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Google Tag Manager testing

Google Tag Manager testing

Google Business Profile customer engagement"Improving customer engagement on your Google Business Profile involves responding to reviews, answering questions, and posting regular updates. Best [SEO Agency Sydney](#) Australia. Increased interaction demonstrates your dedication to customer service and boosts your profiles credibility."

Google Business Profile customer feedback"Customer feedback on your Google Business Profile helps you understand whats working and what needs improvement. Positive reviews build trust, while constructive criticism provides an opportunity to refine your services and improve customer satisfaction."

Google Business Profile customer journey"Understanding the customer journey through your Google Business Profile helps you optimize your listing. By analyzing how users interact with your profile, you can identify opportunities to improve engagement, satisfaction, and conversion rates."

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Google Tag Manager trigger groups —

- [Google Tag Manager testing](#)
- [Google Tag Manager trigger groups](#)
- [Google Tag Manager triggers](#)
- [Google Tag Manager variable types](#)
- [Google Tag Manager variables](#)
- [Google Tag Manager version history](#)
- [Guest posting](#)

Google Business Profile customer reviewsCustomer reviews on your Google Business Profile build trust and improve search rankings. [Local SEO](#) . Encouraging satisfied customers to leave positive feedback and responding promptly to all reviews helps enhance your reputation and attract more business.

Google Business Profile engagement metrics"Engagement metrics on your Google Business Profile, such as clicks, calls, and website visits, help you understand user behavior.

SEO package australia - Search snippet optimization

- Google rich results
- Google search trends

Analyzing these metrics allows you to identify trends, refine your strategy, and increase conversions." Google Business Profile enhanced content"Adding enhanced contentsuch as videos, 360-degree images, and detailed product descriptionsto your Google Business Profile makes your listing stand out. Enhanced content provides a richer user experience, increasing engagement and conversions."

Google Tag Manager triggers

Google Business Profile enhancements"Enhancements to your Google Business Profile, such as adding photos, updating services, and publishing posts, improve your listings quality and relevance. Regular enhancements keep your profile fresh, engaging, and more likely to rank higher."

Google Business Profile highlightsAdding highlightssuch as unique selling points or special offersto your Google Business Profile makes your listing stand out. These highlights capture user attention and encourage potential customers to choose your business over competitors.

Google Business Profile holiday hours"Updating your holiday hours on your Google Business Profile prevents customer confusion and ensures people know when youre open. Accurate holiday hours improve trust, maintain customer satisfaction, and encourage more visits during busy seasons."

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HOW SEARCH ENGINE MARKETING HELPS BUSINESS GROW OVER TIME

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SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339





Google Tag Manager variable types

Google Business Profile insights"Google Business Profile insights provide valuable data on how users find and interact with your listing. By reviewing these metrics, you can understand what drives traffic, identify trends, and refine your strategy to attract more customers."

Google Business Profile keyword placement"Strategically placing keywords in your Google Business Profile description, posts, and Q&A section improves search visibility. Proper keyword placement ensures that your profile appears in relevant local searches, attracting more potential customers."

Google Business Profile listing quality"Maintaining high-quality listings on your Google Business Profile involves adding accurate information, posting engaging content, and responding to reviews. A quality listing attracts more customers, enhances your reputation, and improves search rankings."

Google Tag Manager variables

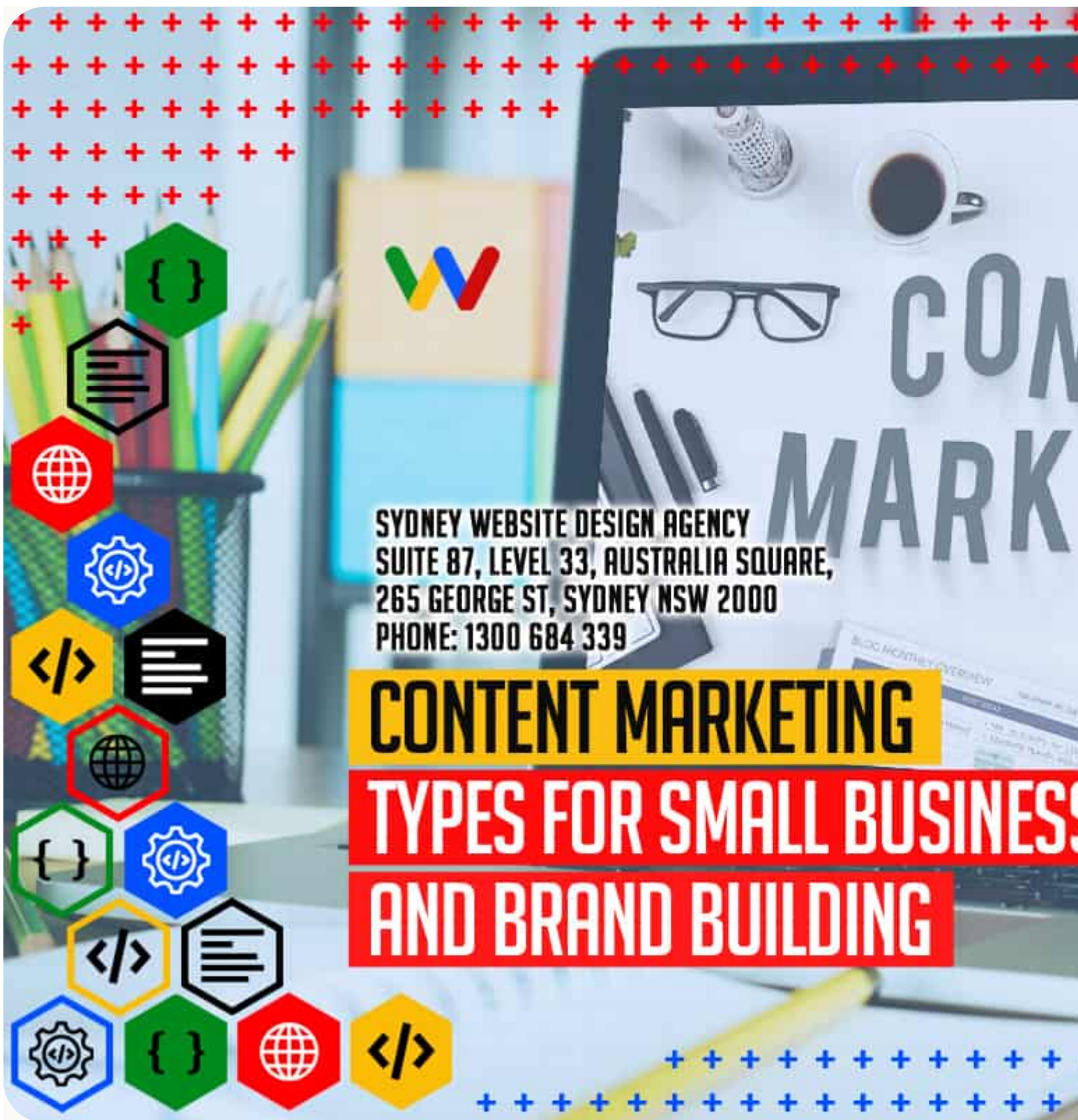
Google Business Profile local audience"Engaging your local audience through your Google Business Profile involves tailoring updates, posts, and services to nearby customers. Focusing on local relevance boosts visibility, builds stronger connections, and drives more traffic to your business."

