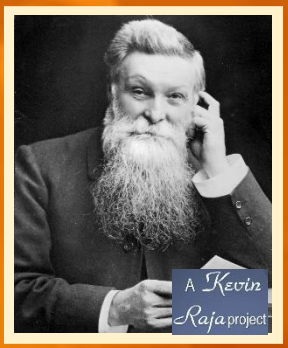


Rudolf Christian Karl Diesel (18 March 1858 - 29 September 1913) was a German inventor and mechanical engineer, famous for the invention of the **Diesel engine**, and for his suspicious death at sea, the English Channel.



From 1893 to 1897, Heinrich von Buz, director of MAN SE in Augsburg, gave Rudolf Diesel the opportunity to test and develop his ideas. The first successful Diesel engine ran in 1897 and is now on display at the German Technical Museum in Munich. Rudolf Diesel obtained patents for his design in Germany and other countries, including the United States. He was inducted into the Automotive Hall of Fame in 1978.

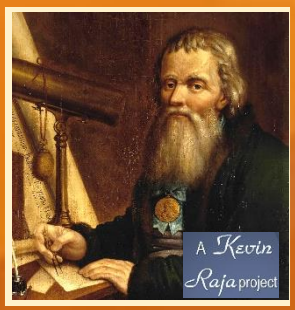
John Boyd Dunlop (5 February 1840 – 23 October 1921) was a Scottish inventor and veterinary surgeon who spent most of his career in Ireland. Familiar with making rubber devices, he re-invented **pneumatic tyres** for his child's tricycle and developed them for use in cycle racing. In October 1887, he developed the **first practical pneumatic** or **inflatable tyre** for his son's tricycle and, using his knowledge and experience with rubber, in the yard of his home in Belfast fitted it to a wooden disc 96 cm across. The tyre was an inflated tube of sheet rubber.



Edouard Michelin (23 June 1859 – 25 August 1940) was a French industrialist. In 1889, he improved greatly on the design of the **pneumatic tyre** for bicycles, making tyres easier to change and repair.

Automobiles & Locomotives

Ivan Petrovich Kulibin (21 April 1735 – 11 August 1818) was a Russian mechanic and inventor.



In 1791, Kulibin constructed a push-cycle cart, in which he used a **flywheel**, a **brake**, a **gearbox** and **roller bearing**. The cart was operated by a man pressing pedals. In the same year, he also designed "mechanical legs", a prosthetic device. 1793, he constructed an **elevator** that lifted a cabin using screw mechanisms. In 1794, he created an **optical telegraph** for transmitting signals over distance. Prior to this, during 1764 - 1767, he built an egg-shaped clock, containing a complex automatic mechanism. Kulibin also designed projects for tower clocks, miniature "clock-in-a-ring" types and others. He also worked on new ways to facet glass for use in microscopes, telescopes and other optical instruments. In 1779, he built a lantern that could emit a powerful light using a weak light source. This invention was used industrially for lighting workshops, lighthouses, ships, etc. In 1801, Kulibin had projects on using steam engines to move cargo ships, on creating salt mining machines, different kinds of mills, pianos and other projects. Kulibin died in 1818 after spending his last years in poverty.

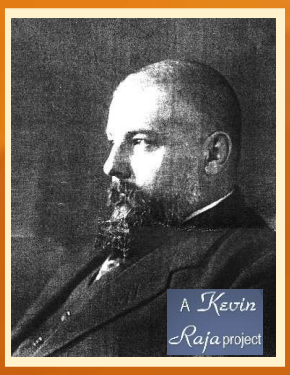
Assen "Jerry" Jordanoff (2 September 1896 - 19 October 1967) was a Bulgarian inventor, engineer and aviator. He is considered to be the founder of aeronautical engineering in Bulgaria. In 1912, at the age of 16, he built his first **workable glider**. The world's first **air bag**, meant to ensure the safety of pilots and automobile drivers alike, was designed by him in 1957. Among other inventions included instruction books & manuals for airplanes, dark box (a simple substitution to the use of an entire dark room in photograph development), Jordaphone (wireless telephone, with an answering function and amplifier and intercom functions and preceded the modern inventions of the answering machine and tape recorder), Frozen Gasoline System for airplanes (to cool the fuel in an aircraft's tank with dry ice and alcohol, thus making it inflammable) and the Reverse Thrust device (made to decrease the specific fuel consumption and to increase the thrust of jet engines).

Thomas "Tom" Parry Jones (27 March 1935 – 11 January 2013) was a Welsh scientist, inventor and entrepreneur. In 1967 in Britain, Thomas developed and marketed the **first electronic breathalyser**, and established Lion Laboratories in Cardiff.

Automobiles & Locomotives

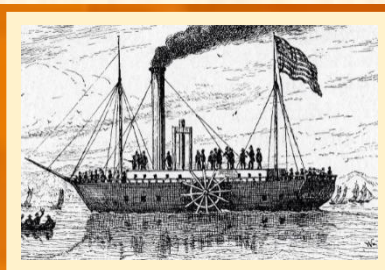
Friedrich Wilhelm Gustav Bruhn (11 November 1853 - 1927) was a German inventor of **modern taximeter** in Berlin and worked for German company Westendarp & Pieper Hamburg.

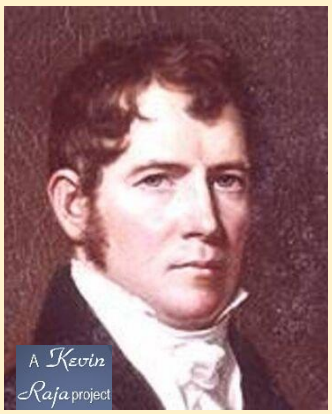
Yury Vladimirovich Lomonosov (24 April 1876 -19 November 1952) was a Russian railway engineer and a leading figure in the development of Russian Railways in the early 20th century. He was best known for design and construction of the world's **first operationally successful mainline diesel locomotive**, the E el-2. This was completed in 1924 and went into service in 1925. From 1923 to 1924 he took on a task of creating the first Russian diesel engine with electric transmission. Using his administrative skills, Lomonosov assembled a creative team of engineers and scientists who managed to design and build a prototype as early as in Spring 1924. The locomotive passed all State tests and examinations and in February 1925 was officially listed under number Юэ 001 at the Soviet railways.



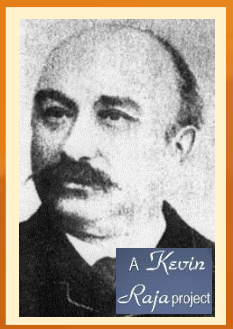
Air & Sea Crafts

Robert Fulton (14 November 1765 – 25 February 1815) was an American engineer and inventor who is widely credited with developing a commercially successful **steamboat**; the first was called North River Steamboat. In 1807 that steamboat travelled on the Hudson River with passengers, from New York City to Albany and back again, a round trip of 480 km, in 62 hours. The success of his steamboat changed river traffic and trade on major American rivers. In 1800, Fulton had been commissioned by Napoleon Bonaparte, leader of France, to attempt to design a submarine; he produced Nautilus, the **first practical submarine** in history. Fulton is also credited with inventing some of the world's earliest **naval torpedoes** for use by the British Royal Navy. He became interested in steam engines and the idea of steamboats in 1777 when he was around age 12 and visited state delegate William Henry of Lancaster, who was interested in this topic. Henry had learned about inventor James Watt and his Watt steam engine on an earlier visit to England. Five ships of the United States Navy have borne the name USS Fulton in honour of Robert Fulton.





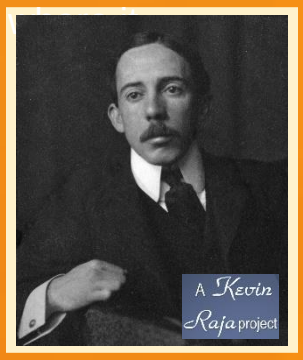
Clement Ader (2 April 1841 - 3 May 1925) was a French inventor and engineer, remembered primarily for his pioneering work in aviation. Using the studies of Louis Pierre Mouillard (1834–1897) on the flight of birds, he constructed his **first flying machine** in 1886, the Ader Eole. It was a bat-like design run by a lightweight steam engine of his own invention, with 4 cylinders with a power rating of 20 hp (15 kW), driving a four-blade propeller. The engine weighed 51 kg. The wings had a span of 14 m. All-up weight was 300 kg. On 9 October 1890 Ader attempted to fly the Eole. Aviation historians give credit to this effort as a powered take-off and uncontrolled flight in ground effect of approximately 50 m at a height of approximately 20 cm. Ader also claimed credit for getting off the ground in the Eole



The **Wright brothers** – Orville (19 August 1871 - 30 January 1948) and Wilbur (16 April 1867 – 30 May 1912) were two American aviation pioneers generally credited with inventing, building, and flying the world's **first successful motor-operated airplane**. They made the first controlled, sustained flight of a powered, heavier-than-air aircraft with the Wright Flyer on 17 December 1903, 6 km south of Kitty Hawk, North Carolina. In 1904–05, the brothers developed their flying machine to make longer-running and more aerodynamic flights with the Wright Flyer II, followed by the **first truly practical fixed-wing aircraft**, the Wright Flyer III. The Wright brothers were also the first to invent aircraft controls that made fixed-wing powered flight possible. The brothers' breakthrough was their creation of a 3 - axis control system, which enabled the pilot to steer the aircraft effectively and to maintain its equilibrium. After experimenting with several sizes of Wright Gliders, in 1903 the brothers built the powered Wright Flyer, using their preferred material for construction, spruce, a strong and lightweight wood, and Pride of the West muslin for surface coverings. Wilbur made a 3 second flight attempt on 14 December 1903, stalling after takeoff and causing minor damage to the Flyer. So their first powered test flight happened on the 121st anniversary of the first hot air balloon test flight that the Montgolfier brothers had done, on December 14, 1782.

Air & Sea Crafts

Alberto Santos-Dumont (20 July 1873 - 23 July 1932) was a Brazilian inventor and aviation pioneer, one of the very few people to have contributed significantly to the development of both lighter-than-air and heavier-than-air aircraft. Santos-Dumont is a national hero in Brazil, where it is popularly held that he preceded the Wright brothers in demonstrating a practical airplane. Although Santos-Dumont continued to work on non-rigid airships, his primary interest soon turned to heavier-than-air aircraft. By 1905, he had finished his first fixed-wing aircraft design, and also a helicopter. Santos-Dumont finally succeeded in flying a **heavier-than-air aircraft** on 23 October 1906, piloting the 14-bis before a large crowd of witnesses at the grounds of Paris' Château de Bagatelle in the Bois de Boulogne for a distance of 60 metres at a height of about five meters. This was the first flight of a powered heavier-than-air machine in Europe. On 12 November 1906 Santos-Dumont set the first world record recognized by the Federation Aeronautique Internationale, by flying 220 metres in 21.5 seconds. On that date he became the first person to be filmed in an airplane in flight.



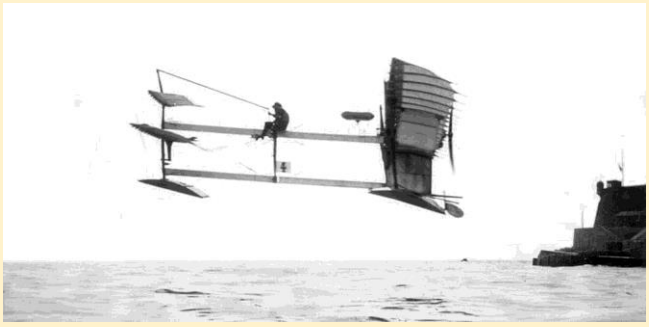
Louis Charles Joseph Bleriot (1 July 1872 - 1 August 1936) was a French aviator, inventor, and engineer. He developed the first practical **headlamp** for cars and established a profitable business manufacturing them, using much of the money he made to finance his attempts to build a successful aircraft. Blériot was the first to use the combination of hand-operated joystick and foot-operated rudder control as used to the present day to operate the aircraft control surfaces. Bleriot was also the first to make a working, powered, piloted monoplane. In 1909 he became world-famous for making the first airplane flight across the English Channel. At 4:15 am, 25 July 1909, watched by an excited crowd, he made a short trial flight in his Type XI, and then, on a signal that the sun had risen, he took off at 4:41 to attempt the crossing. Flying at approximately 72 km/h and an altitude of about 76 m, he set off across the Channel. Not having a compass, he took his course from the Escopette, which was heading for Dover, but he soon overtook the ship and over Dover, cut his engine at an altitude of about 20 m, making a heavy "pancake" landing due to the gusty wind conditions. The flight had taken 36 minutes and 30 seconds.

Karl Jatho (3 February 1873 - 8 December 1933) was a German inventor and aviation pioneer. From August through November 1903, Jatho made progressively longer hops (flights) in a pusher **triplane**, then **biplane**, at Vahrenwalder Heide outside of Hanover. His first flight was only 18 meters at about 1 meter altitude. With a later machine, he would make successful flights in 1909: 60 meters at about at 3–4 meters altitude. He also founded a flying school and an aircraft factory, but did not have much success.

Henri Fabre (29 November 1882 – 30 June 1984) was a French aviator and the inventor of the **first successful seaplane**, the Fabre Hydravion. He intensively studied aeroplane and propeller designs. He patented a system of flotation devices which he used when he succeeded in taking off from the surface of the Etang de Berre on 28 March 1910. On that day, he completed four consecutive flights, the longest about 600 metres. the Hydravion has survived and is displayed in the Musée de l'Air in Paris. Henri Fabre was soon contacted by Glenn Curtiss and Gabriel Voisin who used his invention to develop their own seaplanes.

As late as 1971, Fabre he was still sailing his own boat single-handedly in Marseille harbour.

He died at the age of 101 as one of the last living pioneers of human flight.



Dr. **Ernst Heinkel** (24 January 1888 – 30 January 1958) was a German aircraft designer, manufacturer, Wehrwirtschaftsführer in the Third Reich, and member of the Nazi party. His company Heinkel Flugzeugwerke produced the Heinkel He 178, the world's **first turbojet aircraft** and **jet plane**, and the Heinkel He 176, **the first rocket aircraft**. He built his first aircraft, working from a set of plans by Henri Farman. He crashed the plane in 1911 and suffered severe injuries. In 1981, he was inducted into the International Air & Space Hall of Fame at the San Diego Air & Space Museum.

Nicolas Florine, (19 July 1891 – 21 January 1972), was an engineer who settled in Belgium. He built the **first tandem rotor helicopter** to fly freely in 1933. He was born in Batumi, Georgia.

The first was built in 1927 and made its first flight in 1929. Nicolas Florine built a helicopter with two rotors in tandem, turning in the same direction. To balance the reaction torques, he used his principle of inclining the axes of rotation of the rotors with respect to each other.

Nicolas Florine is also known to have devised a system of three lenses coupled to three filters allowing the superposition of coloured images. This principle was developed in the 1930s for the projection of films in relief.

Mikhail Iosifovich Gurevich (12 January 1893 - 12 November 1976) was a Soviet aircraft designer who co-founded the Mikoyan-Gurevich military aviation bureau along with Artem Mikoyan. The bureau is famous for its **fighter aircraft**, **rapid interceptors** and **multi-role combat aircraft** which were staples of the Soviet Air Forces throughout the Cold War. The bureau designed 170 projects of which 94 were made in series. In total 45,000 MiG aircraft have been manufactured domestically, of which 11,000 aircraft were exported. The last plane which he personally worked on before his retirement was the MiG-25 (above).

Mikhail Leontyevich Mil (22 November 1909 - 31 January 1970) was a Russian aerospace engineer and scientist. He was the founder and general designer of the Mil Moscow Helicopter Plant. Mil's creations won many domestic and international awards and set 69 world records. Most notably, the **Mil Mi-4** won a Gold Medal in the Brussels International Exhibition in 1958. In 1971, after Mil's death, his **Mil Mi-12** (left) won the Sikorsky Prize as the most powerful helicopter in the world. Unlike his Soviet counterpart, Nik Kamov, Mil enjoyed great prestige due to his single-rotor helicopters, as Kamov used the co-axial rotor layout, which was more controversial.

Gleb Yevgeniyevich Kotelnikov (30 January 1872 – November 22, 1944), was the Russian-Soviet inventor of the **knapsack parachute** (1st in the hard casing and then in the soft pack), and braking parachute. In 1911, he created his first parachute RK-1 (which stands for Rantseviy (knapsack) or Russian Kotelnikova (by Kotelnikov), 1st model), that was successfully employed in 1914 during World War I. Later on, Kotelnikov significantly improved the design of his parachute, creating new models, including RK-2 with a softer knapsack, RK-3, and a few cargo parachutes, all of which would be adopted by the Soviet Air Force.

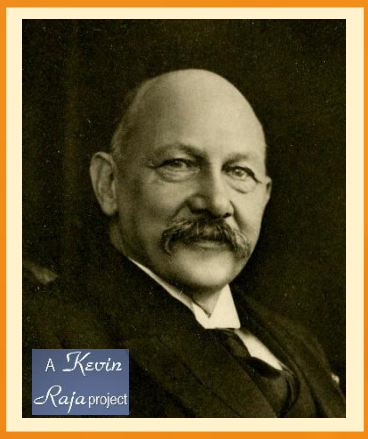
In 1912, on a road near Tsarskoye Selo (now part of St. Petersburg) Kotelnikov successfully demonstrated the braking effects of the parachute by accelerating a Russo-Balt automobile to the top speed, and then opening a parachute attached to the back seat, thus inventing the **drogue parachute**.

In aviation, however, drag chutes were used for the first time only in 1937 by the Soviet airplanes in the Arctic that were providing support for the famous polar expeditions of the era, such as the first manned drifting ice station North Pole-1, launched the same year. The drag chute allowed to land safely on the ice-floes of smaller size. The village Saalisi, where he first tested his parachute was renamed Kotelnikovo in his honor.

Karl Wilhelm Otto Lilienthal (23 May 1848 – 10 August 1896) was a German pioneer of aviation who became known as the "flying man". He was the first person to make well-documented, repeated, successful flights with **gliders**. Newspapers and magazines published photographs of Lilienthal gliding, favourably influencing public and scientific opinion about the possibility of flying machines becoming practical.

On 9 August 1896, Lilienthal went, as on previous weekends, to the Rhinow Hills. The first flights were successful, reaching a distance of 250 m in his normal glider. During the 4th flight Lilienthal's glide pitched forward heading down quickly. He had previously had difficulty in recovering from this position because the glider relied on weight shift which was difficult to achieve when pointed at the ground. His attempts failed and he fell from a height of about 15 m, while still in the glider. He broke his neck and died the next day, 10 August 1896.

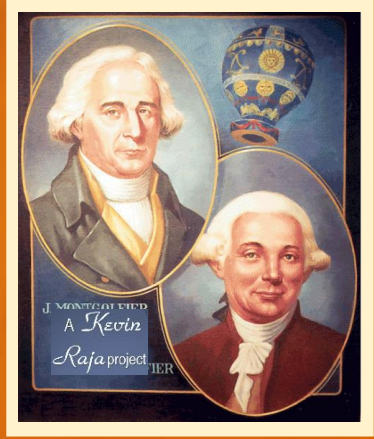
Professor **Heike Kamerlingh Onnes**, (21 September 1853 – 21 February 1926) was a Dutch physicist and Nobel laureate. He



exploited the Hampson–Linde cycle to investigate how materials behave when cooled to nearly absolute zero and later to **liquefy helium** for the first time, in 1908. He also discovered superconductivity in 1911.

On 10 July 1908, he was the first to liquefy helium, using several precooling stages and the Hampson–Linde cycle based on the Joule–Thomson effect. This way he lowered the temperature to the boiling point of helium (−269 °C, 4.2 K). By reducing the pressure of the liquid helium he achieved a temperature near 1.5 K. These were the coldest temperatures achieved on earth at the time. The equipment employed is at the Museum Boerhaave in Leiden.

On 8 April 1911, he found that at 4.2 K the resistance in a solid mercury wire immersed in liquid helium suddenly vanished. He immediately realized the significance of the discovery. He reported that "Mercury has passed into a new state, which on account of its extraordinary electrical properties may be called the superconductive state". Kamerlingh Onnes received widespread recognition for his work, including the 1913 Nobel Prize in Physics for (in the words of the committee) "his investigations on the properties of matter at low temperatures which led to the production of **liquid helium**.

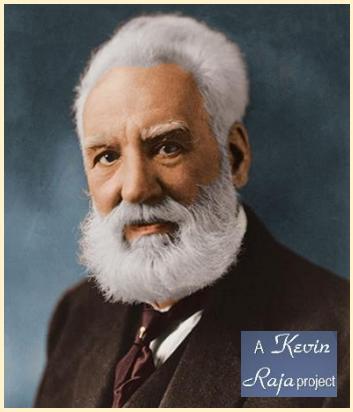


Joseph-Michel Montgolfier (26 August 1740 – 26 June 1810) and **Jacques-Étienne Montgolfier** (6 January 1745 – 2 August 1799) were paper manufacturers from Annonay, in Ardèche, France best known as inventors of the Montgolfière-style hot air balloon, globe aérostatique. They launched the first piloted ascent, carrying Jacques-Étienne. Joseph-Michel also invented the **self-acting hydraulic ram** (1796), Jacques-Étienne founded the first paper-making vocational school and the brothers invented a process to manufacture **transparent paper**. On 4 June 1783, they flew the balloon at Annonay in front of a group of dignitaries from the États ″particuliers″″. The flight covered 2 km, lasted 10 minutes, and had an estimated altitude of 1,600 - 2,000 m. Word of their success quickly reached Paris. Étienne went to the capital to make further demonstrations and to solidify the brothers' claim to the invention of flight.

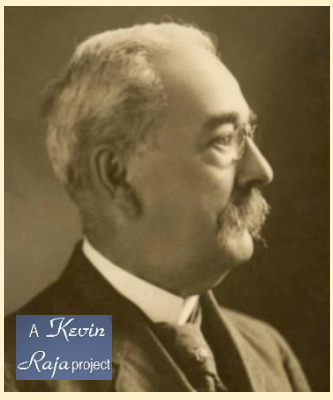
Households (Telephone)

Alexander Graham Bell

(3 March 1847 – 2 August 1922) was a Scottish-born American inventor, scientist and engineer who is credited with inventing and patenting the **first practical telephone**. He also co-founded the American Telephone and Telegraph Company (AT&T) in 1885. Both his mother and wife were deaf, profoundly influencing Bell's life's work. His research on hearing and speech further led him to experiment with hearing devices which eventually culminated in Bell being awarded the first U.S. patent for the telephone, on March 7, 1876. On March 10, 1876 Bell used "the instrument" in Boston to call Thomas Watson who was in another room but out of earshot. He said, "Mr. Watson, come here – I want to see you" and Watson soon appeared at his side.