Google Business Profile local citationsLocal citations that match your Google Business Profile details boost your credibility and local search rankings. Consistency across online directories helps ensure customers find accurate information and improves your overall visibility.

Google Business Profile local search optimization"Optimizing your Google Business Profile for local search involves updating business information, using relevant keywords, and encouraging customer reviews. These actions improve your ranking in local search results, making it easier for nearby customers to find your business."

KEY ADVANTAGES LOCAL SEO





Google Tag Manager version history

Google Business Profile local SEO"Local SEO for your Google Business Profile involves optimizing the listing to rank higher in local search results.

SEO package australia - Google search intent categories

- Featured snippets
- Google SERP features
- Google PageSpeed Insights

This includes adding relevant keywords, maintaining consistent citations, and encouraging positive reviews to boost visibility and attract local customers."

Google Business Profile location pins"Location pins in your Google Business Profile ensure that customers can easily find your business on Google Maps. By verifying your address and ensuring accurate location data, you improve accessibility and attract more foot traffic."

Google Business Profile management tools"Using management tools to monitor and update your Google Business Profile simplifies the optimization process. These tools help you track metrics, schedule updates, and respond to reviews more efficiently, improving your listings performance."

Guest posting

Google Business Profile map visibility"Enhancing your map visibility on Google Business Profile helps more customers discover your location. By ensuring accurate address information and optimizing your profile, you can appear more prominently on Google Maps searches."

Google Business Profile messagingMessaging through Google Business Profile allows customers to contact you directly from your listing. Enabling this feature and responding promptly to inquiries can improve customer satisfaction and increase the likelihood of converting leads into loyal customers.

Google Business Profile metrics"Google Business Profile metrics, such as views, clicks, and customer actions, provide valuable insights into how users interact with your listing.

SEO package australia - Google search CTR

1. Google search intent categories
2. Google search CTR

3. Search snippet optimization

By analyzing these metrics, you can make data-driven decisions to improve your online presence."



ANALYSIS

TRAFFIC

CONTENT

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RANKING

KEYWORDS

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About Sydney

This article is about the Australian city. For the greater metropolitan area, see [Greater Sydney](#). For the local government area, see [City of Sydney](#). For other uses, see [Sydney \(disambiguation\)](#).

Sydney

New South Wales

Sydney Opera House and Harbour E

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Sydney Opera House and Harbour E
Bridge
Queen Victoria Bu

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Queen Victoria
Building
University of Sydn

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Sydney
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Bondi Beach
Archibald Fountair

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Archibald
Fountain and St
Mary's Cathedral
Sydney central business district

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Sydney central business district

Map of the Sydney metropolitan area

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Map of the Sydney metropolitan area

Sydney is located in Australia

Image not found or type unknown

Sydney

| | |
|---|---|
| Coordinates | 33°52′S 151°12′E﻿ / ﻿33.867°S 151.200°E |
| Population | 5,450,496 (2023) [1] (1st) |
| • Density | 441/km ² (1,140/sq mi) (2023) [1] |
| Established | 26 January 1788; 237 years ago |
| Area | 12,367.7 km ² (4,775.2 sq mi)(GCCSA) [2] |
| Time zone | AEST (UTC+10) |
| • Summer (DST) | AEDT (UTC+11) |
| Location | <div><ul style="list-style-type: none">○ 287 km (178 mi) NE of Canberra○ 877 km (545 mi) NE of Melbourne○ 923 km (574 mi) S of Brisbane○ 1,404 km (872 mi) E of Adelaide○ 3,936 km (2,446 mi) E of Perth</div> |
| LGA(s) | Various (33) |
| County | Cumberland [3] |

State electorate(s) Various (49)

Federal division(s) Various (24)

| Mean max temp[4] | Mean min temp[4] | Annual rainfall[4] |
|------------------|------------------|-----------------------|
| 22.8 °C 73 °F | 14.7 °C 58 °F | 1,149.7 mm 45.3 in |