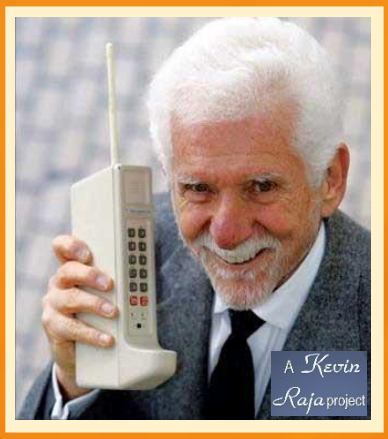
Many other inventions marked Bell's later life, including groundbreaking work in optical telecommunications, hydrofoils, and aeronautics. Although Bell was not one of the 33 founders of the National Geographic Society, he had a strong influence on the magazine while serving as the second president from January 7, 1898, until 1903.



Cyrille Duquet

(31 March 1841 - 1 December 1922) was a Canadian goldsmith, flutist, and inventor in Quebec. Originally working in the field of clocks and watches, he was also a passionate jewelery collector. On 1 February 1878, he was granted a Canadian patent for a **telephone receiver**, that may have been used in early types of handsets. This patent was for a new transmitter based on a cluster of permanent magnets that improved signal clarity, and a new mouthpiece design. Later, Duquet worked on combining transmitter and receiver in one unit, arranged both on each end of a board. The first telephone installed in Montréal was one Duquet designed, and he followed with installing phones and phone lines in the area. At about the same time as Alexander Graham Bell, he developed a telephone connecting his home and shop. Bell's father, Melville Bell, responsible for the Canadian interests of Graham Bell, who had recently moved to Boston, offered Duquet to sell him the rights to the telephone on Canadian soil, for the sum of 20,000 dollars. Unable to raise this colossal sum, Duquet abandoned all interests to the Canadian Telephone Company in 1882.

Households (Telephone)



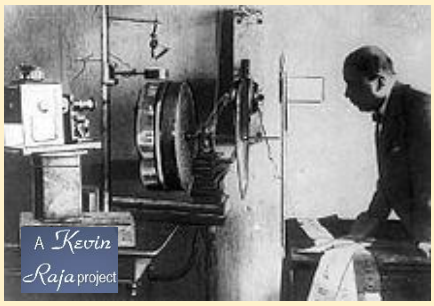
Martin Cooper (born 26 December 1928) is an American engineer. He is a pioneer in the wireless communications industry, esp. in radio spectrum management, with eleven patents in the field. While at Motorola in the 1970s, Cooper invented the first **handheld cellular mobile phone** (distinct from the car phone) in 1973 and led the team that developed it and brought it to market in 1983. He is considered the "father of the (handheld) cell phone“ and is also cited as the first person in history to make a handheld cellular phone call in public. Cooper is co-founder of numerous communications companies with his wife and business partner Arlene Harris.

Randice-Lisa Altschul (born 1960) is an American toy inventor based in Cliffside Park, New Jersey. She is an inventor of the **first disposable cellphone**. She began inventing in 1985 and by age 26 became a millionaire. She has granted more than 200 licenses of ideas for games and toys. In November 1999 Altschul teamed up with Lee Volte. Volte, Senior Vice President of Research and Development at Tyco. Altschul and Volte obtained several patents for what would be the world's first disposable mobile phone. Their intellectual property also included the trademark "Phone-Card-Phone". The new device was a phone that was of a size similar to an existing phone card. The credit card sized device was less than five millimetres thick, and was not made from plastic or metal, but from materials based on recycled paper. Altschul aimed the marketing at those people who would not be interested in a long-term mobile phone contract or tourists who may not usually need a phone but would need one whilst holidaying abroad for the short period of their vacation.

Kazuo Hashimoto (died August 1995) was a Japanese inventor who registered over 1,000 patents throughout the world, including patents for **Caller-ID** system and **telephone answering machine**. He patented his first telephone answering machine, the Ansa Fone, in Japan in 1954, followed by the United States in 1960. He patented Caller-ID in Japan in 1976, and received a United States patent in 1980. In 1983 he invented a digital telephone answering device. He was a recipient of Japan’s Medal of Honour, the Yellow Ribbon, and was designated as a Living National Treasure.

Households (Television)

Hovhannes Abgari Adamian (5 February 1879 – 12 September 1932) was an Armenian engineer, an author of more than 20 inventions. The first experimental colour television was shown in London in 1928 based on Adamian's tricolour principle, and he is recognized as one of the founders of **colour television**.

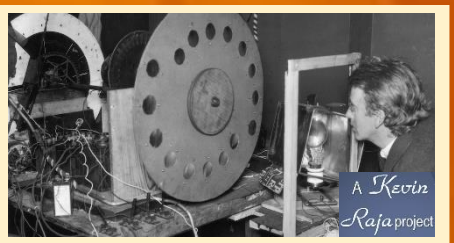


In 1925 in Yerevan, Adamian demonstrated "Eristavi", a device for broadcasting colour images. Supported by his friends and assistants from Armenia, he succeeded in demonstrating on a screen a number of colour figures and patterns transferred from the laboratory next door.

John Logie Baird (13 August 1888 – 14 June 1946) was a Scottish engineer, innovator, one of the inventors of the mechanical television, demonstrating the first working television system on 26 January 1926, and inventor of both the **first publicly demonstrated colour television system,** and the **first purely electronic colour television picture tube.** In 1928 the Baird Television Development Company achieved the first transatlantic television transmission. Baird's early technological successes and his role in the practical introduction of broad casttelevision for home entertainment have earned him a prominent place in television's history. In 1927, Baird transmitted a long-distance television signal over 705 km of telephone line between London and Glasgow; Baird transmitted the **world's first long-distance television pictures** to the Central Hotel at Glasgow Central Station

He demonstrated the **world's first colour transmission** on 3 July 1928, using scanning discs at the transmitting and receiving ends with 3 spirals of apertures, each spiral with a filter of a different primary colour; and 3 light sources at the receiving end, with a commutator to alternate their illumination. As early as 1940, Baird had started work on a fully electronic system he called the "Telechrome". Early Telechrome devices used two electron guns aimed at either side of a phosphor plate.

In 1928, he developed an early video recording device, which he dubbed Phonovision. The system consisted of a large Nipkow disk attached by a mechanical linkage to a conventional 78-rpm record-cutting lathe. The result was a disc that could record and play back a 30-line video signal.



Households (Television)

Philo Taylor Farnsworth

(19 August 1906 – 11 March 1971) was an American inventor and television pioneer. He made many crucial contributions to the early development of **all-electronic television**. He is best known for his 1927 invention of the first fully functional all-electronic image pickup device (video camera tube), the image dissector, as well as the first fully functional and complete all-electronic television system. Farnsworth developed a television system complete with receiver and camera, which he produced commercially through the Farnsworth Television and Radio Corporation from 1938 to 1951. Farnsworth worked out the principle of the image dissector in the summer of 1921, not long before his 15th birthday, and demonstrated the first working version on September 7, 1927, having turned 21 the previous August. Farnsworth also developed the "image oscillite", a cathode ray tube that displayed the images captured by the image dissector.

In later life, Farnsworth invented a small nuclear fusion device, the Farnsworth–Hirsch fusor, employing inertial electrostatic confinement (IEC). It was not a practical device for generating nuclear power, though it provides a viable source of neutrons.

Peter Carl Goldmark

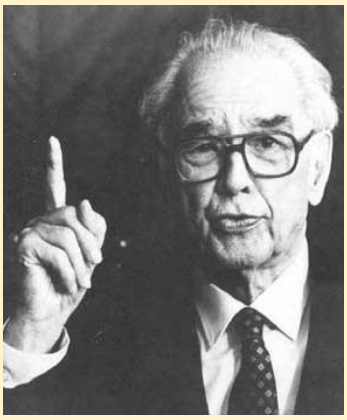
(2 December 1906 – 7 December 1977) was a Hungarian-American engineer who, during his time with Columbia Records, was instrumental in developing the long-playing microgroove 33 1/3 rpm phonograph disc, the standard for incorporating multiple or lengthy recorded works on a single disc for two generations.

In addition to his work on the LP record, Goldmark developed field-sequential colour technology for colour television while at CBS. The system, first demonstrated on August 29, 1940, and shown to the press on September 3 used a rapidly rotating colour wheel that alternated transmission in red, green and blue. The system transmitted on 343 lines, about 100 less than a black and white set, and at a different field scan rate, and thus was incompatible with television sets currently on the market without an adapter.

John Vincent Atanasoff

Households (Computer)

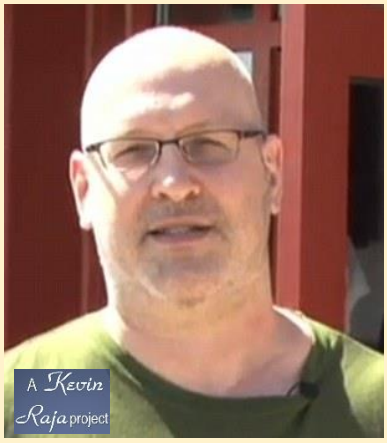
(4 October 1903 – 15 June 1995) was an American physicist and inventor, best known for being credited with inventing the **first electronic digital computer**.



Atanasoff invented the first electronic digital computer in the 1930s at Iowa State College. Challenges to his claim were resolved in 1973 when the Honeywell v **Sperry** Rand lawsuit ruled that Atanasoff was the inventor of the computer. His special purpose machine has come to be called the Atanasoff–Berry Computer.

Steven Paul Jobs

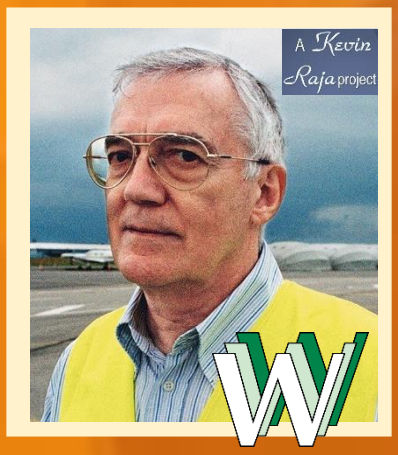
(24 February 1955 – 5 October 2011) was an American business magnate, industrial designer, investor, and media proprietor. He was the chairman, chief executive officer (CEO), and co-founder of Apple Inc., the chairman and majority shareholder of Pixar, a member of The Walt Disney Company's board of directors following its acquisition of Pixar, and the founder, chairman, and CEO of NeXT. Jobs is widely recognized as a pioneer of the **personal computer revolution** of the 1970s and 1980s, along with Apple co-founder Steve Wozniak. Jobs and Wozniak co-founded Apple in 1976 to sell Wozniak's Apple I personal computer. Together the duo gained fame and wealth a year later with the Apple II, one of the first highly successful mass-produced microcomputers.



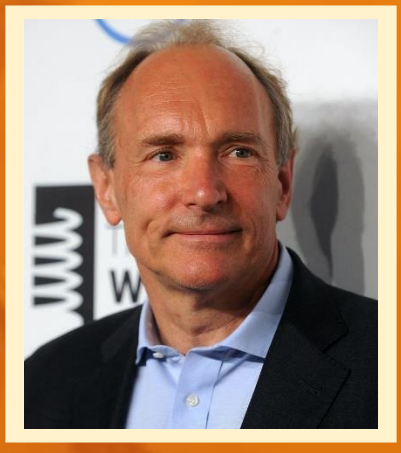
Scott A. Jones and **Brad Bostic**, was based in Carmel, Indiana, United States, part of the Indianapolis metropolitan area, founded ChaCha was a **human-guided search engine**. It provided free, real-time answers to any question, through its website, or by using one of the company's mobile apps, in 2006. ChaCha was founded with the intention to offer human-guided search from within a web browser and for the search engine to learn from the results provided by their freelancers

Households (Computer)

Robert Cailliau (born 26 January 1947) is a Belgian informatics engineer, computer scientist and author who proposed the first (pre-www) hypertext system for CERN in 1987 and collaborated with Tim Berners-Lee on the **World Wide Web** from before it got its name.



He designed the historical logo of the WWW, organized the first International World Wide Web Conference at CERN in 1994 and helped transfer Web development from CERN to the global Web consortium in 1995. In 1993, in collaboration with the Fraunhofer-Gesellschaft Cailliau started the European Commission's first web-based project for information dissemination in Europe (WISE). As a result of his work with CERN's Legal Service, CERN's director of Future Research Walter Hoogland signed the official document that released the web technology into the public domain on 30 April 1993.



Timothy John Berners-Lee

(born 8 June 1955) also known as TimBL, is an English engineer and computer scientist best known as the inventor of the **World Wide Web**. He is the director of the World Wide Web Consortium (W3C) which oversees the continued development of the Web. He is also the founder of the World Wide Web Foundation. He is a director of the Web Science Research Initiative (WSRI)

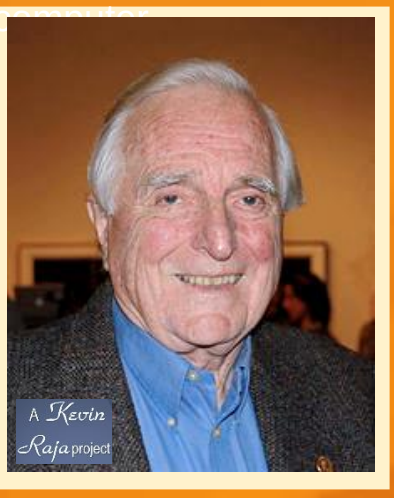
Reynold B. Johnson

(16 July 1906 – 15 September 1998) was an American inventor and computer pioneer. A long-time employee of IBM, Johnson is said to be the "father" of the **hard disk drive.** Other inventions include **automatic test scoring equipment** and the **videocassette tape**. n the early 1930s, Johnson, then a high school science teacher in Michigan, invented an electronic test scoring machine that sensed pencil marks on a standardized form based on the multiple choice test created by Columbia University professor Benjamin D. Wood. Although the first disk drive was crude by modern standards, it launched a multibillion-dollar industry.

Douglas Carl Engelbart

Households (Computer)

(30 January 1925 – 2 July 2013) was an American engineer and inventor, and an early computer and Internet pioneer.



He is best known for his work on founding the field of human–computer interaction, particularly while at his Augmentation Research Centre Lab in SRI International, which resulted in creation of the **computer mouse**, and the development of **hypertext, networked computers**, and precursors to graphical user interfaces.

Richard Francis Lyon

(born 1952) is an American inventor, scientist and engineer. He is one of the two people, (the other was Steve Kirsch) who independently invented the **first optical mouse** devices in late 1980. He has worked in many aspects of signal processing and was a co-founder of Foveon, Inc., a digital camera and image sensor company.

With James J. Spilker and others at Stanford Telecommunications, Lyon designed early **Global Positioning System** (GPS) test transmitters.

With Gaetano Borriello and Alan G. Bell at Xerox PARC, Lyon invented the first single-chip **Ethernet device**.

With Richard R. "Bic" Schediwy at Schlumberger, Lyon did early work on semi-static **CMOS (digital) memory** and designed the most efficient large **CMOS address decoder**.

Auditory processing: Lyon invented a cochlear model that is used as the basis of much auditory research today.

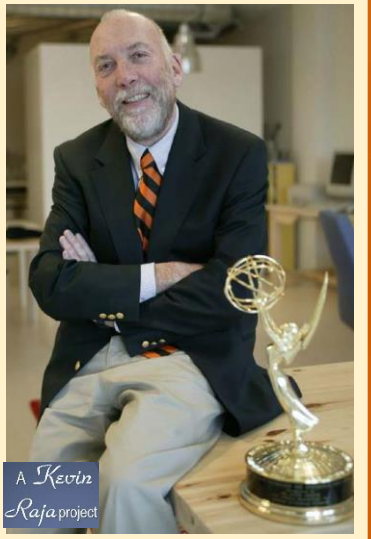
Digital colour photography: With Richard B. Merrill, Carver Mead, and others, Lyon invented optical and integrated-circuit techniques that allow digital cameras to be denser and more accurate.

With Larry Yaeger and Brandyn Webb of Apple, Lyon developed methods for **handwriting recognition** using multilayer perceptrons and related methods.

Households (Computer)

Toshitada Doi (born February 2, 1943) is a Japanese electrical engineer, who played a significant role in the digital audio revolution. He was the driving force behind the PCM adaptor, and was a prominent member of the Sony/Philips taskforce responsible for the design of the **Compact Disc**. He created, among others, the CIRC error correction system. He, with Kees Immink, refutes the myth that the Compact Disc's playing time was determined by Beethoven's Ninth Symphony. He was the lead engineer of the DASH multi-track digital audio tape recorder. In the 1990s, he headed Sony's Digital Creatures Laboratory, where he was responsible for the **Aibo,** Sony's robotic dog. In 2003, Doi created the Qrio, a running humanoid robot.

Kornelis Antonie Schouhamer Immink (born 18 December 1946) is a Dutch scientist, inventor, and entrepreneur, who pioneered and advanced the era of digital audio, video, and data recording, including popular digital media such as **Compact Disc, DVD and Blu-ray Disc**. He has been a prolific and influential engineer, who holds more than 1100 U.S. and international patents. A large portion of the commonly used audio and video playback and recording devices use technologies based on his work. His contributions to coding systems assisted the digital video and audio revolution, by enabling reliable data storage at information densities previously unattainable.



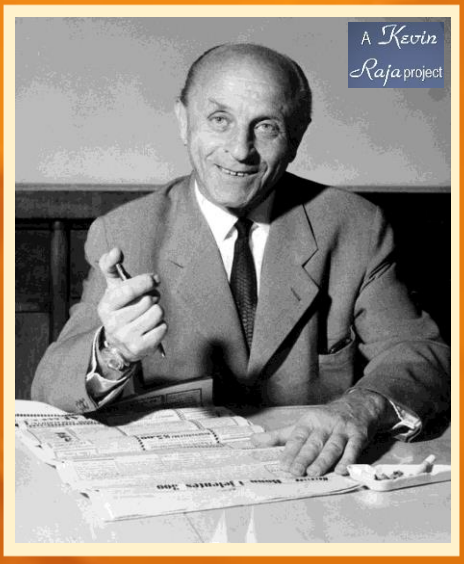
Around 1976, Philips and Sony showed prototypes of digital audio disc players, which were based on optical videodisc technology.

In 1993, Toshiba engineers developed the Super Density Disc, the successor of the Compact Disc. Immink was a member of the Philips and Sony task force, which developed a competing disc format, called MultiMedia CD. Immink created EFMPlus, a more efficient successor of EFM used in CD.

In 1985, he joined Philips' magnetic recording group, where he contributed to the design of coding technologies of the digital video tape recorder, DV and the Digital Compact Cassette (DCC). The DCC was short-lived: introduced in 1992 and discontinued in 1996. The DV, launched in 1994, has become a popular tape standard for home and semi-professional video production.

Households & Stationaries

Cai Lun (c. 50 – 121 CE), formerly romanized as Ts'ai Lun, courtesy name Jingzhong, was a Chinese inventor and eunuch court official of the Han dynasty. He is traditionally regarded as the inventor of **paper** and the **papermaking process**, in forms recognizable in modern times as paper. Although early forms of paper had existed in China since the 2nd century BCE, he was responsible for significant improvements and standardization of papermaking by adding essential new materials into its composition. In 105 CE Cai Lun perfected the paper making process with the use of tree bark, hemp waste, old rags, and fishnets. Out of China's so called Four Great Inventions – the compass, gunpowder, papermaking and printing – Cai Lun's standardization of papermaking makes him the only inventor of those 4 inventions whose name has not been lost to history.



László József Bíró (29 September 1899 – 24 October 1985) was a Hungarian-Argentine inventor who patented the first commercially successful **modern ballpoint pen**. The first ballpoint pen had been invented roughly 50 years earlier by John J. Loud, but it did not attain commercial success. While working as a journalist Bíró noticed that the ink used in newspaper printing dried quickly, leaving the paper dry and smudge-free. He tried using the same ink in a fountain pen, but found that it would not flow into the tip, as it was too viscous.

Dr. **Harry Wesley Coover Jr**. (6 March 1917 – 26 March 2011) is the inventor of Eastman 910, commonly known as **Super Glue**.

In 1942, while searching for materials to make clear plastic gun sights, cyanoacrylate was discovered. At this time they were deemed too sticky to be of use and were set aside. In 1951, he and his team at Eastman Kodak examined cyanoacrylates again. He was overseeing Kodak chemists investigating heat- resistant polymers for jet canopies when cyanoacrylates were once again tested and proved too sticky. When a chemist in the group informed Coover that he had permanently damaged an expensive refractometer by gluing it together, he recognized that he had discovered a unique adhesive. In 1958, the adhesive, marketed by Kodak as Eastman 910 and then as Super Glue, was introduced for sale.

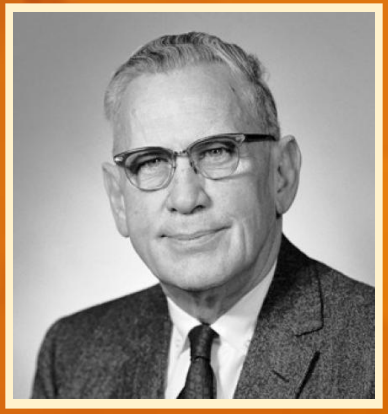
Bette Nesmith Graham

(23 March 1924 – 12 May 1980) was an American typist, commercial artist, and the inventor of the **correction fluid liquid paper** (not to be confused with competitor White-Out).

It was difficult to erase mistakes made by early electric typewriters, which caused problems. To make extra money, she used her talent painting holiday windows at the bank. She realized as she said, "with lettering, an artist never corrects by erasing, but always paints over the error. So I decided to use what artists use. I put some tempera. water-based paint in a bottle and took my watercolor brush to the office. I used to correct my mistakes."

Graham secretly used her white correction paint for five years, making some improvements with help from her son's chemistry teacher at Thomas Jefferson High School in Dallas. Some bosses admonished her for using it, but coworkers frequently sought her "paint out". She eventually began marketing her typewriter correction fluid as "Mistake Out" in 1956. The name was later changed to Liquid Paper when she began her own company.

She sold Liquid Paper to the Gillette Corporation for USD $47.5 million in 1979. At the time, her company employed 200 people and made 25 million bottles of Liquid Paper per year.

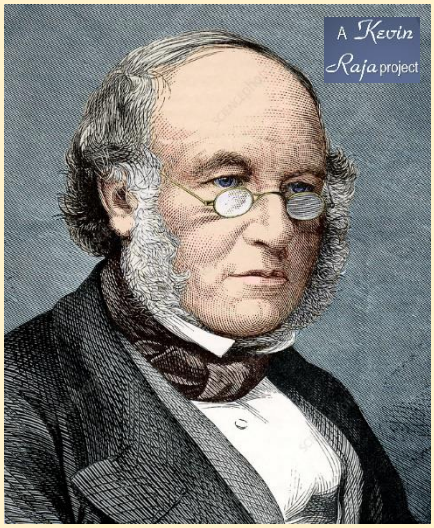


Richard Gurley Drew

(22 June 1899 – 14 December 1980) was an American inventor who worked for Johnson and Johnson, Permacel Co., and 3M in St. Paul, Minnesota, where he invented **masking tape** and **cellophane tape**.

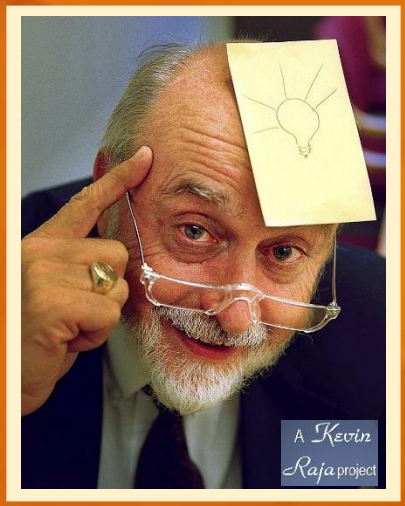
When Drew joined 3M in St. Paul, Minnesota in 1921, it was a modest manufacturer of sandpaper. While testing their new Wetordry sandpaper at auto shops, Drew was intrigued to learn that the two-tone auto paintjobs so popular in the Roaring Twenties were difficult to manage at the border between the two colours. In response, after two years of work in 3M's labs, Drew invented the first masking tape (1925), a two-inch-wide tan paper strip backed with a light, pressure-sensitive adhesive.

Households & Stationaries



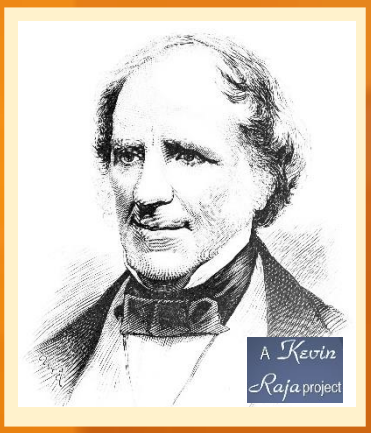
Sir **Rowland Hill**, (3 December 1795 – 27 August 1879) was an English teacher, inventor and social reformer. He campaigned for a comprehensive reform of the postal system, based on the concept of Uniform Penny Post and his solution of pre-payment, facilitating the safe, speedy and cheap transfer of letters. Hill later served as a government postal official, and he is usually credited with originating the basic concepts of the modern postal service, including the invention of the **postage stamp**. Proposing an adhesive stamp to indicate pre-payment of postage – with the first being the Penny Black – in 1840, the first year of Penny Post, the number of letters sent in the UK more than doubled. Within 10 years, it had doubled again. Within three years postage stamps were introduced in Switzerland and Brazil, a little later in the US, and by 1860, they were in 90 countries. In May 1840 the world's first adhesive postage stamps were distributed.

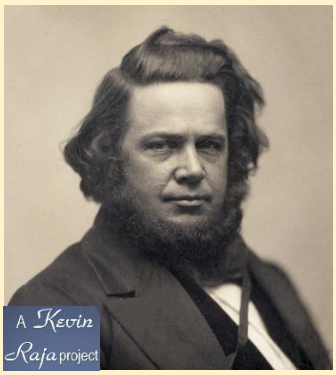
Arthur Fry (born 19 August 1931) is a retired American inventor and scientist. He is credited as the co-creator of the **Post-it Note**, an item of office stationery manufactured by 3M. As of 2006, Post-it products are sold in more than 100 countries. It took a few years for the concept to come to fruition, due to both technical problems with production and management's doubts about the product's saleability. Post-it Notes were released to the national market in 1980. In 1981, 3M named Post-it Notes its Outstanding New Product. Inventor Alan Amron claimed to have disclosed the technology used in the Post-it Note to 3M in 1974. His 1997 suit against 3M was settled and 3M paid Amron. As part of the settlement, Amron undertook not to make future claims against the company except if ever a breach of the settlement agreement should occur. However, in 2016, he launched a further suit against 3M, asserting that 3M were wrongly claiming to be the inventors, and seeking $400 million in damages. At a preliminary hearing, a federal judge ordered the parties to undergo mediation. The suit was subsequently dismissed declaring the previous 1998 settlement agreement to be upheld.



Households & Stationaries

Dr **Neil Arnott** (15 May 1788 - 2 March 1874) was a Scottish physician and inventor. He was the inventor of one of the first forms of the waterbed, the Arnott **waterbed** and was awarded the Rumford Medal in 1852 for the construction of the **smokeless fire grate**, as well as other improvements to ventilation and heating. This inventiveness helped him to design the Arnott waterbed in the 19th century that was devised to prevent bedsores in invalids. The bed was composed of a bath of water with a covering of rubber-impregnated canvas, on which lighter bedding was placed. However, Arnott didn't patent his design, and without a patent, anyone was able to construct a bed in this design. The design was later developed into a water-filled chair intended to prevent seasickness. Other inventions include the **Arnott ventilator** and the **Arnott stove.**



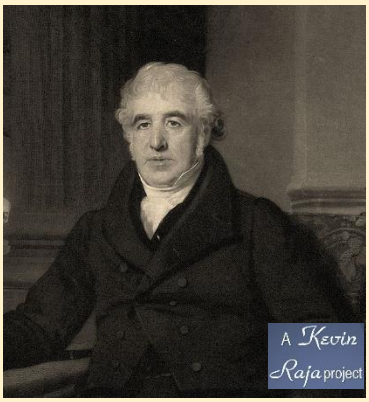


Elias Howe Jr. (9 July 1819 – 3 October 1867) was an American inventor best known for his creation of the modern **lockstitch sewing machine**. Contrary to popular belief, he was not the 1st to conceive of the idea of a sewing machine. Many others had formulated the idea of such a machine before him, one as early as 1790, and some had even patented their designs and produced working machines, in one case at least 80 of them. However, Howe originated significant refinements to the design concepts of his predecessors, and on September 10, 1846, he was awarded the first United States patent (U.S. Patent 4,750) for a sewing machine using a lockstitch design. His machine contained the three essential features common to most modern machines: (a) a needle with the eye at the point, (b) a shuttle operating beneath the cloth to form the lock stitch, and (c) an automatic feed.

Christiaan Huygens (14 April 1629 – 8 July 1695) was a Dutch physicist, mathematician, astronomer and inventor. While as an astronomer he is chiefly known for his studies of the **rings of Saturn** and the discovery of its **moon Titan**. As an inventor, he improved the design of the telescope with the invention of the **Huygenian eyepiece**. His most famous invention, however, was the **pendulum clock** in 1656, which was a breakthrough in timekeeping and became the most accurate timekeeper for almost 300 years.

Charles Macintosh

(29 December 1766 – 25 July 1843) was a Scottish chemist and the inventor of water proof fabric. The Mackintosh **raincoat** (the variant spelling is now standard) is named after him. He was highly successful and invented various new processes. His experiments with naphtha (one of the byproducts of tar) led to his invention of **waterproof fabric**; the essence of his patent was the cementing of two thicknesses of cloth together with natural rubber. The rubber is made soluble by the action of the naphtha. In 1828, he became a partner with James Beaumont Neilson in a firm to exploit the latter's patent for the hot blast blowing of blast furnaces, which saved considerably on their fuel consumption.

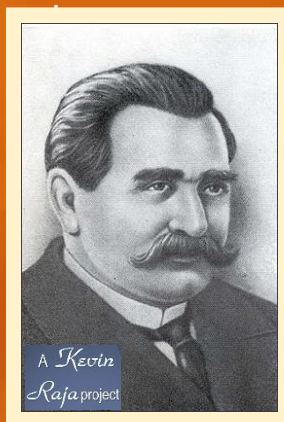


George William Manby

(28 November 1765 – 18 November 1854) was an English author and inventor. He designed an apparatus for saving life from shipwrecks and also the first modern form of **fire extinguisher**. In 1813 Manby invented the "Extincteur", the first portable pressurised **fire extinguisher**. This consisted of a copper vessel of 3 gallons of pearl ash (potassium carbonate) solution contained within compressed air. He also invented a device intended to save people who had fallen through ice.

Alexander Nikolayevich Lodygin

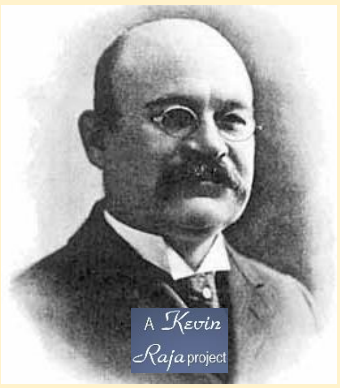
(18 October 1847 – 16 March 1923) was a Russian electrical engineer and inventor, one of inventors of the **incandescent light bulb**. 1872: He applied for a Russian patent for his filament lamp. He also patented this invention in Austria, Britain, France, and Belgium. For a filament, Lodygin used a very thin carbon rod, placed under a bell-glass. In August 1873, he demonstrated prototypes of his electric filament lamp in the physics lecture hall of the Saint Petersburg Institute of Technology. He invented an incandescent light bulb before Thomas Edison, but it was not commercially profitable. The lamp with a tungsten filament is indeed the only design used now, but in 1906 they were too expensive.



Households & Stationaries

Philip H. Diehl

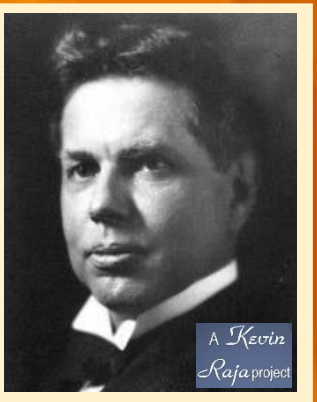
(29 January 1847 – 7 April 1913) was a German-American mechanical engineer and inventor who held several U. S. patents, including **electric incandescent lamps**, **electric motors for sewing machines** and other uses, and **ceiling fans**. Diehl was a contemporary of Thomas Edison and his inventions caused Edison to reduce the price of his incandescent bulb. Working in the basement of his home on Orchard Street in Elizabeth, New Jersey, Diehl invented a lamp that was different from Thomas Edison's incandescent electric lamp, which was patented in 1879. His lamp had no lead-in wires. In 1882 Diehl obtained the first patent on this induction incandescent lamp. The base of the lamp contained a wire coil that coupled with a primary coil in the lamp socket, causing current to flow through the lamp without the need for lead-in wires. Diehl erected the city's first arc light in front of the Corey Building in Elizabeth, which still stands at 109 Broad Street.



The fan was invented in 1882 by Schuyler Skaats Wheeler. A few years later, Philip Diehl mounted a fan blade on a sewing machine motor and attached it to the ceiling, inventing the **ceiling fan**, which he patented in 1887. Later, he added a light fixture to the ceiling fan. Later in 1904, Diehl and Co. added a split-ball joint, allowing it to be redirected; three years later, this developed into the first **oscillating fan**.

Schuyler Skaats Wheeler

(17 May 1860 – 20 April 1923) was an American electrical engineer and manufacturer who invented the **electric fan**, the **electric elevator**, and the **electric fire engine**. He helped develop and implement a code of ethics for electrical engineers. Wheeler invented many electrical devices. He specialized in power saving electrical tools. Wheeler invented the electric fan in 1882 by placing a two-bladed propeller on the shaft of an electric motor. He was awarded the John Scott Medal for this invention in 1904 by the Franklin Institute. He invented the electric elevator. He invented the electric fire engine. Wheeler's Patent for an Electric Fire-engine System was filed on May 23, 1882. It was issued on February 24, 1885 by the United States Patent and Trademark Office.

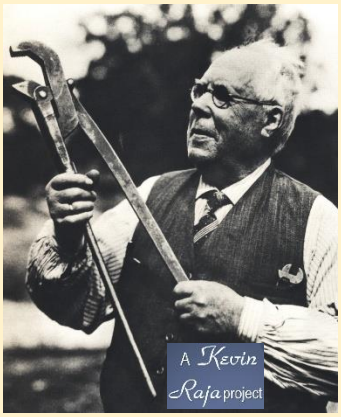


He invented paralleling of dynamos and series multiple motor control.

Households & Stationaries

Johan Petter Johansson

(2 December 1853 – 25 August 1943), was a Swedish inventor and industrialist. He invented a modern **adjustable spanner** (patents in 1891 and 11 May 1892). He obtained over 100 patents in total.



He decided to start his own business and, in 1886, moved to Enköping where he started Enköpings Mekaniska Verkstad (the Mechanical Workshop of Enköping) which quickly became a successful venture. It was during the years in his workshop that he invented the **adjustable spanner** and the **plumber wrench**. In 1890, B.A. Hjorth & Company agreed to distribute his tools worldwide under the "Bahco" trademark. The Bahco tools became greatly successful and the company is still in operation and has manufactured over 100 million wrenches to date.

George de Mestral

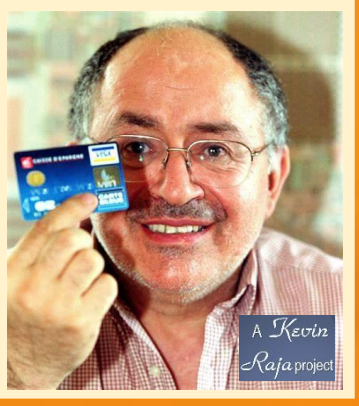
(19 June 1907 – 8 February 1990) was a Swiss electrical engineer who invented the hook and loop fastener which he named **Velcro**. Mechanising the process of the weave of the hooks took eight years, and it took another year to create the loom that trimmed the loops after weaving them. In all, it took ten years to create a mechanised process that worked. He submitted his idea for patent in Switzerland in 1951 and the patent was granted in 1955. De Mestral expected a high demand immediately. Within a few years, he received patents and subsequently opened shop in Germany, Switzerland, the United Kingdom, Sweden, Italy, the Netherlands, Belgium, and Canada. In 1957 he branched out to the textile centre of Manchester, New Hampshire in the United States.

De Mestral gave the name Velcro, a portmanteau of the French words velours ("velvet"), and crochet ("hook"), to his invention as well as his company, which continues to manufacture and market the fastening system.

However, hook and loop's integration into the textile industry took time, partly because of its appearance. In the early 1960s, looked like it had been made from left-over bits of cheap fabric, an unappealing aspect for clothiers. The first notable use for Velcro brand hook and loop came in the aerospace industry, where it helped astronauts manoeuvre in and out of bulky space suits. Eventually, skiers noted the similar advantages of a suit that was easier to get in and out of. Scuba and marine gear followed soon after.

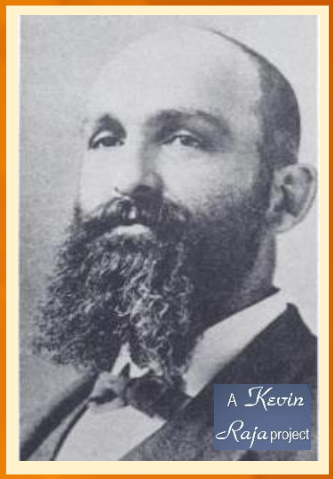
Roland Moreno

(11 June 1945 – 29 April 2012) was a French inventor, engineer, humourist and author who was the inventor of the **memory card.** The smart chip would prove to be Moreno's most important invention. Moreno claimed to have thought of the smart card concept in a dream, telling France Soir in a 2006 interview, "I came up with the idea in my sleep." He code-named his earliest smart card project as TMR. He later flipped the letters to RMT as the name of Innovatron's research and development department. His original idea was for a signet ring, or smart ring, embedded with a micr ochip as shown in his first patent filed on 25 March 1974, when he was just 29 years old. Moreno then simplified the idea, introducing a plastic card with a microchip in 1975. He called it la carte à puce, literally the chip card in English, due to the small chip inserted into the plastic card. Moreno first demonstrated that the smart card could be used in electronic financial transactions in 1976, using a machine which he held together with meccano. It took approximately eight years for Moreno's smart card to gain widespread use in France due to initial start-up costs. However, the smart card proved a huge success in France in the 1980s, where it became widespread long before other countries.



Whitcomb L. Judson

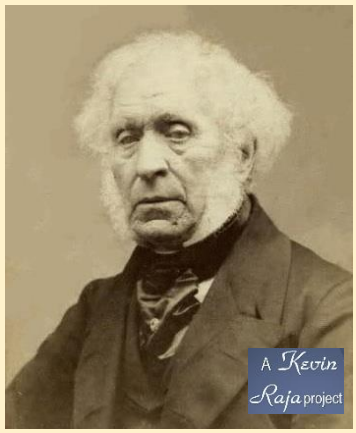
(7 March 1843 – 7 December 1909) was an American machine salesman, mechanical engineer and inventor. Judson is most noted for his invention of the common **zipper.** It was originally called a clasp-locker. The first application was as a fastener for shoes and high boots. The patent said it could be used wherever it was desirable to connect a pair of adjacent flexible parts that could be detached easily. Possible applications noted were for corsets, gloves, and mail bags, and "generally wherever it is desired to detachably connect a pair adjacent flexible parts." In 1913, the zipper was improved by the Swedish-American engineer, Gideon Sundback, and also by Catharina Kuhn-Moos of Europe.

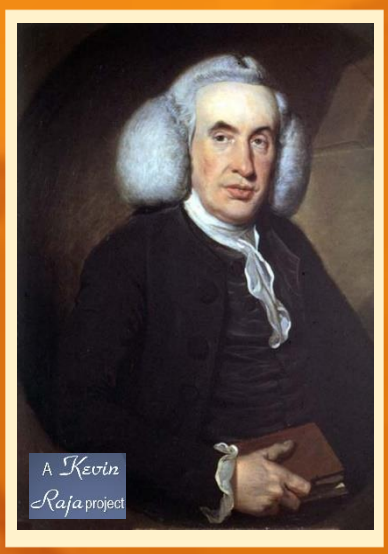


Gideon Sundback

(24 April 1880 – 21 June 1954) was a Swedish-American electrical engineer, who is most commonly associated with his work in the development of the zipper.

Sir **David Brewster** (11 December 1781 – 10 February 1868) was a Scottish scientist, inventor, author, and academic administrator. A pioneer in photography, Brewster invented an improved stereoscope, which he called "**lenticular stereoscope**" and which became the first portable 3D-viewing device. He also invented the **binocular camera**, two types of **polarimeters**, the **polyzonal lens**, the **lighthouse illuminator** and the **kaleidoscope**. These discoveries were promptly recognised. As early as 1807 the degree of LL.D. was conferred upon Brewster by Marischal College, Aberdeen.





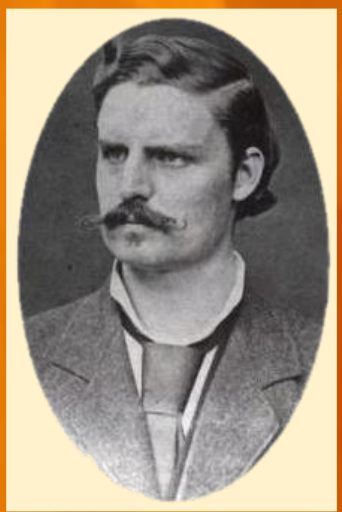
William Cullen

(15 April 1710 – 5 February 1790) was a Scottish physician, chemist and agriculturalist.

The history of **artificial refrigeration** began when William Cullen designed a small refrigerating machine in 1755. Cullen used a pump to create a partial vacuum over a container of diethyl ether, which then boiled, absorbing heat from the surrounding air. The experiment even created a small amount of ice, but had no practical application at that time.

Adolf Gaston Eugen Fick

(22 February 1852 – 11 February 1937) was a German ophthalmologist who invented the **contact lens**. Although Louis J. Girard invented a scleral contact lens in 1887, it was Adolf who in 1888 fabricated the first successful afocal scleral contact lens. He constructed and fitted what was to be considered the first successful model of a contact lens: an afocal scleral contact shell made from heavy brown glass, which he tested first on rabbits, then on himself, and lastly on a small group of volunteers. It was considered the first successful model of a contact lens. His idea was advanced independently by several innovators in the years that followed.



Sir **James Dewar** (20 September 1842 – 27 March 1923) was a Scottish chemist and physicist. He is best known for his invention of the **vacuum flask**, which he used in conjunction with research into the liquefaction of gases. He also studied atomic and molecular spectroscopy, working in these fields for more than 25 years. His name is most widely known in connection with his work on the liquefaction of the so-called permanent gases and his researches at temperatures approaching absolute zero. About 1892, the idea occurred to him of using vacuum-jacketed vessels for the storage of liquid gases – the Dewar flask (otherwise known as a Thermos or vacuum flask) – the invention for which he became most famous. The vacuum flask was so efficient at keeping heat out, it was found possible to preserve the liquids for comparatively long periods, making an examination of their optical properties possible.

John Landis Mason (1832 – 26 February 1902) was an American tinsmith and the patentee of the metal screw-on lid for antique fruit jars that have come to be known as **Mason jars**. Many such jars were printed with the line "Mason's Patent Nov 30th 1858". He also invented the first screw top **salt shaker** in 1858. In 1858, Mason invented a square-shouldered jar with threaded screw-top, matching lid, and rubber ring for an airtight seal. Until the 1830s, long before refrigeration. and hothouse gardens, many fruits and vegetables had been available only seasonally, but the recent development of jars had made canning a practical alternative to drying, pickling, or smoking to preserve food.