Sydney is the **capital city** of the **state** of **New South Wales** and the **most populous city in Australia**. Located on Australia's east coast, the metropolis surrounds **Sydney Harbour** and extends about 80 km (50 mi) from the **Pacific Ocean** in the east to the **Blue Mountains** in the west, and about 80 km (50 mi) from **Ku-ring-gai Chase National Park** and the **Hawkesbury River** in the north and north-west, to the **Royal National Park** and **Macarthur** in the south and south-west.[5] Greater Sydney consists of 658 suburbs, spread across 33 local government areas. Residents of the city are colloquially known as "Sydneyiders".[6] The estimated population in June 2023 was 5,450,496,[1] which is about 66% of the state's population.[7] The city's nicknames include the **Emerald City** and the **Harbour City**.[8]

There is evidence that **Aboriginal Australians** inhabited the **Greater Sydney** region at least 30,000 years ago, and **their engravings** and cultural sites are common. The **traditional custodians** of the land on which modern Sydney stands are the clans of the **Darug**, **Dharawal** and **Eora**.[9] During his **first Pacific voyage** in 1770, **James Cook** charted the eastern coast of Australia, making landfall at **Botany Bay**. In 1788, the **First Fleet** of **convicts**, led by **Arthur Phillip**, founded Sydney as a British **penal colony**, the first European settlement in Australia.[10] After **World War II**, Sydney experienced mass migration and by 2021 over 40 per cent of the population was born overseas. Foreign countries of birth with the greatest representation are mainland China, India, the United Kingdom, Vietnam and the Philippines.[11]

Despite being one of the most expensive cities in the world,[12][13] Sydney frequently ranks in the top ten **most liveable cities**. [14][15][16] It is classified as an **Alpha+ city** by the **Globalization and World Cities Research Network**, indicating its influence in the region and throughout the world.[17][18] Ranked eleventh in the world for economic opportunity,[19] Sydney has an advanced market economy with strengths in education, finance, manufacturing and **tourism**. [20][21] The **University of Sydney** and the **University of New South Wales** are ranked 18th and 19th in the world respectively.[22]

Sydney has hosted major international sporting events such as the **2000 Summer Olympics**, the **2003 Rugby World Cup Final**, and the **2023 FIFA Women's World Cup Final**. The city is among the top fifteen most-visited,[23] with millions of tourists coming each year to see the city's landmarks.[24] The city has over 1,000,000 ha (2,500,000 acres) of **nature reserves and parks**, [25] and its **notable natural features** include **Sydney Harbour** and **Royal National Park**. The **Sydney Harbour Bridge** and the World Heritage-listed **Sydney Opera House** are major tourist attractions. **Central Station** is the hub of Sydney's suburban train, metro and light rail networks and longer-distance services. The main passenger airport serving the city is **Kingsford Smith Airport**, one of the world's oldest continually operating airports.[26]

Toponymy

[[edit](#)]

In 1788, Captain [Arthur Phillip](#), the first governor of New South Wales, named the cove where the first British settlement was established [Sydney Cove](#) after Home Secretary [Thomas Townshend, 1st Viscount Sydney](#).^[27] The cove was called *Warrane* by the Aboriginal inhabitants.^[28] Phillip considered naming the settlement [Albion](#), but this name was never officially used.^[27] By 1790 Phillip and other officials were regularly calling the township Sydney.^[29] Sydney was declared a city in 1842.^[30]

The [Gadigal](#) (Cadigal) clan, whose territory stretches along the southern shore of [Port Jackson](#) from [South Head](#) to [Darling Harbour](#), are the traditional owners of the land on which the British settlement was initially established, and call their territory *Gadi* (*Cadi*). Aboriginal clan names within the Sydney region were often formed by adding the suffix "-gal" to a word denoting the name for their territory, a specific place in their territory, a food source, or totem. Greater Sydney covers the traditional lands of 28 known Aboriginal clans.^[31]

History

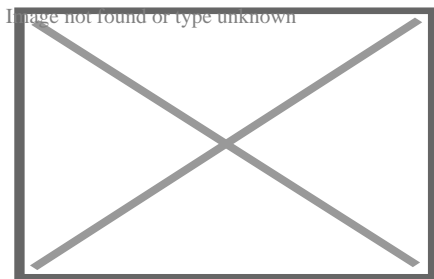
[[edit](#)]

Main article: [History of Sydney](#)

For a chronological guide, see [Timeline of Sydney](#).

First inhabitants of the region

[[edit](#)]



[Charcoal drawing](#) of kangaroos in [Heathcote National Park](#)

The first people to inhabit the area now known as Sydney were [Aboriginal Australians](#) who had migrated from southeast Asia via northern Australia.^[32] Flaked pebbles found in Western Sydney's gravel sediments might indicate human occupation from 45,000 to 50,000 years ago,^[33] while [radiocarbon dating](#) has shown evidence of human activity in the region from around 30,000 years ago.^[34] Prior to the arrival of the British, there were 4,000 to 8,000 Aboriginal people in the greater Sydney region.^[35]^[9]

The inhabitants subsisted on fishing, hunting, and gathering plants and shellfish. The diet of the coastal clans was more reliant on seafood whereas hinterland clans ate more forest animals and

plants. The clans had distinctive equipment and weapons mostly made of stone, wood, plant materials, bone and shell. They also differed in their body decorations, hairstyles, songs and dances. Aboriginal clans had a rich ceremonial life, part of a belief system centring on ancestral, totemic and supernatural beings. People from different clans and language groups came together to participate in initiation and other ceremonies. These occasions fostered trade, marriages and clan alliances.[36]