Marion O'Brien Donovan (15 October 1917 – 4 November 1998) was an American inventor and entrepreneur. She is best known for developing the first **waterproof disposable diaper**. In 1946, unhappy with the thankless and repetitive task of changing her daughter's cloth diapers, along with the mess the soiled diaper made to the surrounding bedsheets and her daughter's clothing, she came up with a possible solution. With the use of a sewing machine and a shower curtain, she succeeded in developing what is considered the first waterproof diaper cover. In 1985, she invented the product **DentaLoop**, a two-ply dental floss that eliminated the need to wrap the dental floss around one's finger for use.

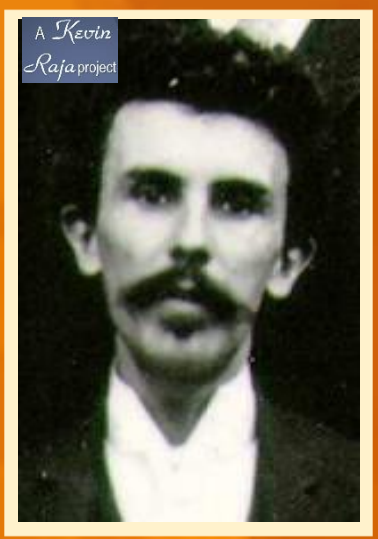
Ḥasan Ibn al-Haytham

(c. 965-c. 1040) was an Arab mathematician, astronomer, and physicist of the Islamic Golden Age. Also sometimes referred to as "the father of modern optics", he made significant contributions to the principles of optics and visual perception in particular. He was the first to explain that vision occurs when light reflects from an object and then passes to one's eyes. He was also the first to demonstrate that vision occurs in the brain, rather than in the eyes. He extensively studied the **camera obscura** phenomenon in the early 11th century. He provided the first competent geometrical and quantitative descriptions of the phenomenon and must have understood the relationship between the focal point and the pinhole.

A convex lens used for forming a magnified image (later known as magnifying glass) was described in the Book of Optics by Ibn al-Haytham in 1021. After the book was translated during the Latin translations of the 12th century, Roger Bacon described the properties of a magnifying glass in 13th-century England. This was followed by the development of eyeglasses in 13th-century Italy.

William Kennedy-Laurie Dickson

(3 August 1860 - 28 September 1935) was a Scottish inventor who devised an early **motion picture camera** under Thomas Edison.

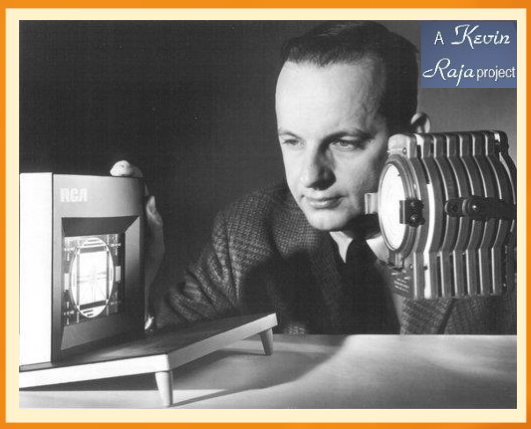


William Dickson and his team, at the Edison lab, simultaneously worked on the development of the **Kinetoscope viewing machine**. The first working prototype, using the 19mm film, was unveiled in May 1891.

William Dickson and his team created the illusion of movement by continuously moving the strip of perforated film, bearing sequential images, whilst illuminating it by brief flashes of light through the slit in a rotating shutter. They also devised the Kinetograph, a motion picture camera with rapid intermittent, or stop-and-go, film movement, to photograph films for in-house experiments and eventually, commercial Kinetoscope presentations, at speeds of up to 46 frames per second.

These former Edison associates helped to design the Eidoloscope projector system and a widescreen camera to film with, which would be used in the first commercial movie screening in world history on 20th May 1895.

George Harry Heilmeier



(22 May 1936 – 21 April 2014) was an American engineer, manager, and a pioneering contributor to liquid crystal displays (**LCD**s). In 1958 Heilmeier joined RCA Laboratories in Princeton, New Jersey, where he worked on parametric amplification, tunnel diode down-converters, millimeter wave generation, ferroelectric thin film devices, organic semiconductors and electro-optic effects in molecular and liquid crystals. In 1964 he discovered several new electro-optic effects in liquid crystals, which led to the first working liquid crystal displays based on what he called the dynamic scattering mode (DSM).

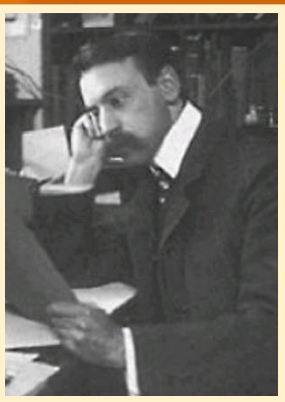
Eugene Dolgoff (born 1950) is the founder, CEO, and CTO of Holobean Technologies INC., which is developing new technologies for diagnosing diseases using advanced medical imaging and for improving treatment. Dolgoff was an early developer of **digital projection** and started experimenting and thinking about **LCD projectors** in 1968. He founded Projectavision Inc., the world's first dedicated digital projection company in 1988 (listed on NASDAQ in 1990). With funding from DARPA, he worked on the development of the U.S. HDTV system. He has published several papers in 3-D imaging, optics, holography, the brain, and LCD video projection, and has more than 65 patents granted worldwide with others pending.

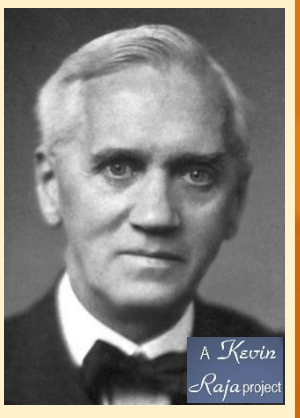
A video projector is an image projector that receives a video signal and projects the corresponding image on a projection screen using a lens system. Video projectors use a very bright ultra high pressure mercury lamp, Xenon arc lamp, LED or solid state blue, RB, RGB or remote fiber optic RGB lasers to provide the illumination required to project the image, and most modern ones can correct any curves, blurriness, and other inconsistencies through manual settings. If a blue laser is used, a phosphor wheel is used to turn blue light into white light, which is also the case with white LEDs. (White LEDs do not use lasers.)

Felix Hoffmann (21 January 1868 – 8 February 1946) was a German chemist notable for re-synthesizing diamorphine (heroin)

(independently from C.R. Alder Wright who synthesized it 23 years earlier), which was popularized under the Bayer trade name of "heroin". He is also credited with synthesizing aspirin, though whether he did this under his own initiative or under the instruction of Arthur Eichengrün is contested. Hoffmann first claimed to be the "inventor" of **aspirin**. In 1949, ex-Bayer employee Arthur Eichengrün published a paper in which he claimed to have planned and directed Hoffman's synthesis of aspirin along with the synthesis of several related compounds. Eichengrün deserved credit for the invention of aspirin. Bayer denied this in a press release, asserting that the invention of aspirin was due to Hoffmann.

Arthur Eichengrun (13 August 1867 – 23 December 1949) was a German Jewish chemist, materials scientist, and inventor. He is known for developing the highly successful anti-gonorrhea drug **Protargol**. Eichengrün claimed to have directed the initial synthesis of aspirin in 1897, but his claim has been disputed. For many years Bayer credited Felix Hoffmann, Eichengrün's junior, with the invention of aspirin. However, the first attribution of the discovery to Hoffmann appears in 1934.





Sir **Alexander Fleming** (6 August 1881 – 11 March 1955) was a Scottish physician and microbiologist. His best-known discoveries are the enzyme lysozyme in 1923 and the world's first broadly effective antibiotic substance benzylpenicillin (**Penicillin G**) from the mould Penicillium rubens in 1928. During World War I, Fleming witnessed the death of many soldiers from sepsis resulting from infected wounds. Antiseptics, which were used at the time to treat infected wounds, often worsened the injuries. He grew the mould in a pure culture and found that the culture broth contained the antibacterial a substance. After some months of calling it "mould juice" or "the inhibitor", he named the substance it released penicillin on 7 March 1929. They started mass production after the bombing of Pearl Harbour. By D-Day in 1944, enough penicillin had been produced to treat all the wounded in the Allied forces.

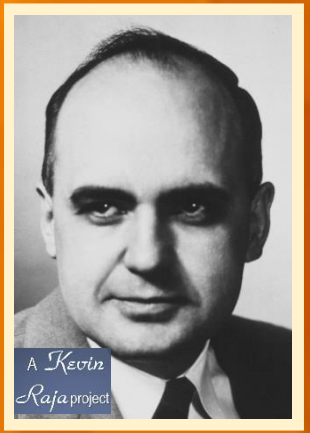
Medical Inventions

René-Théophile-Hyacinthe Laennec (17 February 1781 – 13 August 1826) was a French physician and musician.

His skill of carving his own wooden flutes led him to invent the **stethoscope** in 1816, while working at the Hôpital Necker (Necker–Enfants Malades Hospital in Paris, France). He pioneered its usage in diagnosing various chest conditions. He had discovered that the new stethoscope was superior to the normally used method of placing the ear over the chest. A stethoscope also avoided the embarrassment of placing the ear against the chest of a woman. His skill as a flautist may also have inspired him. He built his first instrument as a 25 cm by 2.5 cm hollow wooden cylinder, which he later refined to comprise three detachable parts. The refined design featured a funnel-shaped cavity to augment the sound, separable from the body of the stethoscope.

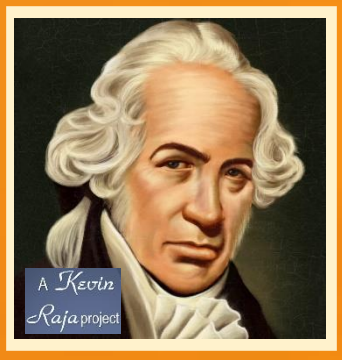
Sir **Alec John Jeffreys** (born 9 January 1950) is a British geneticist, who developed techniques for **genetic fingerprinting** and **DNA profiling** which are now used worldwide in forensic science to assist police detective work and to resolve paternity and immigration disputes.

Jeffreys's DNA method was first put to use in 1985 when he was asked to help in a disputed immigration case to confirm the identity of a British boy whose family was originally from Ghana. DNA Fingerprinting was first used in a police forensic test to identify the killer of two teenagers, Lynda Mann and Dawn Ashworth, who had been raped and murdered in Narborough, Leicestershire, in 1983 and 1986 respectively. DNA profiling, based on typing individual highly variable minisatellites in the human genome, was also developed by Alec Jeffreys and his team in 1985.



Maurice Ralph Hilleman (30 August 1919 – 11 April 2005) was an American microbiologist who specialized in vaccinology and developed over 40 **vaccines**, an unparalleled record of productivity. Of the 14 vaccines routinely recommended in current vaccine schedules, he developed eight: those for measles, mumps, hepatitis A, hepatitis B, chickenpox, meningitis, pneumonia and Haemophilus influenzae bacteria.

Daniel Gabriel Fahrenheit (24 May 1686 - 16 September 1736) was a physicist, inventor and scientific instrument maker. A pioneer of exact thermometry, he helped lay the foundations for the era of precision thermometry by inventing the **mercury-in-glass thermometer** (first practical, accurate thermometer) and **Fahrenheit scale** (first standardized temperature scale to be widely used). He determined his scale by reference to three fixed points of temperature. The lowest temperature was achieved by preparing a frigorific mixture of ice, water and salt and waiting for the eutectic system to reach equilibrium temperature. The thermometer then **was** placed into the mixture and the liquid in the thermometer allowed to descend to its lowest point. The thermometer's reading there was taken as 0 °F. The second reference point was selected as the reading of the thermometer when it was placed in still water when ice was just forming on the surface. This was assigned as 30 °F. The third calibration point, taken as 90 °F, was selected as the thermometer's reading when the instrument was placed under the arm or in the mouth.



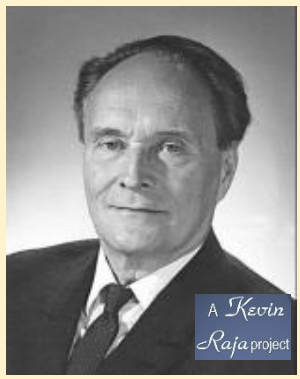
Fahrenheit came up with the idea that Mercury boils around 300 degrees on this temperature scale. The Fahrenheit scale was the primary temperature standard for climatic, industrial and medical purposes.

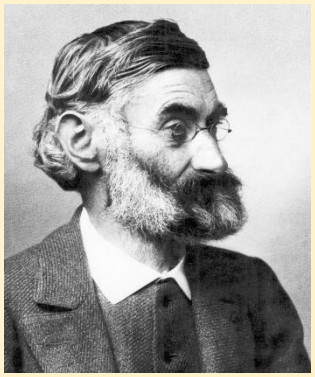
Ian Hector Frazer (born 6 January 1953) is a Scottish-born Australian immunologist. Jian Zhou and he developed and patented the basic technology behind the HPV **vaccine against cervical cancer** at the University of Queensland. The vaccine, now marketed as **Gardasil** and **Cervarix**, was the second cancer preventing vaccine, and the first vaccine designed to prevent a cancer. The vaccine completely protects unexposed women against four HPV strains responsible for 70% of cervical cancers, which kill about 250,000 women annually.

Jian Zhou (1957 – March 1999) was a Chinese virologist and cancer researcher, who with fellow researcher Ian Frazer, invented **Gardasil** and **Cervarix**, the vaccines for stimulating human immunological resistance to the cervical cancer-inducing human papilloma virus. The two considered the problem of developing a vaccine for HPV – a virus that cannot be cultured without living tissue. Frazer and Zhou filed a provisional patent in June 1991 and began work on developing the vaccine within UQ.

Medical Inventions

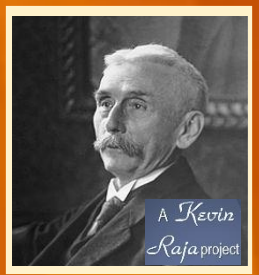
Georgii Frantsevich Gause (27 December 1910 – 2 May 1986), was a Soviet biologist and evolutionist, who proposed the competitive exclusion principle, fundamental to the science of ecology. Classic of ecology, he would devote most of his later life to the research of **antibiotics.** In the 1930s Gause conducted a series of studies, dedicated to the protoplasm asymmetry. These works raised interest among biogeochemists. From 1939 Gause began studies of antibiotics. He noticed an inhibition on the growth of *Staphylococcus aureus* when the two were in mixed culture. The inhibition of S. aureus was caused by a metabolite produced by B. brevis. Gause isolated this product and named it **Gramicidin S**.





Ernst Karl Abbe (23 January 1840 – 14 January 1905) was a German physicist, optical scientist, entrepreneur, and social reformer. Together with Otto Schott and Carl Zeiss, he developed numerous **optical instruments**. He was also a co-owner of Carl Zeiss AG, a German manufacturer of scientific microscopes, astronomical telescopes, planetariums, and other advanced optical systems. In 1886 he invented the **apochromatic lens**, a microscope lens which eliminates both the primary and secondary color distortion. By 1870, Abbe invented the **Abbe condenser**, used for microscope illumination. In 1871, he designed the first **refractometer**. He developed the laws of image of non-luminous objects by 1872.

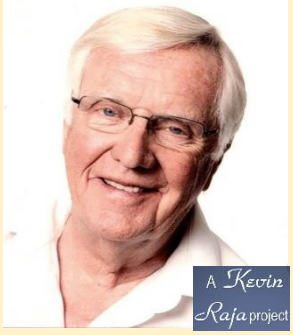
Carl Zeiss (11 September 1816 – 3 December 1888) was a German scientific instrument maker, optician and businessman. He gathered a group of gifted practical and theoretical opticians and glass makers to reshape most aspects of **optical instrument** production. His collaboration with Ernst Abbe revolutionized optical theory and practical design of microscopes. The firm of Carl Zeiss grew to one of the largest and most respected optical firms in the world.



Friedrich Otto Schott (17 December 1851 – 27 August 1935) was a German chemist, glass technologist and the inventor of **borosilicate glass**. In 1884, with Dr Abbe and Carl Zeiss, he founded Schott & Associates Glass Technology Laboratory in Jena.

Medical Inventions

Lasse Leif Hessel (1940 - 25 April 2019) also known as "the family doctor", is a Danish inventor, author and MD noted for such inventions as the **Femidom** and the **Femi-X pill**, and an internationally acknowledged expert on nutrition and dietary fibre.



Hessel's best-known invention is probably the Femidom, also called the female condom. He developed it after hearing about the lack of options available for women trying to avoid HIV/AIDS. It launched in Europe in 1990 and was approved by the FDA for sale in the United States in 1993. Today, its production is sponsored by World Health Organization and the United Nations.

Another invention, the Femi-X pill, is a sort of Viagra for women suffering from sexual dysfunction. It was developed in cooperation with King's College and launched worldwide in 2004. Based on a mixture of herbal ingredients, the Femi-X pill allegedly enhances the female libido by stimulating the blood flow and natural brain activity.

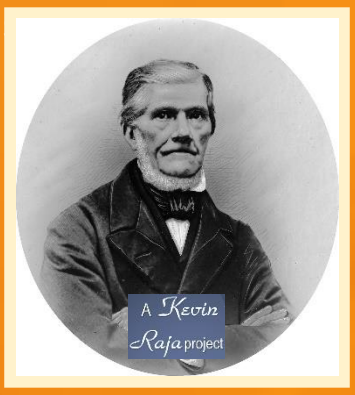
Other systems invented by Hessel include the **Aqua Wall** (1978), an indoor waterfall designed to improve the environmental condition; a remover of insect poison; a remover of pimples; **Cellastic** (1986), a protective material based on human cell structure; the **Bio Tap**, a titanium ring system for secure attachment of stoma bags; the **DiaTest** saliva collection kit; and the **DiaQuick**, a diagnostic system for early detection of breast cancer.

Charles Goodyear (29 December 1800 – 1 July 1860) was an American self-taught chemist and manufacturing engineer who developed vulcanized rubber, for which he received patent number 3633 from the United States Patent Office on June 15, 1844. Goodyear is credited with inventing the chemical process to create and manufacture pliable, waterproof, moldable rubber. The rubber vulcanization process was invented by him in 1839 and patented in 1844. The first rubber condom was produced in 1855 and by the late 1850s several major rubber companies were mass-producing, among other items, **rubber condoms**.

Condoms have been made from a variety of materials; prior to the 19th century, chemically treated linen and animal tissue are the best documented varieties. Rubber condoms gained popularity in the mid-19th century, and in the early 20th century major advances were made in manufacturing techniques. Prior to the introduction of the combined oral contraceptive pill, condoms were the most popular birth control method in the Western world.

Coenraad Johannes van Houten

(15 March 1801 – 27 May 1887) was a Dutch chemist and chocolate maker known for the treatment of cocoa mass with alkaline salts to remove the bitter taste and make cocoa solid more water-soluble; the resulting product is still called "Dutch process chocolate". He is also credited with introducing a method for pressing the fat (**cocoa butter**) from roasted cocoa beans, though this was in fact his father, Casparus van Houten's invention. The introduction of cocoa powder not only made creating chocolate drinks much easier, but also made it possible to combine the powder with sugar and then remix it with cocoa butter to create a solid, already closely resembles today's eating chocolate. Coenraad Van Houten introduced a further improvement by treating the powder with alkaline salts (potassium or sodium carbonates) so that the powder would mix more easily with water. Today, this process is known as "Dutching". The final product, Dutch chocolate, has a dark color and a mild taste.



In 1838 the patent expired, enabling others to produce cocoa powder and build on Van Houten's success, experimenting to make new chocolate products. In 1847 English chocolate maker J. S. Fry & Sons produced arguably the first chocolate bar. Later developments were in Switzerland, where Daniel Peter introduced milk chocolate in 1875 and Rodolphe Lindt made chocolate more blendable by the process of conching in 1879.

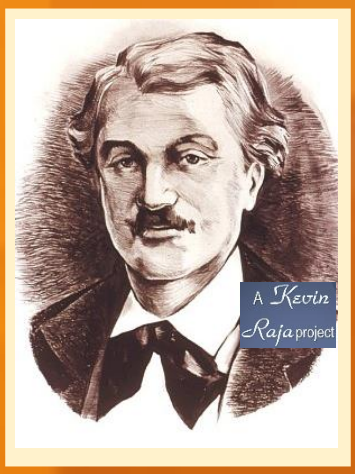
J. S. Fry & Sons, Ltd. better known as Fry's, was a British chocolate company owned by Joseph Storrs Fry and his family. Beginning in Bristol in the 18th century, the business went through several changes of name and ownership, becoming J. S. Fry & Sons in 1822. In 1847, Fry's produced the first **solid chocolate bar**. The company also created the first filled chocolate sweet, Cream Sticks, in 1853. Fry is most famous for Fry's Chocolate Cream, the first mass-produced chocolate bar which was launched in 1866, and Fry's Turkish Delight, launched in 1914.

Daniel Peter (9 March 1836 – 4 November 1919) was a Swiss chocolatier. A neighbour of Henri Nestlé in Vevey, he was one of the first chocolatiers to make **milk chocolate**, in 1875 or 1876, by adding powdered milk to the chocolate

Food & Processes

Hippolyte Mège-Mouriès

(24 October 1817 – 31 May 1880) was a French chemist and inventor who is famous.

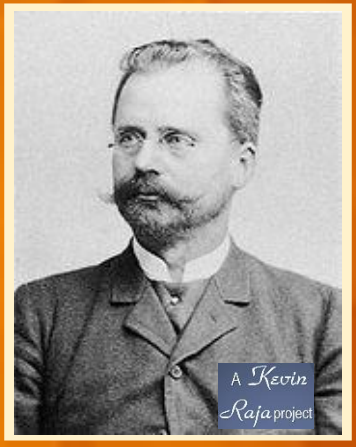


for his invention of **margarine.** By 1852, Mège-Mouriès was studying the chemistry of foods. He added calcium phosphate and protein to chocolate in an attempt to make it healthier. By 1855, Mège-Mouriès was studying bread. In addition to examining the coloration of bread, he developed a way of making bread that allowed bakers to produce 14% more bread given a fixed amount of ingredients.

In the 1860s Mège-Mouriès focused on fat processing. France was experiencing a butter shortage, and Napolean III offered a prize for producing a butter substitute. Mège-Mouriès experimented with what was believed to be a new fatty acid discovered by Michel Eugene Chevreul, acide margarique or margaric acid. Mège-Mouriès's invention, originally known as oleomargarine, was created by mixing processed beef tallow with skimmed milk.

Modern margarine is made mainly of refined vegetable oil and water, whereas butter is made from the butterfat of milk. Butter is a dairy product made from the fat and protein components of milk or cream. It is a semi-solid emulsion at room temperature, consisting of approximately 80% butterfat. Until the 19th century, the vast majority of butter was made by hand, on farms. In the late 1870s, the centrifugal cream separator was introduced, marketed most successfully by Swedish engineer Carl Gustaf Patrik de Laval. This dramatically sped up the butter-making process by eliminating the slow step of letting cream naturally rise to the top of milk.

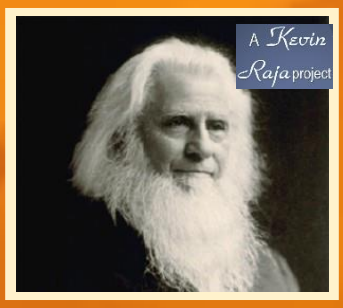
Karl Gustaf Patrik de Laval



(9 May 1845 – 2 February 1913) was a Swedish engineer and inventor who made important contributions to the design of **steam turbines** and **dairy machinery**. De Laval also made important contributions to the dairy industry, including the first **centrifugal milk-cream separator** and early milking machines, the first of which he patented in 1894. It was not until after his death, however, that the company he founded marketed the first commercially practical milking machine, in 1918. In 1882 he introduced his concept of an impulse steam turbine.

Food & Processes

Marcellus Gilmore Edson (7 February 1849 – 6 March 1940) was a Canadian chemist and pharmacist. In 1884, he patented a way to make peanut paste, an early version of **peanut butter**. Edson developed the idea of peanut paste as a delicious and nutritious foodstuff for people who could hardly chew solid food, a common state in those days. In 1884, Edson was awarded United States Patent No. 306727 for the invention. His cooled product had "a consistency like that of butter, lard, or ointment", according to his patent application. He included the mixing of sugar into the paste to harden its consistency. The patent describes a process of milling roasted peanuts until the peanuts reached "a fluid or semi-fluid state". Peanut butter is a food paste or spread made from ground, dry-roasted peanuts. It often contains additional ingredients that modify the taste or texture, such as salt, sweeteners, or emulsifiers.



Thomas Bramwell Welch (31 December 1825 – 29 December 1903) was a British–American Methodist minister and dentist. In 1869, he pioneered the use of **pasteurization** as a means of preventing the fermentation of grape juice. He persuaded local churches to adopt this non-alcoholic wine substitute.

Ilya Ilyich Mechnikov (15 May 1845 – 15 July 1916) was a Russian Imperial zoologist of Moldavian-Jewish origin best known for his pioneering research in immunology. In particular, he is credited with the discovery of **phagocytes** (macrophages) in 1882. This discovery turned out to be the major defence mechanism in innate immunity. He is also credited by some sources with coining the

He is also credited by some sources with coining the term gerontology in 1903, for the emerging study of aging and longevity. Elie Metchnikoff first suggested the possibility of colonizing the gut with beneficial bacteria in the early 20th century. **Probiotics** have received renewed attention in the 21st century from product manufacturers, research studies, and consumers. Their history can be traced to the first use of cheese and fermented products. The original modern hypothesis of the positive role played by certain bacteria was first introduced by Russian scientist and Nobel laureate Élie Metchnikoff, who in 1907 suggested that it would be possible to modify the gut microbiota and to replace harmful microbes with useful microbes.

Food & Processes

Momofuku Ando

(5 March 1910 – 5 January 2007) was a Taiwanese-Japanese inventor and businessman who founded Nissin Food Products Co., Ltd. He is known as the inventor of **instant noodles** and the creator of the brands Top Ramen and Cup Noodles.

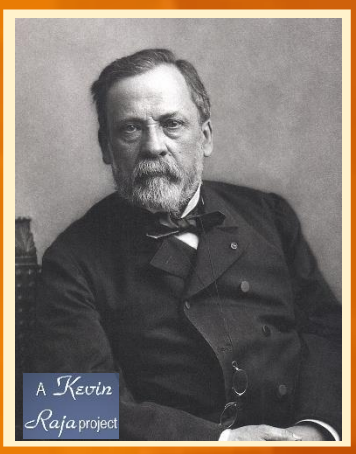
On August 25, 1958, at the age of 48, and after months of trial and error experimentation to perfect his flash-frying method, Ando marketed the first package of precooked instant noodles. The original chicken flavor is called Chikin Ramen. Ando's invention of Cup Noodles in 1971, at the age of 61, helped spark the popularity of instant noodles overseas.

Nicolas Appert

(17 November 1749 – 1 June 1841) was the French inventor of **airtight food preservation**. Appert, known as the "father of canning", was a confectioner. Appert described his invention as a way "of conserving all kinds of food substances in containers“. In 1795, he began experimenting with ways to preserve foodstuffs, succeeding with soups, vegetables, juices, dairy products, jellies, jams, and syrups. He placed the food in glass jars, sealed them with cork and sealing wax and placed them in boiling water. ‘La Maison Appert’ (The House of Appert), in the town of Massy, near Paris, became the first food bottling factory in the world, years before Louis Pasteur proved that heat killed bacteria.

Louis Pasteur

(27 December 1822 – 28 September 1895) was a French biologist, microbiologist and chemist renowned for his discoveries of the principles of **vaccination**, **microbial fermentation** and **pasteurization**. He is remembered for his remarkable breakthroughs in the causes and prevention of diseases, and his discoveries have saved many lives ever since. He reduced mortality from puerperal fever and created the first vaccines for rabies and anthrax.

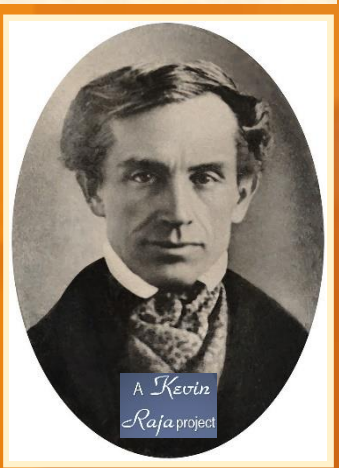


Earl Silas Tupper

(28 July 1907 – 5 October 1983) was an American businessman and inventor, best known as the inventor of **Tupperware**, an airtight plastic container for storing food. Tupper founded the Tupperware Plastics Company in 1938, and in 1948 the company introduced Tupper Plastics to hardware and department stores.

Samuel Finley Breese Morse

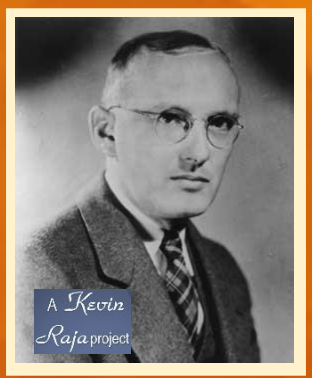
(27 April 1791 – 2 April 1872) was an American inventor and painter. After having established his reputation as a portrait painter, in his middle age Morse contributed to the invention of a **single-wire telegraph** system based on European telegraphs. He was a co-developer of **Morse code** and helped to develop the commercial use of telegraphy.



While returning by ship from Europe in 1832, Morse encountered Charles Thomas Jackson of Boston, a man who was well schooled in electromagnetism. Witnessing various experiments with Jackson's electromagnet, Morse developed the concept of a single-wire telegraph. In time the Morse code, which he developed, would become the primary language of telegraphy in the world. It is still the standard for rhythmic transmission of data. The Morse telegraphic apparatus was officially adopted as the standard for European telegraphy in 1851.

James Gregory

(November 1638 – October 1675) was a Scottish mathematician and astronomer. He described an early practical design for the reflecting telescope – the **Gregorian telescope** – and made advances in trigonometry, discovering infinite series representations for several trigonometric functions. In his 1663 Optica Promota, James Gregory described his reflecting telescope which has come to be known by his name, the Gregorian telescope. Gregory pointed out that a reflecting telescope with a parabolic mirror would correct spherical aberration as well as the chromatic aberration seen in refracting telescopes.



Karl Guthe Jansky

(22 October 1905 – 14 February 1950) was an American physicist and radio engineer who in August 1931 first discovered **radio waves** emanating from the Milky Way. He is considered one of the founding figures of **radio astronomy**. After recording signals from all directions for several months, the brightest point moved away from the position of the Sun. He also determined that the signal repeated on a cycle of 23 hours and 56 minutes, the period of the Earth's rotation relative to the stars, instead of relative to the sun. By comparing his observations with optical astronomical maps, he concluded that the radiation was coming from the Milky Way and was strongest in the direction of the center of the galaxy.

Mikhail Vasilyevich Lomonosov (19 November 1711 – 15 April 1765) was a Russian polymath, scientist and writer, who made important contributions to literature, education, and science. Among his discoveries were the **atmosphere of Venus** and the law of conservation of **mass in chemical reactions**. He was the first to discover and appreciate the atmosphere of Venus during his observation of the transit of Venus of 1761 in a small observatory near his house in St Petersburg.

In 1762, he presented an improved design of a reflecting telescope to the Russian Academy of Sciences forum. His telescope had its primary mirror adjusted at an angle of four degrees to the telescope's axis. This made the image focus at the side of the telescope tube, where the observer could view the image with an eyepiece without blocking the image.

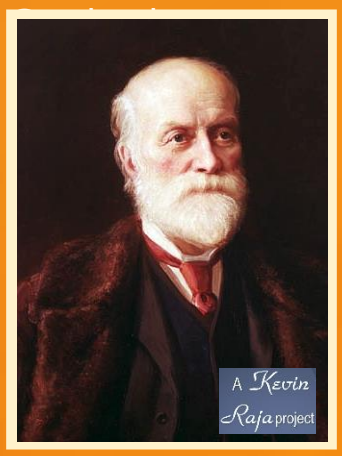
In 1759, with his collaborator, academician Joseph Adam Braun, Lomonosov was the first person to record the freezing of mercury and to carry out initial experiments with it. He got close to the theory of continental drift, theoretically predicted the existence of Antarctica (he argued that icebergs of the South Ocean could be formed only on a dry land covered with ice), and invented sea tools which made writing and calculating directions and distances easier. In 1764, he organized an expedition to find the Northeast Passage between the Atlantic and Pacific oceans by sailing along the northern coast of Siberia.

The idea of coaxial rotors (coax rotors are a pair of helicopter rotors mounted one above the other on concentric shafts, with the same axis of rotation, but turning in opposite directions (contra-rotating)) originates with Mikhail Lomonosov. He had developed a small helicopter model with coaxial rotors in July 1754 and demonstrated it to the Russian Academy of Sciences.

In 1859, the British Patent Office awarded the first helicopter patent to Henry Bright for his coaxial design.

Vladimir Grigoryevich Fyodorov (3 May 1874 - 19 September 1966) was a Russian and Soviet scientist, weapons designer, professor, lieutenant general of a corps of military engineers, founder of the Soviet school of automatic small arms, and a Hero of Labour. He designed a number of automatic rifles: one chambered in 7.62 mm (1912), another in 6.5 mm for a cartridge of his own design (1913), and one of the first prototype **assault rifles** in the world.

Sir **Sandford Fleming** (7 January 1827 – 22 July 1915) was a Scottish Canadian engineer and inventor. Born and raised in



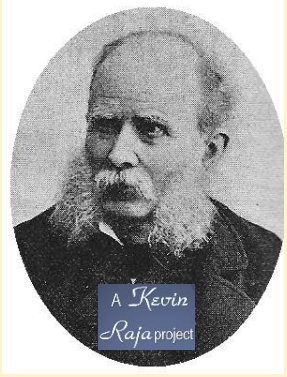
Scotland, he emigrated to colonial Canada at the age of 18. He promoted worldwide standard time zones, a **prime meridian**, and use of the 24-hour clock as key elements to communicating the accurate time, all of which influenced the creation of Coordinated **Universal Time**. He designed Canada's first postage stamp, left a huge body of surveying and map making. After missing a train while traveling in Ireland in 1876 because a printed schedule listed p.m. instead of a.m., he proposed a single 24-hour clock for the entire world, with the 24 hour divisions, arbitrarily linked to the Greenwich meridian. That conference accepted a different version of Universal Time but refused to accept his zones, stating that they were a local issue outside its purview. Nevertheless, by 1929, all major countries in the world had accepted time zones.

Cornelis Jacobszoon Drebbel

(1572 – 7 November 1633) was a Dutch engineer and inventor. He was the builder of the first **navigable submarine** in 1620 and an innovator who contributed to the development of measurement and control systems, optics and chemistry. He worked on producing torpedoes, naval mines, detonators with that used glass Batavian tears, and worked on fulminating gold (aurum fulminans) as an explosive. He also built the **first navigable submarine** in 1620 while working for the English Royal Navy.

Narcís Monturiol i Estarriol

(28 September 1819 – 6 September 1885) was a Spanish artist and engineer. He was the inventor of the first air-independent and combustion-**engine-driven submarine**. In 1858 Monturiol presented his project in a scientific thesis, titled The Ictineo or fish-ship. The first dive of his first submarine, Ictineo I, took place in September 1859 in the harbour of Barcelona. Ictineo I was 7 m long with a beam of 2.5 m and draft of 3.5 m. Her intended use was

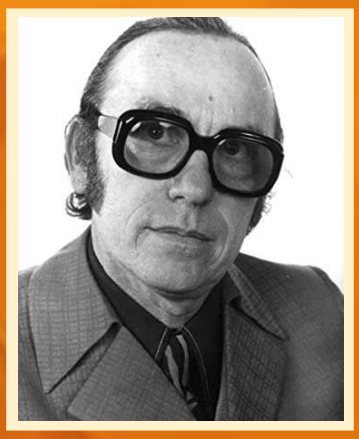


to ease the harvest of coral. An improved version of Ictineo I, Ictineo II was launched on 2 October 1864. Ictineo II made her maiden voyage under human power on 20 May 1865, submerging to a depth of 30 m. On 22 October 1867, Ictineo II made her first surface journey under steam power, averaging 3.5 kn (6.5 km/h) with a top speed of 4.5 kn (8.3 km/h).

Hobby & Pastimes

Ruth Marianna Handler

(4 November 1916 – 27 April 2002) was an American businesswoman and inventor. She served as the president of the toy manufacturer Mattel Inc., In 1959 she invented the **Barbie doll**, which sold over a billion copies worldwide. She was the founder and president of the world's largest toy company, which at its peak had 18,000 employees and annual sales of over $300 million. Ruth Handler claimed her daughter Barbara, who was becoming a pre-teen, played with paper dolls by pretending they were adults. Ruth Handler saw the German Bild Lilli doll (which was not a children's toy, but rather an adult gag gift) in a Swiss shop and brought it home. Once home, she reworked the design of the doll and named her Barbie after the Handlers' daughter, Barbara. Barbie debuted at the New York toy fair on March 9, 1959.



Mordechai Meirovitz

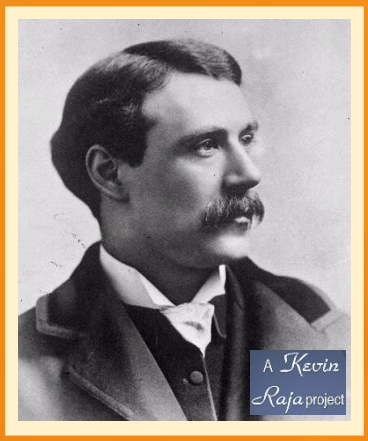
(born 1930 in Romania) was an Israeli telecommunications expert. Meirovitz invented the code-breaking board game **Master Mind**. After being rejected by leading games companies, he sparked the interest of a Leicester-based company, Invicta Plastics, which restyled and renamed the game. Released in 1971, the game sold over 50 million sets in 80 countries, making it the most successful new game of the 1970s.

Walter Fredrick "Fred" Morrison

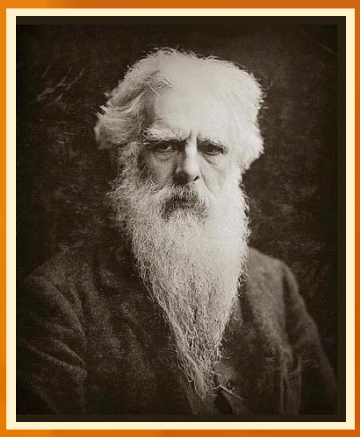
(23 January 1920 - 9 February 2010) was an American inventor and entrepreneur, who invented the **Frisbee** (flying disk). In 1946, Morrison sketched out a design (Whirlo-Way) for the world's first flying disc. In 1948 an investor, Warren Franscioni, paid for molding the design in plastic. They named it the Flyin-Saucer. After disappointing sales, Fred and Warren parted ways in early 1950. In 1954, Fred bought more of the Saucers from the original molders to sell at local fairs, but soon found he could produce his own disc more cheaply. In 1955, he and Lu designed the Pluto Platter, the archetype of all modern flying discs. On January 23, 1957, they sold the rights for the Pluto Platter to the Wham-O toy company. Initially Wham-O continued to market the toy solely as the "Pluto Platter", but by June 1957 they also began using the name Frisbee after learning that college students in the Northeast were calling the Pluto Platter by that name.

Hobby & Pastimes

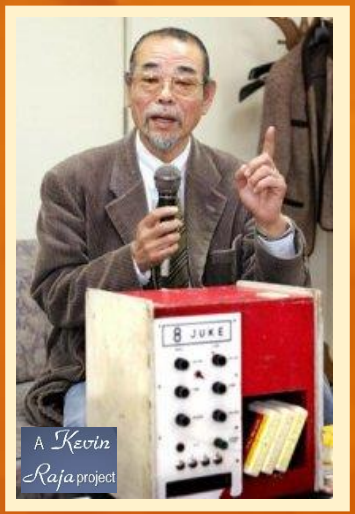
William Friese Greene (7 September 1855 – 5 May 1921) was a prolific English inventor and professional photographer.



He is principally known as a pioneer in the field of **motion pictures**, creating a series of cameras in the period 1888–1891 with which he shot moving pictures in London. He went on to patent an early **two-colour filming** process in 1905. His inventions in the field of printing – including **photo-typesetting** and a method of printing without ink – brought him wealth, as did his chain of photographic studios. On 21 June 1889, Friese-Greene was issued patent no. 10131 for his camera. It was apparently capable of taking up to ten photographs per second using paper and celluloid film. Friese-Greene's later exploits were in the field of colour in motion pictures.



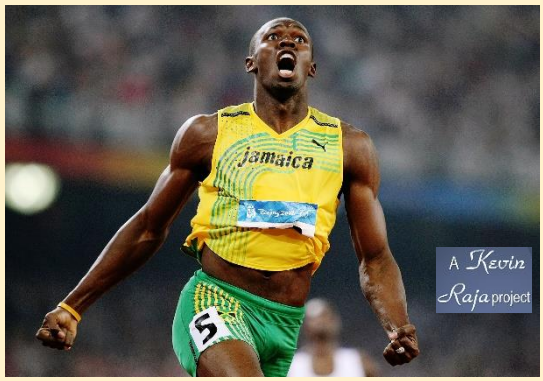
Eadweard Muybridge (9 April 1830 – 8 May 1904) in Kingston upon Thames, was an English-American photographer important for his pioneering work in photographic studies of motion, and early work in **motion-picture projection**. Today, Muybridge is known for his pioneering work on **animal locomotion** in 1877 and 1878, which used multiple cameras to capture motion in stop-motion photographs, and his **zoopraxiscope**, a device for projecting motion pictures that pre-dated the flexible perforated film strip used in cinematography.

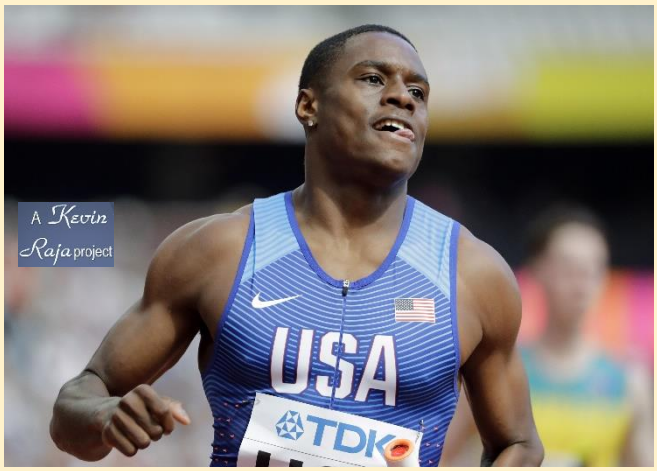


Daisuke Inoue (born May 10, 1940) is a Japanese businessman best known as the inventor of a **karaoke machine**. Inoue, a musician in his youth employed in backing businesspeople who wanted to sing in bars, invented the machine as a means of allowing them to sing without live back-up. Thinking that the idea might have widespread appeal, he began in 1971 renting to bars in Kobe eleven machines outfitted with tapes and amplifiers which he had assembled along with some friends. They proved popular, and a trend was born. Inoue did not patent his invention and so did not directly profit from the invention that started a booming industry. A Filipino, Roberto del Rosario filed a patent for a karaoke machine system, the Sing Along System, which del Rosario developed in 1975.

Fastest Men in the World

Usain St Leo Bolt, is a Jamaican former sprinter. He is a world record holder in the 100 metres, 200 metres and 4 × 100 metres relay. Owing to his achievements and dominance in sprint competition, he is widely considered to be the **greatest sprinter** of all time. An eight-time Olympic gold medallist, Bolt is the only sprinter to win Olympic 100 m and 200 m titles at three consecutive Olympics (2008, 2012 and 2016). In addition he won two 4 × 100 relay gold medals. He gained worldwide fame for his double sprint victory in world record times at the 2008 Beijing Olympics, which made him the first person to hold both records since fully automatic time became mandatory. Bolt improved upon his second 100 m world record of 9.69 with **9.58** seconds in 2009 – the biggest improvement since the start of electronic timing. He has twice broken the 200 metres world record, setting 19.30 in 2008 and 19.19 in 2009. He has helped Jamaica to three 4 × 100 metres relay world records, with the current record being 36.84 seconds set in 2012. Bolt's most successful event is the 200 m, with three Olympic and four World titles.





Christian Coleman

is an American professional track and field **sprinter** who competes in the 100-meter dash and 200-meter dash. He is the current world champion in the 100 meters. He was a double medallist at the World Championships in Athletics in 2017, winning silver medals in both the 100 m and 4 × 100-meter relay. He holds personal records of **9.76** s for the 100 m and 19.85 for the 200 m, and is also the world indoor record holder for the 60-meter dash with 6.34 seconds.