The earliest British settlers recorded the word 'Eora' as an Aboriginal term meaning either 'people' or 'from this place'. [37][9] The clans of the Sydney area occupied land with traditional boundaries. There is debate, however, about which group or nation these clans belonged to, and the extent of differences in language and rites. The major groups were the coastal Eora people, the Dharug (Darug) occupying the inland area from Parramatta to the Blue Mountains, and the Dharawal people south of Botany Bay.[9] Darginung and Gundungurra languages were spoken on the fringes of the Sydney area.[38]

Aboriginal clans of Sydney area, as recorded by early British settlers

| Clan | Territory name | Location |
|---------------|----------------|--|
| Bediagal | Not recorded | Probably north-west of Parramatta |
| Birrabirragal | Birrabirra | Lower Sydney Harbour around Sow and Pigs reef |
| Boolbainora | Boolbainmatta | Parramatta area |
| Borogegal | Booragy | Probably Bradleys Head and surrounding area |
| Boromedegal | Not recorded | Parramatta |
| Buruberongal | Not recorded | North-west of Parramatta |
| Darramurragal | Not recorded | Turramarra area |
| Gadigal | Cadi (Gadi) | South side of Port Jackson, from South Head to Darling Harbour |
| Gahbrogal | Not recorded | Liverpool and Cabramatta area |
| Gamaragal | Cammeray | North shore of Port Jackson |
| Gameygal | Kamay | Botany Bay |
| Gannemegal | Warmul | Parramatta area |
| Garigal | Not recorded | Broken Bay area |
| Gayamaygal | Kayeemy | Manly Cove |
| Gweagal | Gwea | Southern shore of Botany Bay |
| Wallumedegal | Wallumede | North shore of Port Jackson, opposite Sydney Cove |
| Wangal | Wann | South side of Port Jackson, from Darling Harbour to Rose Hill |

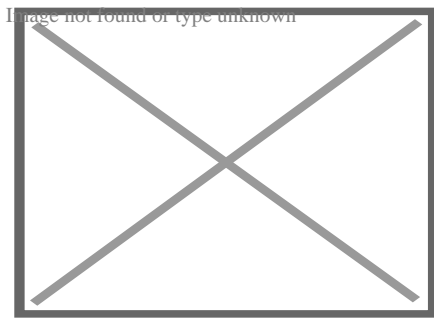
Clans of the Sydney region whose territory wasn't reliably recorded are: the Domaragal, Doogagal, Gannalgal, Gomerigal, Gooneeowlgal, Goorunggurregal, Gorualgal, Murrooredial, Noronggerragal, Oryangsoora and Wandeanegal.

Note: The names and territory boundaries do not always correspond with those used by contemporary Aboriginal groups of the greater Sydney area.[38][39][40]

The first meeting between Aboriginals and British explorers occurred on 29 April 1770 when Lieutenant James Cook landed at **Botany Bay** (Kamay[41]) and encountered the **Gweagal** clan.[42] Two Gweagal men opposed the landing party and one was shot and wounded.[43][44] Cook and his crew stayed at Botany Bay for a week, collecting water, timber, fodder and botanical specimens and exploring the surrounding area. Cook sought to establish relations with the Aboriginal population without success.[45]

Convict town (1788–1840)

[edit]



*The Founding of Australia, 26 January 1788, by Captain **Arthur Phillip** R.N., Sydney Cove. Painting by **Algernon Talmage**.*

Britain had been sending convicts to its American colonies for most of the eighteenth century, and the loss of these colonies in 1783 was the impetus to establish a penal colony at Botany Bay. Proponents of colonisation also pointed to the strategic importance of a new base in the Asia-Pacific region and its potential to provide much-needed timber and flax for the navy.[46]

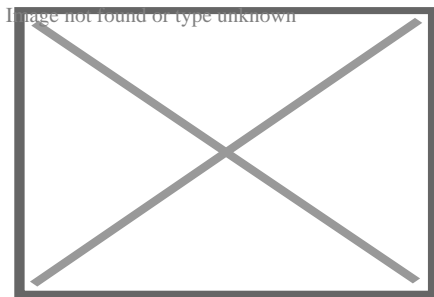
The **First Fleet** of 11 ships under the command of Captain **Arthur Phillip** arrived in Botany Bay in January 1788. It comprised more than a thousand settlers, including 736 convicts.[47] The fleet soon moved to the more suitable **Port Jackson** where a settlement was established at **Sydney Cove** on 26 January 1788.[48] The colony of New South Wales was formally proclaimed by Governor Phillip on 7 February 1788. Sydney Cove offered a fresh water supply and a safe harbour, which Philip described as "the finest Harbour in the World ... Here a Thousand Sail of the Line may ride in the most perfect Security".[49]

The settlement was planned to be a self-sufficient penal colony based on subsistence agriculture. Trade and shipbuilding were banned in order to keep the convicts isolated. However, the soil around the settlement proved poor and the first crops failed, leading to several years of hunger

and strict rationing. The food crisis was relieved with the arrival of the **Second Fleet** in mid-1790 and the **Third Fleet** in 1791.[50] Former convicts received small grants of land, and government and private farms spread to the more fertile lands around **Parramatta**, **Windsor** and **Camden** on the **Cumberland Plain**. By 1804, the colony was self-sufficient in food.[51]

A smallpox epidemic in April 1789 killed about half the region's Indigenous population.[9][52] In November 1790 **Bennelong** led a group of survivors of the Sydney clans into the settlement, establishing a continuous presence of Aboriginal Australians in settled Sydney.[53]

Phillip had been given no instructions for urban development, but in July 1788 submitted a plan for the new town at **Sydney Cove**. It included a wide central avenue, a permanent Government House, law courts, hospital and other public buildings, but no provision for warehouses, shops, or other commercial buildings. Phillip promptly ignored his own plan, and unplanned development became a feature of Sydney's topography.[54][55]



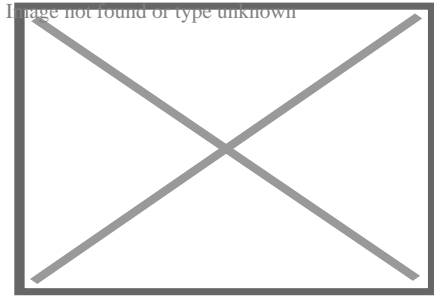
Thomas Watling's *View of Sydney Cove*, c. 1794–1796

After Phillip's departure in December 1792, the colony's military officers began acquiring land and importing consumer goods from visiting ships. Former convicts engaged in trade and opened small businesses. Soldiers and former convicts built houses on Crown land, with or without official permission, in what was now commonly called Sydney town. Governor **William Bligh** (1806–08) imposed restrictions on commerce and ordered the demolition of buildings erected on Crown land, including some owned by past and serving military officers. The resulting conflict culminated in the **Rum Rebellion** of 1808, in which Bligh was deposed by the **New South Wales Corps**. [56][57]

Governor **Lachlan Macquarie** (1810–1821) played a leading role in the development of Sydney and New South Wales, establishing a bank, a currency and a hospital. He employed a planner to design the street layout of Sydney and commissioned the construction of roads, wharves, churches, and public buildings. **Parramatta Road**, linking Sydney and Parramatta, was opened in 1811,[58] and a road across the **Blue Mountains** was completed in 1815, opening the way for large-scale farming and grazing west of the **Great Dividing Range**. [59][60]

Following the departure of Macquarie, official policy encouraged the emigration of free British settlers to New South Wales. Immigration to the colony increased from 900 free settlers in 1826–30 to 29,000 in 1836–40, many of whom settled in Sydney.[61][62] By the 1840s Sydney exhibited a geographic divide between poor and working-class residents living west of the **Tank Stream** in areas such as **The Rocks**, and the more affluent residents living to its east.[62] Free settlers, free-born residents and former convicts now represented the vast majority of the

population of Sydney, leading to increasing public agitation for responsible government and an end to transportation. Transportation to New South Wales ceased in 1840.[63]



The **Castle Hill convict rebellion** of 1804

Conflict on the Cumberland Plain

[[edit](#)]

In 1804, Irish convicts led around 300 rebels in the **Castle Hill Rebellion**, an attempt to march on Sydney, commandeer a ship, and sail to freedom.[64] Poorly armed, and with their leader Philip Cunningham captured, the main body of insurgents were routed by about 100 troops and volunteers at **Rouse Hill**. At least 39 convicts were killed in the uprising and subsequent executions.[65][66]

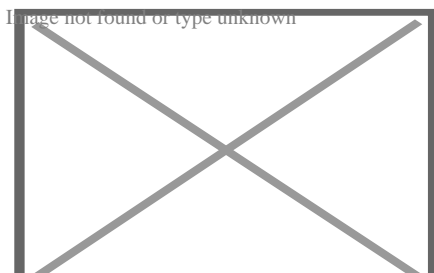
As the colony spread to the more fertile lands around the **Hawkesbury River**, north-west of Sydney, conflict between the settlers and the **Darug** people intensified, reaching a peak from 1794 to 1810. Bands of Darug people, led by **Pemulwuy** and later by his son **Tedbury**, burned crops, killed livestock and raided settler stores in a pattern of resistance that was to be repeated as the **colonial frontier expanded**. A military garrison was established on the Hawkesbury in 1795. The death toll from 1794 to 1800 was 26 settlers and up to 200 Darug.[67][68]

Conflict again erupted from 1814 to 1816 with the expansion of the colony into Dharawal country in the Nepean region south-west of Sydney. Following the deaths of several settlers, Governor Macquarie dispatched three military detachments into Dharawal lands, culminating in the **Appin massacre** (April 1816) in which at least 14 Aboriginal people were killed.[69][70]

Colonial city (1841–1900)

[[edit](#)]

The New South Wales Legislative Council became a semi-elected body in 1842. Sydney was declared a city the same year, and a governing council established, elected on a restrictive property franchise.[63]



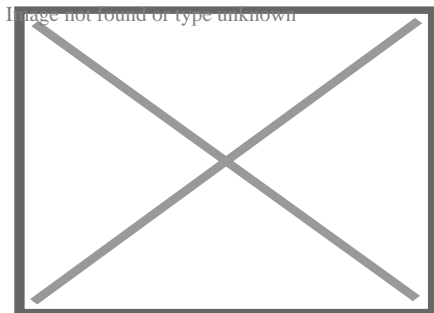
Aerial illustration of Sydney, 1888

The discovery of gold in New South Wales and Victoria in 1851 initially caused economic disruption as men moved to the goldfields. Melbourne soon overtook Sydney as Australia's largest city, leading to an enduring rivalry between the two. However, increased immigration from overseas and wealth from gold exports increased demand for housing, consumer goods, services and urban amenities.[71] The New South Wales government also stimulated growth by investing heavily in railways, trams, roads, ports, telegraph, schools and urban services.[72] The population of Sydney and its suburbs grew from 95,600 in 1861 to 386,900 in 1891.[73] The city developed many of its characteristic features. The growing population packed into rows of terrace houses in narrow streets. New public buildings of sandstone abounded, including at the **University of Sydney** (1854–61),[74] the **Australian Museum** (1858–66),[75] the Town Hall (1868–88),[76] and the **General Post Office** (1866–92).[77] Elaborate **coffee palaces** and hotels were erected.[78] Daylight bathing at Sydney's beaches was banned, but segregated bathing at designated ocean baths was popular.[79]