In February, Coleman decided to compete at the U.S. Indoor Championships in Albuquerque on the 14th and 15th with the intent of breaking his world record in the 60 m. he took the U.S. title in a world-leading 6.37 seconds, equal his second fastest time in world history and 0.12 s ahead of second place Marvin Bracy.

Fastest Women in the World

Shelly-Ann Fraser-Pryce, is a Jamaican track and field sprinter. Born and raised in Kingston, Jamaica, she ascended to prominence in 2008 when at 21 years old, the relatively unknown athlete became the first Caribbean woman to win 100 m gold at the Olympics. In 2012, she became the third woman in history to successfully defend an Olympic 100 m title. Fraser-Pryce took a break from athletics in 2017 to have her first child. At the 2019 World Championships, at the age of 32, she became the oldest woman and second mother ever to win 100 m gold at a global championship. Fraser-Pryce is the only sprinter in history to be crowned world champion over 100 m four times (2009, 2013, 2015 and 2019). Since 2008, she has won four of the five World Championship 100 m titles she has contested, as well as two of the last three Olympic 100 m titles. The only woman to achieve a "sprint triple" at a single World Championship (gold in the 100 m, 200 m and 4 × 100 m in 2013), she is also the only female sprinter to reign as world champion at 60 m, 100 m, 200 m and 4 × 100 m relay at the same time.

Florence Delorez Griffith Joyner, also known as Flo-Jo, was an American track and field athlete. She is considered the fastest woman of all time based on the fact that the world records she set in 1988 for both the 100 m (10.49 sec) and 200 m (21.34 sec) still stand. During the late 1980s she became a popular figure in international track and field because of her record-setting performances and flashy personal style.

In February 1989, she abruptly retired. After her retirement from athletics, she remained a pop culture figure through endorsement deals, acting, and designing. She died in her sleep as the result of an epileptic seizure in 1998 at the age of 38.

Her success at the 1988 Olympics led to new opportunities. In the weeks following the Olympics, Griffith-Joyner earned millions of dollars from endorsement deals, primarily in Japan. Griffith-Joyner also signed a deal with toy maker LJN Toys for a Barbie-like doll in her likeness.

Record-holding Swimmers in the World

Michael Fred Phelps (born 30 June 1985) is an American former competitive swimmer and the most successful and **most decorated Olympian** of all time, with a total of 28 medals. Phelps also holds the all-time records for Olympic gold medals (23), Olympic gold medals in individual events (13), and Olympic medals in individual events (16). When he won eight gold medals at the 2008 Beijing Games, Phelps broke fellow American swimmer Mark Spitz's 1972 record of seven first-place finishes at any single Olympic Games. At the 2004 Summer Olympics in Athens, Phelps had already tied the record of eight medals of any color at a single Games by winning six gold and two bronze medals. At the 2012 Summer Olympics in London, Phelps won four gold and two silver medals, and at the 2016 Summer Olympics in Rio de Janeiro, he won five gold medals and one silver. This made him the most successful athlete of the Games for the fourth Olympics in a row.

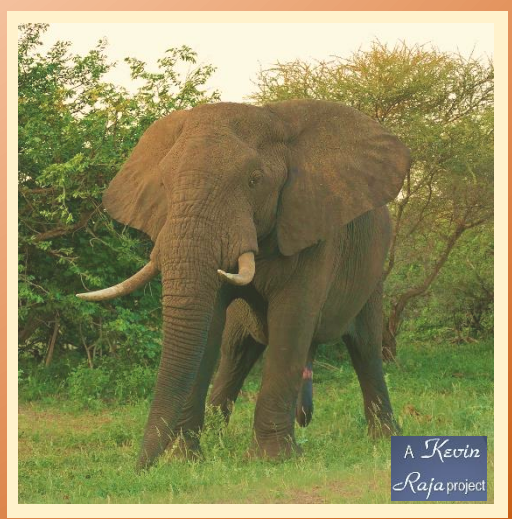
César Augusto Cielo Filho (born 10 January 1987) is a Brazilian competitive swimmer who specializes in sprint events. He is the most successful Brazilian swimmer in history, having obtained three Olympic medals, winning six individual World Championship gold medals and breaking two world records. Cielo is the current world record holder in the 100-metre and 50-metre freestyle (long course). His gold medal at the 2008 Summer Olympics, in the 50-metre freestyle competition, is Brazil's only Olympic gold in swimming to date. In 2008, he broke the NCAA record in the 50-yard (46 m) freestyle (18.47 seconds) and in the 100-yard (91 m) freestyle (40.92 seconds). Cielo became the **fastest swimmer** in the world in the two distances.

Sarah Fredrika Sjöström (born 17 August 1993) is a Swedish competitive swimmer specialized in the sprint freestyle and butterfly events. She is the current world record holder in the 50-meter freestyle (long course), the 100-meter freestyle (long course), the 200-meter freestyle (short course), the 50-meter butterfly (long course), and the 100-meter **butterfly** (long course and short course). She is the first Swedish woman to win an Olympic gold medal in swimming.

Largest & Heaviest Mammal in the World

The **Blue Whale** is a marine mammal belonging to the baleen whale suborder Mysticeti. Reaching a maximum confirmed length of 29.9 m and weight of 173,000 kg, it is the **largest and heaviest mammal** known to have ever existed. It is also the **loudest mammal**, with vocalizations that reach 188 decibels. The average length of sexually mature female blue whales is 22.1 m for Eastern North Pacific blue whales, 24.1 m for central and western North Pacific blue whales, 28.1 m for North Atlantic blue whales, 25.4 - 26.6 m for Antarctic blue whales, 23.5 m for Chilean blue whales, and 21.3 m for pygmy blue whales. Antarctic males averaged 101,605 kg and females 117,934 kg. Pygmies average 78,925 kg.

Largest & Heaviest Land Mammal in the World



African Bush Elephant is the **largest and heaviest terrestrial animal**. Cows are 2.2–2.6 m tall at the shoulder and weigh 2,160–3,232 kg, while bulls are 3.2–4 m tall and weigh 4,700–6,048 kg. Its back is concave-shaped, while the back of the African forest elephant is nearly straight. The largest recorded individual stood 3.96 metres at the shoulder, and is estimated to have weighed 10,400 kg. The tallest recorded individual stood 4.21 m at the shoulder and weighed 8,000 kg.

Elephants are mammals of the family Elephantidae and the largest existing land animals. 3 species are currently recognised: the African bush elephant, the African forest elephant, and the Asian elephant.

African elephants are listed as vulnerable and Asian elephants as endangered by the International Union for Conservation of Nature (IUCN). One of the biggest threats to elephant populations is the ivory trade, as the animals are poached for their ivory tusks. Other threats to wild elephants include habitat destruction and conflicts with local people

Smallest Mammal in the World

Bumblebee Bat also known as the Kitti's hog-nosed bat, is a near-threatened species of bat and the only extant member of the family Craseonycteridae. It occurs in western Thailand and southeast Myanmar, where it occupies limestone caves along rivers.

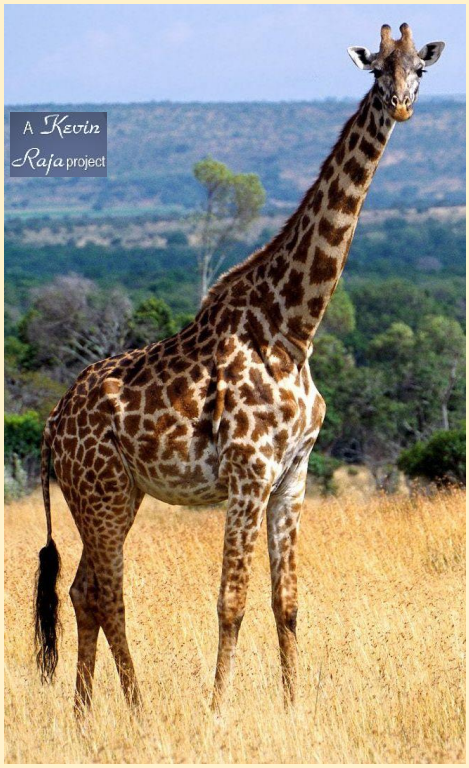
Kitti's hog-nosed bat is about 29 to 33 mm (1.1 to 1.3 in) in length and 2 g (0.071 oz) in mass, hence the common name of "bumblebee bat". It is the smallest species of bat and may be the world's **smallest mammal**, depending on how size is defined. The main competitors for the title are small shrews; in particular, the Etruscan shrew may be lighter at 1.2 to 2.7 g (0.042 to 0.095 oz) but is longer, measuring 36 to 53 mm (1.4 to 2.1 in) from its head to the base of the tail.

Tallest Mammal in the World

The **Giraffe** is an African artiodactyl mammal, the **tallest living terrestrial animal** and the **largest ruminant**.

The giraffe's main distinguishing characteristics are its extremely long neck and legs, its horn-like ossicones, and its distinctive coat patterns.

Fully grown giraffes stand 4.3–5.7 m (14.1–18.7 ft) tall, with males taller than females. The tallest recorded male was 5.88 m (19.3 ft) and the tallest recorded female was 5.17 m (17.0 ft) tall. The average weight is 1,192 kg (2,628 lb) for an adult male and 828 kg (1,825 lb) for an adult female with maximum weights of 1,930 kg (4,250 lb) and 1,180 kg (2,600 lb) having been recorded for males and females, respectively. Despite its long neck and legs, the giraffe's body is relatively short.



Domestic Cats in the World

The **Maine Coon** is the **largest domesticated cat breed**. It has a distinctive physical appearance and valuable hunting skills. It is one of the oldest natural breeds in North America, specifically native to the state of Maine.

On average, males weigh from 5.9 to 8.2 kg, with females weighing from 3.6 to 5.4 kg. The height of adults can vary between 10 and 25 and 41 cm and they can reach a length of up to 120 cm, including the tail, which can reach a length of 36 cm and is long, tapering, and heavily furred, almost resembling a raccoon's tail. Large Maine Coons can overlap in length with Eurasian lynxes, although with a much lighter build and lower height.

Barivel from Italy, a Maine Coon is the **longest domestic cat**, making him the current holder of the Guinness World Records, verified on 22 May 2018. When measured from head to tail tip on 22 May 2018, Barivel came in at 120 cm. He took over from “Ludo, measuring 118.33 cm.

Neither Barivel nor Ludo quite measure up to the **longest domestic cat ever**, though. **Mymains Stewart Gilligan**, another Maine Coon, was verified to be 123 cm on 28 Aug 2010. “Stewie” also previously held the record for **longest tail** on a domestic cat, at 41.5 cm. He sadly died in 2013.

The world's **tallest cat**, according to Guinness, was **Arcturus Alderbaran Powers**, who measured 48.4 cm, certified in 2017.

The **smallest cat** on record was a male blue point Himalayan-Persian, named **Tinker Toy** that measured only 7 cm tall and 19 cm long when full grown (aged 2.5 years). The unusually tiny feline was owned by Katrina and Scott Forbes (USA) of Taylorville, Illinois, USA.

Tinker Toy was born on 25 December 1990 (the runt of six kittens) and died in November 1997 at the age of six.

The **shortest cat** is **Lilieput,** 9 year-old female munchkin cat or sausage cat (newer breed of cat which has very short legs, caused by a genetic mutation), who measured 13.34 cm from the floor to the shoulders on 19 July 2013, and is owned by Christel Young (USA) of Napa, California, USA.

Smallest & Largest Wild Cats in the World

The **Rusty-Spotted Cat** is one of the cat family's smallest members, of which historical records are known only from India and Sri Lanka.

It is the **smallest wild cat** in Asia and rivals the black-footed cat as the world's smallest wild cat. It is 35 to 48 cm in length, with a 15 to 30 cm tail, and weighs only 0.9 to 1.6 kg.

The **Black-Footed Cat**, is the **smallest African cat** and endemic to Africa. Males reach a head-to-body length of 36.7 to 43.3 cm. Females are smaller with length of 36.9 cm and tails 12.6 to 17.0 cm long

The **Siberian Tiger** is a tigris population in the Russian Far East and Northeast China and possibly North Korea, the **largest wild cat** in the world. The Siberian tiger was also called "Amur tiger", "Manchurian tiger", "Korean tiger", and "Ussurian tiger", depending on the region where individuals were observed. The tiger is reddish-rusty, or rusty-yellow in colour, with narrow black transverse stripes. The body length is not less than 150 cm, condylobasal length of skull 25 cm, zygomatic width 18 cm, and length of upper carnassial tooth over 2.6 cm long. It has an extended supple body standing on rather short legs with a fairly long tail.

Largest Living Cat in the World

Hercules, the largest liger, recognised by the Guinness Book of World Records as the **largest living cat** on Earth, weighing 418.2 kg. When he was only 3 years old, he already weighed 408.25 kg. Hercules eats around 13.6 kg of meat, about the weight as a two year-old child, every day, washed down with several litres of water.

The **liger**, the **biggest cat** in the world, is a hybrid offspring of a male lion and a female tiger. The liger has parents in the same genus but of different species. The liger is distinct from the similar hybrid called the tigon.

Domestic Dogs in the World

The **Great Dane** is a German breed of domestic dog known for its large size. The record holder for the tallest dog ever is a Great Dane called Zeus (died September 2014; aged 5), who measured 1.118 m from paw to shoulder. The tallest living dog is another Dane named Freddy, measuring 1.035 m.

The **English Mastiff** is a breed of large dog. The greatest weight ever recorded for a dog, 155.6 kg, was that of an English Mastiff from England named Aicama Zorba of La Susa.

Freddy is a Great Dane from Essex, UK, known as the world's **tallest living dog** by the Guinness Book of World Records, taking the title from the previous record holder, Zeus, the tallest dog ever. Freddy was measured on 13 September 2016, standing at 103.5 cmto the withers, or over 226 cm when standing on his hind legs.

Zeus (November 22, 2008 – September 3, 2014) was a Great Dane from Otsego, Michigan, United States, famous for being named the "world's **tallest dog**" by the 2012 and 2013 Guinness Book of World Records. Standing on his hind legs Zeus stretched 2.26 m and when measured in October 2011, Zeus was 1.118 m from his foot to his withers.

Aicama Zorba of La-Susa or Zorba, born on 26 September 1981, was a male Old English Mastiff who was recognized by Guinness World Records as the **heaviest** (156.6 kg in 1989) and **longest dog** (254.4 cm from nose to tail tip) in the world. It is 94 cm tall in 1989 and died in 1992.

Morgan from Canada, is the **tallest female dog** ever, as documented by GWR. She stood 98.15 cm to the withers as verified on 9 January 2013

The **Chihuahua** is the **smallest breed** of dog. The height ranges between 15 and 23 cm; however, some dogs grow as tall as 30 to 38 cm. The British standard also states that a weight of 1.8–2.7 kg is preferred.

Miracle Milly (born December 2011), a female chihuahua from Puerto Rico, is the world's **smallest living dog** by height, according to the Guinness Book of World Records. On 21 February 2013 her height was measured, placing her at 9.65 cm.

Smallest & Shortest Wild Dog in the World

The **Fennec Fox** or desert fox, is a small crepuscular fox native to the Sahara Desert, the Sinai Peninsula, Arava desert and the Arabian desert. The fennec fox weighs about 0.7 - 1.6 kg, with a body length of between 24 - 41 cm; it is around 20.3 cm tall. A fennec fox has a bushy tail that measures 17 - 30 cm. It is the **smallest species of canid** in the world. The tail has a black tip and is 18 - 31 cm long, while the ears can be between 10 - 15 cm long. The coat is often a cream colour and fluffy, which deflects heat during the day and keeps the fox warm at night.[3] The fennec's characteristic ears are the largest among all foxes relative to body size

The fennec fox is the national animal of Algeria. It also serves as the nickname for the Algeria national football team

Largest Wild Dog in the World

Grey Wolf or gray wolf, is a large canine native to Eurasia and North America. It is the **largest extant** member of Canidae, males averaging 40 kg and females 37 kg. On average, wolves measure 105 - 160 cm in length and 80 - 85 cm at shoulder height.

The wolf is the largest member of the Canidae family, and is further distinguished from coyotes and jackals by a broader snout, shorter ears, a shorter torso and a longer tail. It is slender and powerfully built with a large, deeply descending rib cage, a sloping back, and a heavily muscled neck. The wolf's legs are moderately longer than those of other **canids**, which enables the animal to move swiftly, and to overcome the deep snow that covers most of its geographical range in winter. The ears are relatively small and triangular. The wolf's head is large and heavy, with a wide forehead, strong jaws and a long, blunt muzzle.

Largest Bird in the World

The **North African Ostrich**, red necked ostrich, or Barbary ostrich is the nominate subspecies of the common ostrich from West and North Africa. It is the largest subspecies, making it the **largest living bird**, at 2.74 m (9.0 ft) in height and up to 154 kgs (340 lb) in weight. The neck is pinkish-red, the plumage of males is black and white, and the plumage of females is grey.

It was widespread from western to northeastern Africa. It used to range from Ethiopia and Sudan in the east throughout the Sahel to Senegal and Mauritania in the west, and north to Egypt and southern Morocco. It has now disappeared from large parts of this range and it only remains in 6 of the 18 countries where it originally occurred. North African ostriches can be found in open fields and the savannahs, especially in the Sahel of Africa. In Israel, the introduced North African ostriches live in grasslands, semi-deserts and plains

Smallest Bird in the World

Bee Hummingbird, zunzuncito or Helena hummingbird is a species of hummingbird which is the world's **smallest bird**. It is endemic to Cuba and the Isla de la Juventud, Cuban island.

The bee hummingbird is the smallest living bird. Females weigh 2.6 g (0.092 oz) and are 6.1 cm (2.4 in) long, and are slightly larger than males, with an average weight of 1.95 g (0.069 oz) and length of 5.5 cm (2.2 in). As its name suggests, it is scarcely larger than a bee. Like all hummingbirds, it is a swift, strong flier

The bee hummingbird has been reported to visit 10 plant species, nine of them native to Cuba. They occasionally eat insects and spiders. In a typical day, bee hummingbirds will consume up to half their body weight in food.

Largest Fish in the World

The **Whale Shark** is a slow-moving, filter-feeding carpet shark and the **largest known extant fish** species. The largest confirmed individual had a length of 18.8 m (62 ft) The whale shark holds many records for size in the animal kingdom, most notably being by far the largest living nonmammalian vertebrate.

The whale shark is found in open waters of the tropical oceans and is rarely found in water below 21 °C (70 °F). Modelling suggests a lifespan of about 70 years, and while measurements have proven difficult, estimates from field data suggest they may live as long as 130 years. The name "whale shark" refers to the fish's size, being as large as some species of whales and also to its being a filter feeder like baleen whales.

The whale shark is a filter feeder – one of only three known filter-feeding shark species (along with the basking shark and the megamouth shark). It feeds on plankton including copepods, krill, fish eggs, Christmas Island red crab larvae and small nektonic life, such as small squid or fish. It also feeds on clouds of eggs during mass spawning of fish and corals.

Largest Predatory Fish in the World

The **Great White Shark** also known as the great white, white shark or "white pointer", is a species of large mackerel shark which can be found in the coastal surface waters of all the major oceans.

The great white shark is notable for its size, with larger female individuals growing to 6.1 m (20 ft) in length and 1,905–2,268 kg (4,200–5,000 lb) in weight at maturity. However, most are smaller; males measure 3.4 to 4.0 m (11 to 13 ft), and females measure 4.6 to 4.9 m (15 to 16 ft) on average.

It is arguably the world's **largest known extant macropredatory fish**, and is one of the primary predators of marine mammals.

Smallest Fish in the World

Paedocypris Progenetica is a tiny species of cyprinid fish endemic to the Indonesian islands of Sumatra and Bintan where it is found in peat swamps and blackwater streams. It is one of the **smallest known fish** in the world, together with species such as Schindleria brevipinguis, with females reaching a maximum standard length of 10.3 mm (0.41 in), males 9.8 mm (0.39 in) and the smallest known mature specimen, a female, measuring only 7.9mm (0.31 in). It held the record for the shortest known vertebrate until the frog Paedophryne amauensis was formally described in January 2012, while the parasitic males of the anglerfish Photocorynus spiniceps are but 6.2 millimetres (0.24 in) long.

The smallest sea-dwelling mammal is the rare and little-known marine otter, aka sea cat, native largely to the Pacific coast of South America, although its range may also edge around Cape Horn into the Atlantic waters of southern Argentina. Adults measure between 87 and 115 centimetres in total length and typically weigh no more than 5 kilograms.

Smallest Vertebrate in the World

The **Paedophryne Amauensis** is a species of microhylid frog from Papua New Guinea. At 7.7 mm (0.30 in) in snout–to–vent length, it is considered the world's **smallest known vertebrate**. Attaining an average body size of only 7.7 millimetres (0.30 in), is 0.2 millimetres (0.0079 in) smaller than the previous record-holder as the world's smallest vertebrate, a species of cyprinid fish (Paedocypris progenetica; 7.9 mm [0.3in]) from Indonesia and a species of goby fish (Schindleria brevipinguis; 7.7 mm [0.30 in]) from Australia.

The frog lives on land and its life cycle does not include a tadpole stage. instead, members of this species hatch as 'hoppers': miniatures of the adults. The skeleton is reduced and there are only seven presacral vertebrae present. They are capable of jumping thirty times their body length. The frog is crepuscular and feeds on small invertebrates. Males call for mates with a series of very high-pitched insect-like peeps at a frequency of 8400–9400 Hz.

Smallest Snake in the World

Barbados Threadsnake

is a species of threadsnake. It is the **smallest known snake** species. This member of the Leptotyphlopidae family is found on the Caribbean island of Barbados. It has been reported to be on the islands of Antigua and Barbuda.

The average length of Tetracheilostoma carlae adults is approximately 10 cm, (3.94 inches), with the largest specimen found to date measuring 10.4 cm (4.09 inches).

Largest & Heaviest Snake in the World

The **Green Anaconda** also known as common anaconda, common water boa or sucuri, is a non-venomous boa species found in South America. It is the **heaviest** and one of the **longest known extant snake** species. The term "anaconda" often refers to this species, though the term could also apply to other members of the genus Eunectes.