Drought, the winding down of public works and a financial crisis led to economic depression in Sydney throughout most of the 1890s. Meanwhile, the Sydney-based premier of New South Wales, **George Reid**, became a key figure in the process of federation.[80]

State capital (1901–present)

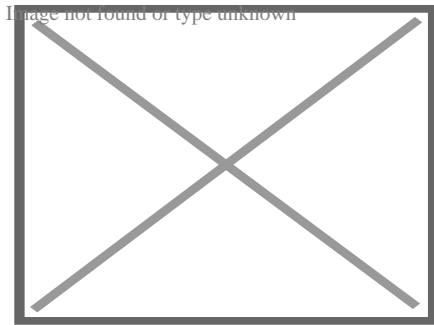
[edit]



A **tramcar** on George Street in 1920. Sydney once had one of the largest **tram networks** in the British Empire.

When the six colonies federated on 1 January 1901, Sydney became the capital of the State of New South Wales. The spread of **bubonic plague** in 1900 prompted the state government to modernise the wharves and demolish inner-city slums. The outbreak of the First World War in 1914 saw more Sydney males volunteer for the armed forces than the Commonwealth authorities could process, and helped reduce unemployment. Those returning from the war in 1918 were promised "homes fit for heroes" in new suburbs such as Daceyville and Matraville. "Garden suburbs" and mixed industrial and residential developments also grew along the rail and tram corridors.[62] The population reached one million in 1926, after Sydney had regained its position as the most populous city in Australia.[81] The government created jobs with massive public projects such as the electrification of the **Sydney rail network** and building the Sydney Harbour

Bridge.[82]



Sydney Harbour Bridge opening day, 19 March 1932

Sydney was more severely affected by the **Great Depression** of the 1930s than regional New South Wales or Melbourne.[83] New building almost came to a standstill, and by 1933 the unemployment rate for male workers was 28 per cent, but over 40 per cent in working class areas such as Alexandria and Redfern. Many families were evicted from their homes and shanty towns grew along coastal Sydney and Botany Bay, the largest being "Happy Valley" at **La Perouse**. [84] The Depression also exacerbated political divisions. In March 1932, when populist Labor premier **Jack Lang** attempted to open the Sydney Harbour Bridge he was upstaged by **Francis de Groot** of the far-right **New Guard**, who slashed the ribbon with a sabre.[85]

In January 1938, Sydney celebrated the **Empire Games** and the sesquicentenary of European settlement in Australia. One journalist wrote, "Golden beaches. Sun tanned men and maidens...Red-roofed villas terraced above the blue waters of the harbour...Even **Melbourne** seems like some grey and stately city of Northern Europe compared with Sydney's sub-tropical splendours." A congress of the "Aborigines of Australia" declared 26 January "A **Day of Mourning**" for "the whiteman's seizure of our country." [86]

With the outbreak of **Second World War** in 1939, Sydney experienced a surge in industrial development. Unemployment virtually disappeared and women moved into jobs previously typically reserved for males. Sydney was attacked by **Japanese submarines** in May and June 1942 with 21 killed. Households built **air raid** shelters and performed drills.[87] **Military establishments** in response to **World War II in Australia** included the **Garden Island Tunnel System**, the only **tunnel warfare** complex in Sydney, and the heritage-listed military **fortification** systems **Bradleys Head Fortification Complex** and **Middle Head Fortifications**, which were part of a total **defence system for Sydney Harbour**. [88]

A post-war immigration and baby boom saw a rapid increase in Sydney's population and the spread of low-density housing in suburbs throughout the Cumberland Plain. Immigrants—mostly from Britain and continental Europe—and their children accounted for over three-quarters of Sydney's population growth between 1947 and 1971.[89] The newly created Cumberland County Council oversaw low-density residential developments, the largest at **Green Valley** and **Mount Druitt**. Older residential centres such as Parramatta, **Bankstown** and **Liverpool** became suburbs of the metropolis.[90] Manufacturing, protected by high tariffs, employed over a third of the workforce from 1945 to the 1960s. However, as the long post-war economic boom progressed, retail and other service industries became the main source of new jobs.[91]

An estimated one million onlookers, most of the city's population, watched [Queen Elizabeth II](#) land in 1954 at Farm Cove where Captain Phillip had raised the Union Jack 165 years earlier, commencing her [Australian Royal Tour](#). It was the first time a reigning monarch stepped onto Australian soil.^[92]

Increasing high-rise development in Sydney and the expansion of suburbs beyond the "green belt" envisaged by the planners of the 1950s resulted in community protests. In the early 1970s, trade unions and resident action groups imposed [green bans](#) on development projects in historic areas such as The Rocks. Federal, State and local governments introduced heritage and environmental legislation.^[62] The Sydney Opera House was also controversial for its cost and disputes between architect [Jørn Utzon](#) and government officials. However, soon after it opened in 1973 it became a major tourist attraction and symbol of the city.^[93] The progressive reduction in tariff protection from 1974 began the transformation of Sydney from a manufacturing centre to a "world city".^[94] From the 1980s, [overseas immigration](#) grew rapidly, with Asia, the Middle East and Africa becoming major sources. By 2021, the population of Sydney was over 5.2 million, with 40% of the population born overseas. China and India overtook England as the largest source countries for overseas-born residents.^[95]

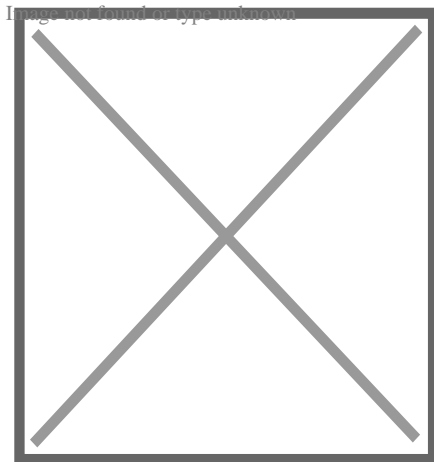
Geography

^{[[edit](#)]}

Main article: [Geography of Sydney](#)

Topography

^{[[edit](#)]}



Sydney lies on a [submergent coastline](#) where the ocean level has risen to flood deep [rias](#).