The green anaconda is the world's heaviest and one of the world's longest snakes, coming to 5.21 m (17.1 ft) long. More typical mature specimens reportedly can range up to 5 m (16.4 ft), with the females, around a mean length of 4.6 m (15.1 ft), being generally much larger in adulthood than the males, which average around 3 m (9.8 ft). Weights are less well studied, though reportedly range from 30 to 70 kg (66 to 154 lb) in a typical adult. It is the largest snake native to the Americas.

Biggest Reptile in the World

The **Saltwater Crocodile** is a crocodilian native to saltwater habitats and brackish wetlands from India's east coast across Southeast Asia and the Sundaic region to northern Australia and Micronesia. It is regarded as dangerous for people who share the same environment. It is also known as the estuarine crocodile, Indo-Pacific crocodile, marine crocodile, sea crocodile or saltie.

The saltwater crocodile is often claimed to be the **largest living** crocodilian (reptile). Males grow to a length of up to 6 m, rarely exceeding 6.1 m or a weight of 1,000–1,075 kg. Females are much smaller and rarely surpass 3 m. Saltwater crocodiles are also the largest extant riparian predators and **heaviest reptiles** the world.

The largest crocodile in captivity ever was a 6.17 m saltwater crocodile captured on 3 September 2011 in Bunawan, Mindanao, Philippines. The crocodile was named Lolong and weighed approximately 1,075 kg. Lolong died on 10 February 2013.

Cassius, an Australian saltwater crocodile, is the largest crocodile in captivity (living) at 5.48 m. The Australian saltwater crocodile is the largest and most fearsome of today's species. Specimens can live for more than 100 years, can grow to 7 m and weigh more than 1,016 kg.

Smallest Reptile in the World

Sphaerodactylus is a genus of geckos from the Americas that are distinguished from other Gekkota by their small size, by their round, rather than vertical, eye pupils, and by each digit terminating in a single, round adhesive pad or scale, from which their name (Sphaero = round, dactylus = finger) is derived. All species in this genus are rather small, but two species, S. ariasae and S. parthenopion, are tiny, and with a snout-vent length of about 1.6 cm – the **smallest reptiles** in the world.

Heaviest Insect in the World

Giant Weta are several species of weta in the genus Deinacrida of the family Anostostomatidae. Giant wētā are endemic to New Zealand and are examples of island gigantism. There are eleven species of giant weta. Large species can be up to 10 cm, not inclusive of legs and antennae, with body mass usually no more than 35 g. One gravid captive female reached a mass of about 70 g, making it one of the **heaviest insects** in the world and heavier than a sparrow. The largest species of giant weta is the Little Barrier Island giant weta also known as the wetapunga. One example reported in 2011 weighed 71 g.

However, Guinness World Records mentioned the goliath beetles, discovered in 1835, as the heaviest insects with weights of 70-100 g.

Largest Insect in the World

The **Titan Beetle** is a neotropical longhorn beetle, the sole species in the genus Titanus, and the largest known beetle. with the largest reliable measured specimen being 16.7 cm in length. It is known from the rain forests of Venezuela, Colombia, Ecuador, Peru, the Guianas, and north-central Brazil.

Longest Insect in the World

The **Phasmatodea** are an order of insects whose members are variously known as stick insects, stick-bugs, walking sticks or bug sticks.

The longest recorded body is a stick insect called Chan's megastick Phobaeticus chani, from the rainforests of the Malaysian state of Sabah, on the island of Borneo. The longest specimen had a body length alone of 35.5 cm; it measured 56.6 cm long with its legs fully stretched out.

Smallest Insect in the World

Fairyflies or fairy wasps, are chalcid wasps found in temperate and tropical regions throughout the world. Fairyflies are very tiny insects, like most chalcid wasps, mostly ranging from 0.5 to 1.0 mm long. They are the world's **smallest insect**, with a body length of only 0.139 mm, and the smallest known flying insect, only 0.15 mm long. They usually have non-metallic black, brown, or yellow bodies.

Smallest Spider in the World

Patu Digua is a very small species of spider. The male holotype and female paratype were collected from Rio Digua, near Queremal, Valle del Cauca in Colombia.

By some accounts it is the **smallest spider** in the world, as males reach a body size of only about 0.37 mm, roughly one fifth the size of the head of a pin. However, there are other spider species of similar size where only the female is known; and male spiders are generally smaller.

Poisonous Spider in the World

The **Sydney funnel-web Spider** is a species of venomous mygalomorph spider native to eastern Australia, usually found within a 100 km radius of Sydney. It is a member of a group of spiders known as Australian funnel-web spiders. Its bite is capable of causing serious illness or death in humans if left untreated. It has a body length ranging from 1 to 5 cm. Both sexes are glossy and darkly coloured, ranging from blue-black, to black to shades of brown or dark-plum coloured. The spider can be found in moist microhabitats, including under logs and foliage.

Largest Spider in the World

The **Goliath Bird-eater** belongs to the tarantula family Theraphosidae. Found in northern South America, it is the **largest spider** in the world by mass-170 g and size-30 cm, but it is second to the giant huntsman spider by leg span. It is also called the Goliath bird-eating spider. The Goliath birdeater is native to the upland rain forest regions of northern South America: Suriname, Guyana, French Guiana , northern Brazil, and southern Venezuela.

Fastest Mammal on Land

The **Cheetah** is a large cat of the subfamily Felinae that occurs in North, Southern and East Africa, and a few localities in Iran. African cheetahs may achieve successful hunts running at a speed of only 64 km/h (40 mph) while hunting due to their exceptional ability to accelerate, but are capable of accelerating up to 112 km/h (70 mph) on short distances of 100 m (330 ft). The cheetah is, therefore, the **fastest land animal**.

Sarah, an 11-year-old cheetah achieved a 100-m run from a standing start in 5.95 seconds. The record was set on a USA Track & Field-certified course established by the Cincinnati Zoo at its Regional Cheetah Breeding Facility (Mast Farm) in Clermont County, Ohio, USA, on 20 June 2012

Fastest Bird in the World

The **Peregrine Falcon**, also known as the peregrine, and historically as the duck hawk in North America, is a widespread bird of prey (raptor) in the family Falconidae. A large, crow-sized falcon, it has a blue grey back, barred white underparts and a black head. The Peregrine is renowned for its speed, reaching over 320 km/h (200 mph) during its characteristic hunting stoop (high speed dive), making it the **fastest bird** in the world, as well as the fastest member of the animal kingdom. According to a National Geographic TV program, the highest measured speed of a falcon is 389 km/h. As is typical for bird-eating raptors, peregrine falcons are sexually dimorphic, with females being considerably larger than males. The peregrine falcon has a body length of 34 to 58 cm (13–23 in) and a wingspan from 74 to 120 cm (29–47 in). Males weigh 330 to 1,000 g (0.73–2.20 lb) and the larger females weigh 700 to 1,500 g (1.5–3.3 lb).

Laziest Mammal in the World

The **Three-toed Sloths** are tree-living mammals from Latin America. The four living species of three-toed sloths are the brown-throated sloth, the maned sloth, the pale-throated sloth, and the pygmy three toed sloth. Sloths are famous for being the slow-coaches of the animal kingdom, indeed, they hold a record for their leisurely pace among mammals. While on the ground, three-toed sloths travel at just 1.8–2.4 m (6–8 ft) per min, they're slightly quicker in the rain forest canopy, where they can reach "blistering" speeds of 4.6 m (15 ft) per min! Even this top rate is still around five times slower than a drifting iceberg.

Generally, **slow-moving**, at an average speed of 0.24 km/h (0.15 mph). Three-toed sloths are about the size of a small dog or a large cat, with the head and body having a combined length around 45 cm (18 in) and a weight of 3.5–4.5 kg (8–10 lb). Unlike the two-toed sloths, they also have short tails of 6–7 cm (2–3 in), and they have three clawed toes on each limb. All sloths have three digits on their hindlimbs; the difference is found in the number of digits on the forelimbs; thus they are sometimes referred to as three-fingered sloths. However, sloths are generally regarded as quadrupeds.

Laziest Freshwater Turtle in the World

Asian Giant Softshell Turtle also known as Cantor's giant softshell turtle and the frog-faced softshell, turtle, is a species of freshwater turtle in the family Trionychidae. The species is native to Southeast Asia. It has been considered to be among the largest extant freshwater turtles. The species is endangered and in the 20th century has disappeared from much of its former range.

Native to the Mekong River in Cambodia, Cantor's giant soft-shelled turtle spends 95% of its life motionless in sand on the river bottom waiting for prey to approach. It comes up to the water surface to breathe air only twice each day. It has a broad head and small eyes close to the tip of its snout.

Oldest Animal on Land in the World

Jonathan is a Seychelles giant tortoise, a subspecies of the Aldabra giant tortoise, and the **oldest known living terrestrial animal** in the world, (hatched c. 1832, 187−188 years old). Jonathan resides on the island of Saint Helena, a British Overseas Territory in the South Atlantic Ocean. This puts him just 1 year away from the title of oldest ever chelonian, currently held by **Tu'i Malila**, a radiated tortoise that reached at least 188 years old.

Longest Lived Mammal in the World

The **Bowhead Whale** is a species of baleen whale belonging to the family Balaenidae and the only living representative of the genus Balaena. The bowhead is the only baleen whale endemic to the Arctic and sub-arctic waters. The species is named after its characteristic massive triangular skull, which is used to break through Arctic ice.

Largest Mouth of all Animals

The bowhead has the **largest mouth** of any animal representing almost one third of the length of the body, the **longest baleen plates** with a maximum length of 4 meters (13.1 feet), and the thickest blubber in any animal is possessed by the bowhead whale.

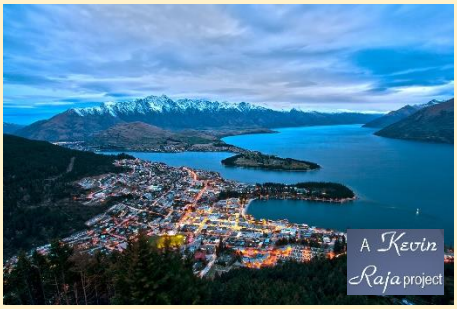
Probably, **the longest-lived mammal**, with the ability to live more than 200 years.

Largest Mouth on a Terrestrial Animal

The **largest mouth** of all land animals belongs to the **hippopotamus** of Africa which can open its jaws to almost 180°. In a fully grown male hippo, this equates to an average gape of 1.2 m (4 ft).

Countries without snakes in the World

New Zealand is a sovereign island country in the southwestern Pacific Ocean. The country has two main landmasses- the North Island, and the South Island and around 600 smaller islands. Volcanism is recorded in New Zealand throughout its whole geological history. Most volcanism in New Zealand, has been caused by the subduction of one tectonic plate under another; this causes melting in the mantle, the layer of the earth below the crust. Volcanism and geological climate has undergone several periods of glaciation, making the islands too cold for cold-blooded land snakes.



Iceland is a Nordic island country in the North Atlantic, and most sparsely populated country in Europe. It is volcanically and geologically active. The interior consists of a plateau characterised by sand and lava fields, mountains, and glaciers. No native or free-living reptiles or amphibians are on the island due to cold climate and volcanism too.

Ireland is an island in the North Atlantic. It is separated from Great Britain to its east by the North Channel, the Irish Sea, and St George's Channel. Ireland is the second-largest island of the British Isles, the third-largest in Europe, and the twentieth-largest on Earth. Climate not favourable as well for snakes.

Places without snakes in the World

Besides the above-mentioned countries, places (not countries but territories) with no snakes are **Antarctica**, **Greenland** and **Hawaii**. Antarctica and Greenland (Denmark) are with extreme cold climate and Hawaii (US) is with volcanic activities that does not support any living conditions for snakes.

Countries with Most Snakes in the World

Brazil is the largest country in South America. Its Amazon River basin includes a vast tropical forest, home to diverse wildlife, a variety of ecological systems, and extensive natural resources spanning numerous protected habitats. Brazil has 375 species of snakes.

Snake Island (Ilha da Queimada Grande), (left) is an island off the coast of Brazil in the Atlantic Ocean. It is the only home of the critically endangered, venomous Bothrops insularis (golden lancehead pit viper), which has a diet of birds. The snakes became trapped on the island when rising sea levels covered up the land that connected it to the mainland. There are so many snakes on one island, by some estimates one snake to every sq. m of the island rendering the island dangerous to public visitation.

India, a South-Asian country is also with **largest number of snakes**. About 280 species of snakes occur in India, out of about 2900 known snake species. India is a habitat for 8.6% of all mammal species, 13.7% of bird species, 7.9% of reptile species, 6% of amphibian species, 12.2% of fish species, and 6.0% of all flowering plant species. The 4 venomous snake species responsible for causing the greatest number of medically significant human snake bite cases in India are called as the Big 4; Indian Cobra, Indian Saw-Scaled Viper, Russel's Viper and Common Krait.

Bhutan is a landlocked country in South Asia and known as 'Country of Snake'. The wildlife of Bhutan is notable for its diversity. Indotyphlops braminus, commonly known as the brahminy blind snake and Indian Rock Python (Python molurus) are some common species.

Australia, is a sovereign country comprising the mainland of the Australian continent, the island of Tasmania, and numerous smaller islands. It is the largest country in Oceania. Australia has the greatest number of reptiles of any country, with 755 species. Australia is home to many dangerous animals including some of the **most venomous snakes** in the world. The amethystine python or scrub python, one of the six largest snakes in the world, as measured either by length or weight, is considered Australia's largest native snake.

7 Wonders of the World

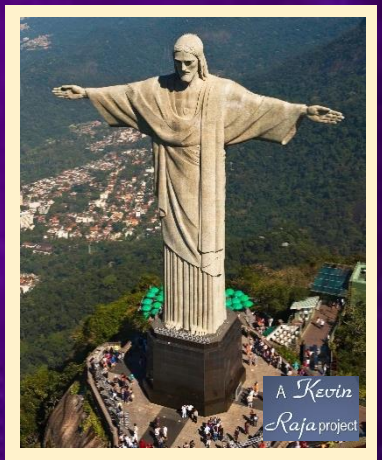
New7Wonders of the World was a campaign started in 2000 to choose Wonders of the World from a selection of 200 existing monuments. The popularity poll was led by Canadian-Swiss Bernard Weber and organized by the New7Wonders Foundation based in Zurich, Switzerland, with winners announced on 7 July 2007 in Lisbon. The foundation ran two subsequent programs: **New7Wonders of Nature**, the subject of voting until 2011, and **New7Wonders Cities**, which ended in 2014.

Winners are Chichen Itza (Mexico), Christ the Redeemer (Brazil), Colosseum (Italy), Great Wall of China (China), Machu Picchu (Peru), Petra (Jordan) and Taj Mahal (India). The Great Pyramid of Giza, largest and oldest of the three pyramids at the Giza Necropolis in Egypt and the only surviving of the original Seven Wonders of the Ancient World, was granted honorary status.

The other 13 finalists are Acropolis of Athens (Greece), Alhambra (Spain), Angkor Wat (Cambodia), Eiffel Tower (France), Hagia Sophia (Turkey), Kiyomizu-dera (Japan), Moai (Chile), Neuschwanstein (Germany), Red Square (Russia), Statue of Liberty (USA), Stonehenge (UK), Sydney Opera House (Australia) and Timbuktu (Mali).

Chichen Itza was a large pre-Columbian city built by the Maya people of the Terminal Classic period. The archaeological site is located in Tinúm Municipality, Yucatán State, Mexico.

Chichen Itza was one of the largest Maya cities, with the relatively densely clustered architecture of the site core covering an area of at least 5 sq. km. Chichen Itza, a UNESCO World Heritage Site, is the second-most visited of Mexico's archaeological sites with over 2.6 million tourists in 2017.



Christ the Redeemer is an Art Deco statue of Jesus Christ in Rio de Janeiro, Brazil, created by French sculptor Paul Landowski. Constructed between 1922 and 1931, the statue is 30 m high, excluding its 8 m pedestal. The arms stretch 28 m wide. It weighs 635 metric tons and is located at the peak of the 700 m Corcovado mountain in the Tijuca Forest National Park overlooking the city of Rio de Janeiro. It is made of reinforced concrete and soapstone.

7 Wonders of the World

The **Colosseum** also known as the Flavian Amphitheatre is an oval amphitheatre in the centre of the city of Rome, Italy.

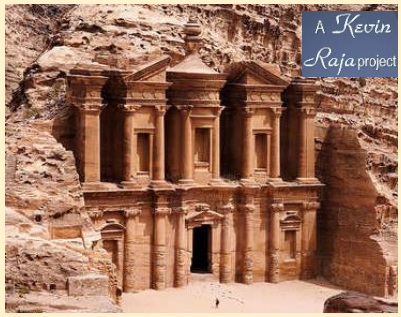
Built of travertine limestone, tuff (volcanic rock), and brick-faced concrete, it was the largest amphitheatre ever built at the time and held 50,000 to 80,000 spectators. Construction began under the emperor Vespasian in AD 72 and was completed in AD 80 under his successor and heir, Titus. Further modifications were made during the reign of Domitian (81–96). These three emperors are known as the Flavian dynasty, and the amphitheatre was named in Latin for its association with their family name. In 2018, it was the most popular tourist attraction in the world, with 7.4 million visitors.

The **Great Wall of China** is the collective name of a series of fortification systems generally built across the historical northern borders of China. Several walls were being built from as early as the 7th century BC by ancient Chinese states; selective stretches were later joined together by Qin Shi Huang (220–206 BC), the first emperor of China. Little of the Qin wall remains. The most well-known sections of the wall were built by the Ming dynasty (1368-1644). A comprehensive archaeological survey has concluded that the walls built by the Ming dynasty measure 8,850 km. This is made up of 6,259 km sections of actual wall, 359 km of trenches and 2,232 km of natural defensive barriers such as hills and rivers. Another survey found that the entire wall with all of its branches measures 21,196 km. Today, the defensive system of the Great Wall is recognized as one of the most impressive architectural feats in history.

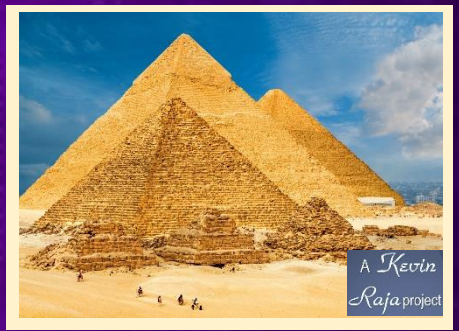
Machu Picchu is a 15th-century Inca citadel, in the Eastern Cordillera of southern Peru, on a 2,430 m mountain ridge, above the Sacred Valley. The Incas built the estate around 1450 but abandoned it a century later at the time of the Spanish conquest. It was declared a Peruvian Historic Sanctuary in 1981 and a UNESCO World Heritage Site in 1983.

7 Wonders of the World

Petra originally known to its inhabitants as Raqmu, is a historical and archaeological city in southern Jordan. Petra lies around Jabal Al-Madbah in a basin surrounded by mountains which form the eastern flank of the Arabah valley that runs from the Dead Sea to the Gulf of Aqaba. The area around Petra has been inhabited from as early as 7000 BC. Famous for its rock-cut architecture and water conduit system, Petra is also called the 'Rose City' because of the colour of the stone from which it is carved. It has been a UNESCO World Heritage Site since 1985. UNESCO has described Petra as "one of the most precious cultural properties of man's cultural heritage.



The **Taj Mahal** is an ivory-white marble mausoleum on the southern bank of the river Yamuna in the Indian city of Agra. It was commissioned in 1632 by the Mughal emperor Shah Jahan (reigned from 1628 to 1658) to house the tomb of his favourite wife, Mumtaz Mahal; it also houses the tomb of Shah Jahan himself. The tomb is the centrepiece of a 17-hectare (42-acre) complex, which includes a mosque and a guest house, and is set in formal gardens bounded on three sides by a crenellated wall. Construction, completed in 1643, but work continued on other phases of the project for another 10 years. It is believed to have been completed in 1653 at a cost estimated 32 million rupees, which in 2020 would be 70 billion rupees. The construction project employed some 20,000 artisans under the guidance of a board of architects led by the court architect, Ustad Ahmad Lahauri. The Taj Mahal was designated as a UNESCO World Heritage Site in 1983.



The **Great Pyramid** of Giza is the oldest and largest of the three pyramids in the Giza pyramid complex bordering present-day Giza in Greater Cairo, Egypt. It is the oldest of the Seven Wonders of the Ancient World, and the only one to remain largely intact (*granted honorary status in New7 Wonders*). It is estimated that the pyramid weighs approximately 6 million tonnes and consists of 2.3 million blocks of limestone and granite, some weighing as much as 80 tonnes.

Y the CONFUSION?

Maldives

MALDIVES
Capital: Malé
Area: 298 sq. km
Population: 379,270
(2020 est)
Density: 1,102.5 / sq. km
Currency: Maldivian rufiyaa
Time Zone: UTC + 5 hours

Mauritius

MAURITIUS
Capital: Port Louis
Area: 2,040 sq. km
Population: 1,265,475
(2019 est)
Density: 618.24 / sq. km
Currency: Mauritian rupee
Time Zone: UTC + 4 hours

Seychelles

SEYCHELLES
Capital: Victoria
Area: 459 sq. km
Population: 97,096
(2018 est)
Density: 205.3 / sq. km
Currency: Seychellois rupee
Time Zone: UTC + 4 hours

A Kevin Raja project

The **Maldives**, is a small island nation in South **Asia**, located in the Arabian Sea of the Indian Ocean. It lies southwest of Sri Lanka and India, about 1,000 km from the Asian continent. The chain of 26 atolls stretches from Ihavandhippolhu Atoll in the north to Addu Atoll in the south to the equator. It is one of the world's most geographically dispersed sovereign states as well as the smallest Asian country by land area and population.

The Maldives consists of 1,192 coral islands grouped in a double chain of 26 atolls, that stretch along a length of 871 km north-south direction, spread over roughly 90,000 sq. km, only 298 sq. km of that is dry land, making this one of the world's most dispersed countries. Its cuisine is mainly coconuts, fish and starches.

Seychelles is an **African** archipelagic island country in the Indian Ocean at the eastern edge of the Somali Sea. It consists of 115 islands. Seychelles is among the world's leading countries to protect lands for threatened species. There are 42 granitic islands known as the Granitic Seychelles.

Fish plays a prominent part in country's cuisine because of its location in the Indian Ocean. The Seychelles's cuisine has been influenced by African, British, French, Spanish, Indian and Chinese cuisines.

Mauritius is an island nation in the Indian Ocean about 2,000 km off the south-east coast of the **African** continent. The country includes the islands of Mauritius, Rodrigues, Agaléga and St. Brandon. Mauritius currently has two UNESCO World Heritage Sites, namely, Aapravasi Ghat and Le Morne Cultural Landscape. Additionally, Black River Gorges National Park is currently in the UNESCO tentative list. The cuisine of Mauritius is a blend of Chinese, European and Indian influences in the history of Mauritius. Dishes from French cuisine have grown very popular in Mauritius. Most of the dishes and practices into the culinary traditions are inspired by former slaves, Indian workers and Chinese migrants arriving during the 19th century.

A Kevin Raja project

Y the CONFUSION?

Democratic Republic of the Congo & Republic of the Congo

REPUBLIC OF THE CONGO
Capital: Brazzaville
Area: 342,000 sq. km
Population: 5,244,359
Density: 12.8 / sq. km
Currency: CFA franc
Time Zone: UTC + 1 hour

DEMOCRATIC REPUPLIC OF THE CONGO
Capital: Kinshasa
Area: 2,345,409 sq. km
Population: 101,780,263
Density: 39.19 / sq. km
Currency: Congolese franc
Time Zone: UTC +1 to +2

The **Republic of the Congo** also known as Congo-Brazzaville, or the Congo Republic, is a country located in the western coast of Central Africa. It is bordered by five countries: Gabon to its west; Cameroon to its northwest and the Central African Republic to its northeast; the Democratic Republic of the Congo to the southeast and the Angolan exclave of Cabinda to its south; and the Atlantic Ocean to its southwest. The national dishes of Republic of Congo is Poulet Moambe (savoury chicken dish) and Poulet Yassa (marinated fish dish).

The **Democratic Republic of the Congo** also known as DR Congo, is a country located in Central Africa. It was formerly called Zaire (1971–1997). It is, by area, the largest country in sub-Saharan Africa, the 2nd largest in all of Africa (after Algeria), and the 11th largest in the world. It is the 4th most populous country in Africa, and the 16th most populous country in the world. The national dish of DR Congo is Poulet a la Moambe.

The cuisines of the both DR Congo and the Republic of the Congo varies widely, representing the food of indigenous people. Cassava, fufu, rice, plantain and potatoes are generally the staple foods eaten with other dishes.

What is the difference between DR Congo and Republic of Congo?

Democratic Republic of the Congo is formerly a Belgian colony and the Republic of the Congo is formerly a French colony – both celebrated independence in 1960. The two countries are separated not only by different colonial roots, but by the Congo River (or Zaire River), the second longest river in Africa, after the Nile River.

Y the CONFUSION?

Cheetah Jaguar Leopard

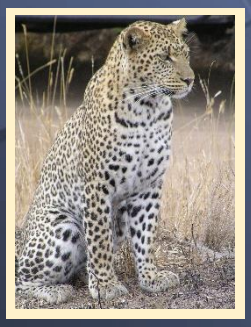
There are confusions by many on the spotted big wild cats. Lets look at them.

The **cheetah** is a large cat of the subfamily Felinae that occurs in North, Southern and East Africa, and a few localities in Iran. It inhabits mostly arid habitats like dry forests, scrub forests, and savannahs. It's closest relatives are the cougar (Puma concolor) and the jaguarundi. These 3 species together form the Puma lineage, one of the eight lineages of Felidae. The Cheetah is a lightly built spotted cat characterised with small rounded head, a short muzzle tear-like facial streaks, a deep chest, **long thin legs** and a **long tail**. These long legs and tail makes it different from jaguar and leopard. Its slender, canine form contrasts sharply with the robust build of the big cats. The coat is covered with numerous round, evenly spaced **solid black spots** on a tawny to creamy white or pale buff background. Each cheetah has a distinct pattern of spots that can be used to uniquely identify individuals. Adults range between 20-60 kg. The cheetah is the **fastest land animal** and **active in the day** unlike leopards which are active at night.

Lynx and Bobcats are also spotted but they are medium-sized wild cats genus Lynx.

The **jaguar** is a large felid species and the only extant member of the genus Panthera native to the Americas. Its present range extends from Southwestern US and Mexico, Central and South America.

The jaguar is a compact and well-muscled animal. It is the **largest cat native** to the Americas and the third largest in the world, after the tiger and the lion. Its coat is generally a tawny yellow, but ranges to reddish-brown. The ventral areas are white. The fur is covered with **rosettes**, just like the leopards, but it has spots inside them. The spots and their shapes vary between individual jaguars: rosettes may include one or several dots. Jaguar is stockier and muscular than leopard. Weights are normally in the range of 56-96 kg. Big males have been recorded to weigh as much as 158 kg. The smallest females weigh about 36 kg. The **tail is the shortest** of any big cat, at 45 -75 cm in length. **Legs** are also **short**, but thick and powerful. Jaguar's tail is generally shorter than the leopard's.



The **leopard** is one of the 5 extant species in the genus Panthera, a member of the Felidae. It occurs in a wide range in sub-Saharan Africa, in small parts of Western and Central Asia, on the Indian subcontinent to Southeast and East Asia. It's skin colour varies between individuals from pale yellowish to dark golden with dark spots grouped in rosettes. Its belly is whitish and its ringed **tail is shorter** than its body. Its pupils are round. Males stand 60–70 cm at the shoulder, while females are 57–64 cm tall. The head-and-body length ranges between 90 and 196 cm with a 66 to 102 cm long tail. Males weigh 37–90 kg, and females 28–60 kg.

Y the CONFUSION?

Panther & Jaguarundi / Puma & Lioness

A **panther** or a **black panther** (right) is the melanistic colour variant of any Panthera, particularly of the leopard in Asia and Africa, and the jaguar in the Americas.

In North Africa, **dark leopards** have been reported in the Atlas Mountains.

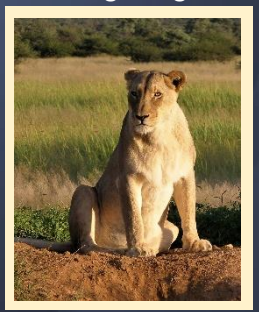
In 2009, a **black jaguar** was recorded for the first time in Costa Rica's Alberto Manuel Brenes Biological Reserve. In jaguars, the melanism allele is dominant. Black jaguars have either black or spotted cubs, but a pair of spotted jaguars can only produce spotted cubs.

A **white panther** (left) is a white specimen of any of several species of larger cat. "Panther" is used in some parts of North America to mean the cougar (Puma concolor), in South America to mean the jaguar and elsewhere it refers to the leopard. A white panther may therefore be a white cougar, a white jaguar or a white leopard. Of these, white leopards appear to be the most common, although still very rare. White cougars, white jaguars and white leopards occasionally sighted too.

The **jaguarundi** (right) or eyra is a small wild cat native to southern North America and South America. It tolerates a variety of habitats. It is a secretive, generalist predator, with a slightly smaller body than lynxes. Small populations are threatened by human encroachment. Jaguarundis are bobcat-sized **smaller** wild cats, typically reaching a weight of 20 pounds, and they can also have very dark fur. Since they were a protected species, they were trapped and brought north and released. Over the years many sightings have of “black panthers”, were reported.

A **puma** (below) is a genus in the family Felidae that contains the cougar (also known as the puma). The **cougar** (Puma concolor) is a large felid of the subfamily **Felinae**.

It is native to the Americas. Its range spans from the Canadian Yukon to the southern Andes in South America, and is the widest of any large wild terrestrial mammal in the Western Hemisphere. It is the 2nd heaviest cat after the jaguar. Secretive and largely solitary by nature, the cougar is considered both nocturnal and crepuscular, although daytime sightings do occur. Puma is the mountain lion, cougar, puma concolor while lion is a big cat, **panthera leo**.



A **Lioness** (right) is a female lion. The tail of all lions ends in a dark, hairy tuft, **unlike** for puma or cougar, that can be differentiated between them. Species lion (P. leo), tiger (P. tigris), jaguar (P. onca), and leopard (P. pardus) on the basis of common cranial features. Snow leopard also belongs to the Panthera (P. uncia).

Y the CONFUSION?

Ostrich v Emu v Cassowary

The **ostriches** are a family, Struthionidae, of flightless birds. The two extant species of ostrich are the common ostrich and Somali ostrich, both in the genus Struthio, which also contains several species known from Holocene fossils such as the Asian ostrich. The common ostrich is the more widespread of the two living species, and is the largest living bird species. Other ostriches are also among the largest bird species ever. Ostriches are superb runners that can sprint at speeds of up to 72 km/h on average, with a peak 96.6 km/h during short periods, with 12-foot (3.7 m) strides. This also makes the ostrich the fastest animal on two legs. The ostrich is also an endurance runner and can jog at 48 km/h for as long as half an hour.

What is the difference between an Emu and an Ostrich?

Emus are the second largest birds native to Australia while Ostrich is largest bird native to Africa. Emus have deep brown feathers with it being very difficult to distinguish the males and females except during mating season while the ostrich males have black and white and females have brown feathers.

Emus and ostriches are polygamous in different ways. Female emus mate with a male, lay eggs, and then leave that male, who incubates and cares for offspring. The female then mates with another male. Male ostriches fight to create a harem of five to seven females.

Emus have three toes on each foot in a tridactyl arrangement, which is an adaptation for running and is seen in other birds, such as bustards and quails. The ostrich has two toes on each foot.

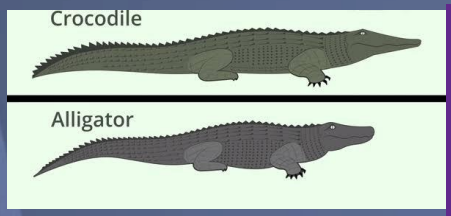
The **emu** is the 2nd largest living bird by height, after its ratite relative, the ostrich. It is endemic to Australia where it is the largest native bird and the only extant member of the genus Dromaius. It's range covers most of mainland Australia. Emus are soft-feathered, brown, flightless birds with long necks and legs, and can reach up to 1.9 m in height. Emus can travel great distances, and can sprint at 50 km/h.

Cassowaries, genus Casuarius, are ratites (flightless birds without a keel on their sternum bone) that are native to the tropical forests of Papua New Guinea, Indonesia and north-eastern Australia. It is the 3rd tallest and 2nd heaviest living bird, smaller only than the ostrich and emu. Emu is a single species, while there are three species of cassowaries. Cassowary has an attractive and prominent casque on the head and a large red wattle, **but not** on emu.

Y the CONFUSION?

Crocodile v Alligator v Caiman v Gharial

Crocodiles (R) or true crocodiles are large semiaquatic reptiles that live throughout the tropics in Africa, Asia, the Americas and Australia. The largest species of crocodile, the saltwater crocodile can grow to sizes over 7 m and weigh 1,000 kg. Several other large species can reach over 5.2 m long and weigh over 900 kg. They have very good night vision, and are mostly nocturnal hunters. They use the disadvantage of most prey animals' poor nocturnal vision to their advantage. Crocodiles are similar to alligators and caimans; for their common characteristics and differences among them.

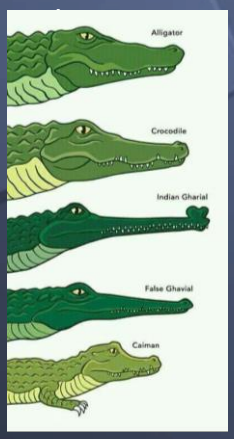


What are the difference between a Crocodile, an Alligator and a Gharial?

Although they appear similar, crocodiles, alligators and the gharial belong to separate biological families. The gharial, with its narrow snout, is easier to distinguish, while morphological differences are more difficult to spot in crocodiles and alligators. The most obvious external differences are visible in the head, with crocodiles having narrower, longer pointed heads, with a more V-shaped than a wider, U-shaped snout of alligators and caimans. All crocodiles are tropical species that, unlike alligators, are very sensitive to cold.

Alligator (left) is a crocodilian in the genus Alligator of the family Alligatoridae. The two living species are the American alligator and the Chinese alligator. An average adult American alligator's weight and length is 360 kg and 4 m, but they sometimes grow to 4.4 m long and weigh over 450 kg. The largest ever recorded, found in Louisiana, measured 5.84 m. The Chinese alligator is smaller, rarely exceeding 2.1 m in length. Additionally, it weighs considerably less, with males rarely over 45 kg. Alligators are native to only the United States and China.

A **caiman** (right), is a small-sized crocodilian, one of two primary lineages within Alligatoridae, the other being alligators. Caimans inhabit Mexico, Central and northern South America from marshes and swamps to mangrove rivers and lakes. Caimans have scaly skin, and live a fairly nocturnal existence. Caimans are distinguished from alligators, their closest relatives, by a few defining features: a lack of a bony septum between the nostrils, ventral armour composed of overlapping bony scutes formed from two parts united by a suture, and relatively longer, slenderer teeth than those possessed by alligators.



The **gharial** (right) or gavial, a fish eating crocodile and among the longest of all living crocodilians. Its snout is very long and narrow with a distinct boss at the end.

Y the CONFUSION?

Climate and Weather

Climate is the long-term average of weather, typically averaged over a period of 30 years. Some of the meteorological variables that are commonly measured are temperature, humidity, atmospheric pressure, wind, and precipitation. In a broader sense, climate is the state of the components of the climate system, which includes the ocean and ice on Earth. The climate of a location is affected by its latitude, terrain, and altitude, as well as nearby water bodies and their currents.

The standard averaging period is 30 years, but other periods may be used depending on the purpose. Climate also includes statistics other than the average, such as the magnitudes of day-to-day or year-to-year variations. There are several ways to classify climates into similar regimes. Originally, climes were defined in Ancient Greece to describe the weather depending upon a location's latitude. Modern climate classification methods can be broadly divided into genetic methods, which focus on the causes of climate, and empiric methods, which focus on the effects of climate.

The Köppen classification depends on average monthly values of temperature and precipitation. The most commonly used form of the Köppen classification has five primary types labeled A through E. These primary types are A) tropical, B) dry, C) mild mid-latitude, D) cold mid-latitude, and E) polar. The five primary classifications can be further divided into secondary classifications such as rainforest, monsoon, tropical savanna, humid subtropical, humid continental, oceanic climate, Mediterranean climate, desert, steppe, subarctic climate, tundra, and polar ice cap.

Weather is the state of the atmosphere, describing for example the degree to which it is hot or cold, wet or dry, calm or stormy, clear or cloudy. Most weather phenomena occur in the lowest level of the atmosphere, the troposphere, just below the stratosphere. Weather refers to day-to-day temperature and precipitation activity, whereas climate is the term for the averaging of atmospheric conditions over longer periods of time. When used without qualification, "weather" is generally understood to mean the weather of Earth. Weather is driven by air pressure, temperature and moisture differences between one place and another. On Earth, the common weather phenomena include wind, cloud, rain, snow, fog and dust storms. Less common events include natural disasters such as tornadoes, hurricanes, typhoons and ice storms. Almost all familiar weather phenomena occur in the troposphere (the lower part of the atmosphere).

Weather refers to short-term changes in the atmosphere, climate describes what the weather is like over a long period of time in a specific area. Different regions can have different climates. Example, weather tells you what to wear each day. Climate tells you what types of clothes to have in your closet.

Selected list of common Phobias (i)

Phobia/s	Psychological Conditions (Fear of…)
Achluophobia	Darkness
Acousticophobia	Noise
Acrophobia	Heights
Aerophobia	Aircraft or flying
Agoraphobia	Open places
Agyrophobia	Crossing streets
Aichmophobia	Sharp or pointed objects
Ailurophobia	Cats
Algophobia	Pain
Aquaphobia	Water
Arachnophobia	Spiders or Arachnids
Astraphobia	Thunder and Lightning
Atelophobia	Imperfection
Autophobia	Isolation
Bacteriophobia	Bacteria
Basophobia	Falling
Batrachophobia	Amphibians
Belonephobia	Needles
Bibliophobia	Books
Catoptrophobia	Mirrors
Chemophobia	Chemicals
Cherophobia	Happiness
Chiroptophobia	Bats
Chromophobia	Colours
Chronomentrophobia	Clocks
Claustrophobia	No escape / Being closed in
Coimetrophobia	Cemeteries
Coprophobia	Feces or defecation

Selected list of common Phobias (ii)

Phobia/s	Psychological Conditions (Fear of…)
Coulrophobia	Clowns
Cyberphobia	Computers
Cynophobia	Dogs
Demonophobia	Demons
Dendrophobia	Trees
Dentophobia	Dentists
Dysmorphophobia	Real or imaginary body defect
Eisoptrophobia	Seeing one's reflection in mirror
Emetophobia	Vomiting
Enochlophobia	Crowds
Entomophobia	Insects
Equinophobia	Horses
Ergophobia	Surgeon's fear of operating
Erotophobia	Sexual abuse
Erythrophobia	Colour Red or blushing
Frigophobia	Becoming too old
Gamophobia	Marriage
Gelotophobia	Being laughed at
Gephyrophobia	Bridges
Genuphobia	Act of kneeling
Gerascophobia	Growing old or Aging
Globophobia	Balloons
Glossophobia	Speaking in public / trying to speak
Gymnophobia	Nudity
Halitophobia	Bad breath
Heliophobia	Sun or sunlight
Helminthophobia	Worms
Hemophobia	Blood

Selected list of common Phobias (iii)

Phobia/s	Psychological Conditions (Fear of…)
Herpetophobia	Reptiles
hexakosioihexekontahexaphobia	Number 666
Hodophobia	Travel
Hypnophobia	Sleep or Nightmares
Hypochondria	Illness
Ichthyophobia	Fish, eating fish, dead fish
Insectophobia	Insects
Koumpounophobia	Buttons
Lilapsophobia	Tornadoes or Hurricanes
Mageirocophobia	Cooking
Melanophobia	Colour Black
Melissophobia	Bees
Musophobia	Mice or Rats
Myrmecophobia	Ants
Mysophobia	Germs, Contamination or Dirt
Necrophobia	Death or the Dead
Neophobia	Newness, novelty or change
Noctiphobia	Night
Nomophobia	Being out of mobile phone contact
Nosocomephobia	Hospitals
Nosophobia	Contracting a disease
Numerophobia	Numbers
Nyctophobia	Darkness
Obesophobia	Gaining weight
Odontophobia	Dental
Oneirophobia	Dreams
Ophidiophobia	Snakes
Ornithophobia	Birds

Selected list of common Phobias (iv)

Phobia/s	Psychological Conditions (Fear of…)
Osmophobia	Odours
Panphobia	Everything or unknown cause
Pedophobia	Babies or children
Phagophobia	Swallowing
Pharmacophobia	Medications
Phasmophobia	Ghosts or phantoms
Philophobia	Love
Phobophobia	Having a phobia
Phonophobia	Loud sounds or voices
Pogonophobia	Beards
Porphyrophobia	Colour Purple
Pteromerhanophobia	Flying
Pyrophobia	Fire
Radiophobia	Radioactivity or X-rays
Ranidaphobia	Frogs
Roller Coaster Phobia	Roller Coasters
Scopophobia	Being looked at or stared
Siderodromophobia	Trains or railroads
Sociophobia	People or social situations
Somniphobia	Sleep
Spectrophobia	Mirrors
Spheksophobia	Wasps
Stasiphobia	Standing or Walking
Submechanophobia	Partially or fully submerged objects
Taphophobia	Graves
Technophobia	Advanced technology
Teratophobia	Disfigured people
Tetraphobia	Number 4

Selected list of common Phobias (v)

Phobia/s	Psychological Conditions (Fear of…)
Thalassophobia	Sea or being in the Ocean
Thanatophobia	Dying
Thermophobia	High Temperatures
Tokophobia	Childbirth or Pregnancy
Tomophobia	Invasive Medical Procedure
Tonitrophobia	Thunder
Toxiphobia	Being Poisoned
Traumatophobia	Having an Injury
Trichophobia	Hair Loss
Triskaidekaphobia	Number 13
Trypanophobia	Needles or Injections
Trypophobia	Holes or Pattern of Holes
Vehophobia	Driving
Verminophobia	Germs
Workplace Phobia	Workplace
Xanthophobia	Colour Yellow
Xenophobia	Strangers, Foreigners or Aliens
Zoophobia	Animals

About the Author

KNOWLEDGE IS POWER, is strongly believed and advocated by Mr KSM Rajasekaran @ Kevin Raja.

His quest for knowledge started in 1989 when he became an encyclopedia sales representative. With the able management and guidance from his boss and mentor Dr. T Chandroo, Kevin progressed to Regional Sales Manager within few years. He started reading the volumes of the encyclopedia and his inquisitive mind made him to take up a hobby of reading more books on knowledge and statistics.

With the emergence of internet, google, Wikipedia and more, he cultivated a habit of searching, reading and writing till today.

A Regional Data Protection Officer now, reading and researching had made him to further his studies as well. Equipped with a Diploma in Legal Studies, Advance Diploma in Data Protection, Double Diploma in Leadership and People's Management, Kevin Raja is a passionate enthusiast in many fields.

His passion for long distance driving made him to execute a drive mission from Singapore to Cambodia to help the needy children in late 2019. He drove his Mazda 3 sports on a 5403 km trip via Malaysia and Thailand to Siem Reap, Cambodia and returned in 12 days. He is planning another charity drive mission further than Cambodia after the pandemic situation.

As an Arts enthusiast, he sings, acts and produces stage and online shows and concerts. In mid 2020, amidst the pandemic situation he produced several online shows for online audience. One of which, Tiktok Stars 2020 was recorded in Singapore Book of Records as the 'Largest Tiktok Video Montage'.

During the Covid-19 Circuit Breaker period, while searching and reading many topics on knowledge, he decided to compile them and make it useful to everyone. He felt not many takes the trouble to read such statistics. So he decided to have them compiled and hope all keep it in their mobile phones for quick references. Hence this e-book BOOK OF KNOWLEDGE is born. It took Kevin 3 months to search, compile, proof-read and make it worthy of sharing, on 9 August 2020 as Singapore celebrate the nation's 55th birthday.

Kevin Raja thanks Google, Guinness Records, Wikipedia and many other sources that made this possible for all to benefit from. Currently he is writing a book "Earth and Mankind" that tells much about the beginning of Earth and its Mankind. Expected to complete in 2021.

Published and data correct on: 9 August 2020
Sources: www.google.com / www.wikipedia.org / www.guinnessworldrecords.com

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Correct on 8 August 2020