Sydney is a coastal basin with the [Tasman Sea](#) to the east, the [Blue Mountains](#) to the west, the Hawkesbury River to the north, and the [Woronora Plateau](#) to the south.

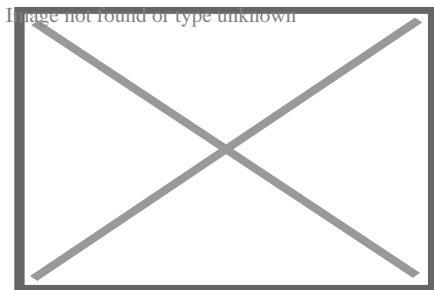
Sydney spans two geographic regions. The **Cumberland Plain** lies to the south and west of the Harbour and is relatively flat. The **Hornsby Plateau** is located to the north and is dissected by steep valleys. The flat areas of the south were the first to be developed; it was not until the construction of the Sydney Harbour Bridge that the northern reaches became more heavily populated. **Seventy surf beaches** can be found along its coastline, with Bondi Beach being the most famous.

The **Nepean River** wraps around the western edge of the city and becomes the Hawkesbury River before reaching **Broken Bay**. Most of Sydney's water storages can be found on tributaries of the Nepean River. The **Parramatta River** is mostly industrial and drains a large area of Sydney's western suburbs into Port Jackson. The southern parts of the city are drained by the **Georges River** and the **Cooks River** into Botany Bay.

There is no single definition of the boundaries of Sydney. The Australian Statistical Geography Standard definition of Greater Sydney covers 12,369 km² (4,776 sq mi) and includes the local government areas of **Central Coast** in the north, **Hawkesbury** in the north-west, **Blue Mountains** in the west, **Sutherland Shire** in the south, and **Wollondilly** in the south-west.[96] The local government area of the **City of Sydney** covers about 26 square kilometres from **Garden island** in the east to Bicentennial Park in the west, and south to the suburbs of Alexandria and **Rosebery**. [97]

Geology

[edit]



Almost all of the exposed rocks around Sydney are **Sydney sandstone**.

Sydney is made up of mostly **Triassic** rock with some recent **igneous** dykes and **volcanic** necks (typically found in the **Prospect dolerite intrusion**, west of Sydney).[98] The **Sydney Basin** was formed in the early Triassic period.[99] The sand that was to become the sandstone of today was laid down between 360 and 200 million years ago. The sandstone has **shale** lenses and fossil riverbeds.[99] The **continental shelf** of **Australia** is only 25.9 km (16.1 mi) away from the coast of Sydney, and that is where the **Tasman Abyssal Plain** lies.[100][101]

The **Sydney Basin** bioregion includes coastal features of cliffs, beaches, and estuaries. Deep river valleys known as **rias** were carved during the Triassic period in the **Hawkesbury sandstone** of the coastal region. The rising sea level between 18,000 and 6,000 years ago flooded the rias to form estuaries and deep harbours.[99] Port Jackson, better known as Sydney Harbour, is one

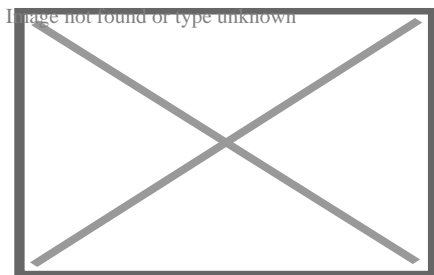
such [ria](#).^[102] Sydney features two major soil types: [sandy soils](#) (which originate from the Hawkesbury sandstone) and [clay](#) (which are from shales and [volcanic rocks](#)), though some soils may be a mixture of the two.^[103]

Directly overlying the older Hawkesbury sandstone is the [Wianamatta shale](#), a geological feature found in western Sydney that was deposited in connection with a large [river delta](#) during the [Middle Triassic](#). The Wianamatta shale generally comprises fine grained [sedimentary rocks](#) such as shales, [mudstones](#), [ironstones](#), [siltstones](#) and [laminites](#), with less common sandstone units.^[104] The Wianamatta Group is made up of [Bringelly Shale](#), [Minchinbury Sandstone](#) and [Ashfield Shale](#).^[105]

Ecology

[\[edit\]](#)

Further information: [Ecology of Sydney](#)



Typical [grassy](#) woodland in the Sydney metropolitan area

The most prevalent [plant communities](#) in the Sydney region are grassy woodlands (i.e. [savannas](#))^[106] and some pockets of dry [sclerophyll](#) forests,^[107] which consist of [eucalyptus](#) trees, [casuarinas](#), [melaleucas](#), [corymbias](#) and [angophoras](#), with shrubs (typically [wattles](#), [callistemons](#), [grevilleas](#) and [banksias](#)), and a semi-continuous grass in the [understory](#).^[108] The plants in this community tend to have rough, spiky leaves due to low [soil fertility](#). Sydney also features a few areas of wet sclerophyll forests in the wetter, elevated areas in the [north](#) and [northeast](#). These forests are defined by straight, tall tree [canopies](#) with a moist understory of soft-leaved shrubs, [tree ferns](#) and herbs.^[109]

The predominant vegetation community in Sydney is the [Cumberland Plain Woodland](#) in [Western Sydney](#) ([Cumberland Plain](#)),^[110] followed by the [Sydney Turpentine-Ironbark Forest](#) in the Inner West and [Northern Sydney](#),^[111] the [Eastern Suburbs Banksia Scrub](#) in the coastline and the [Blue Gum High Forest](#) scantily present in the North Shore – all of which are critically endangered.^{[112][113]} The city also includes the [Sydney Sandstone Ridgetop Woodland](#) found in [Ku-ring-gai Chase National Park](#) on the [Hornsby Plateau](#) to the north.^[114]

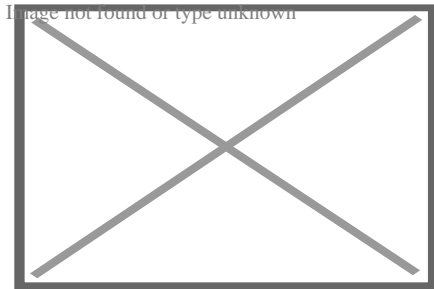
Sydney is home to dozens of [bird species](#),^[115] which commonly include the [Australian raven](#), [Australian magpie](#), [crested pigeon](#), [noisy miner](#) and the [pied currawong](#). Introduced bird species ubiquitously found in Sydney are the [common myna](#), [common starling](#), [house sparrow](#) and the [spotted dove](#).^[116] [Reptile](#) species are also numerous and predominantly include [skinks](#).^{[117][118]} Sydney has a few [mammal](#) and [spider](#) species, such as the [grey-headed flying fox](#) and the

Sydney funnel-web, respectively,[119][120] and has a huge diversity of marine species inhabiting its harbour and beaches.[121]

Climate

[edit]

Main articles: [Climate of Sydney](#) and [Severe weather events in Sydney](#)



A summer storm over Sydney Harbour

Under the [Köppen–Geiger classification](#), Sydney has a [humid subtropical climate](#) (*Cfa*)[122] with "warm, sometimes hot" summers and "generally mild",[123][124][125] to "cool" winters.[126] The [El Niño–Southern Oscillation](#), the [Indian Ocean Dipole](#) and the [Southern Annular Mode](#)[127][128] play an important role in determining Sydney's weather patterns: [drought](#) and [bushfire](#) on the one hand, and storms and flooding on the other, associated with the opposite [phases of the oscillation in Australia](#). The weather is [moderated](#) by proximity to the ocean, and more extreme temperatures are recorded in the inland western suburbs because Sydney CBD is more affected by the [oceanic climate](#) drivers than the western suburbs.[129][130]

At Sydney's primary weather station at [Observatory Hill](#), extreme temperatures have ranged from 45.8 °C (114.4 °F) on 18 [January 2013](#) to 2.1 °C (35.8 °F) on 22 June 1932.[131][132][133] An average of 14.9 days a year have temperatures at or above 30 °C (86 °F) in the central business district (CBD).[130] In contrast, the metropolitan area averages between 35 and 65 days, depending on the suburb.[134] The hottest day in the metropolitan area occurred in [Penrith](#) on 4 January 2020, where a high of 48.9 °C (120.0 °F) was recorded.[135] The average annual temperature of the sea ranges from 18.5 °C (65.3 °F) in September to 23.7 °C (74.7 °F) in February.[136] Sydney has an average of 7.2 hours of sunshine per day[137] and 109.5 clear days annually.[4] Due to the inland location, [frost](#) is recorded early in the morning in [Western Sydney](#) a few times in winter. Autumn and spring are the transitional seasons, with spring showing a larger temperature variation than autumn.[138]

Sydney experiences an [urban heat island](#) effect.[139] This makes certain parts of the city more vulnerable to extreme heat, including coastal suburbs.[139][140] In late spring and summer, temperatures over 35 °C (95 °F) are not uncommon,[141] though hot, dry conditions are usually ended by a [southerly buster](#),[142] a powerful southerly that brings [gale](#) winds and a rapid fall in temperature.[143] Since Sydney is downwind of the [Great Dividing Range](#), it occasionally experiences dry, westerly [foehn winds](#) typically in winter and early spring (which are the reason for its warm maximum temperatures).[144][145][146] Westerly winds are intense when the

Roaring Forties (or the Southern Annular Mode) shift towards southeastern Australia,[147] where they may damage homes and affect flights, in addition to making the temperature seem colder than it actually is.[148][149]

Rainfall has a moderate to low variability and has historically been fairly uniform throughout the year, although in recent years it has been more summer-dominant and erratic.[150][151][152][153] Precipitation is usually higher in summer through to autumn,[124] and lower in late winter to early spring.[127][154][130][155] In late autumn and winter, east coast lows may bring large amounts of rainfall, especially in the CBD.[156] In the warm season black nor'easters are usually the cause of heavy rain events, though other forms of low-pressure areas, including remnants of ex-cyclones, may also bring heavy deluge and afternoon thunderstorms.[157][158] 'Snow' was last alleged in 1836, more than likely a fall of graupel, or soft hail; and in July 2008 the Upper North Shore saw a fall of graupel that was mistaken by many for 'snow'.[159] In 2009, dry conditions brought a severe dust storm towards the city.[160][161]

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Climate data for Sydney (Observatory Hill) 1991–2020 averages, 1861–present extremes

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year |
|------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|--------------|--------------|---------------|
| Record high °C (°F) | 45.8 (114.4) | 42.1 (107.8) | 39.8 (103.6) | 35.4 (95.7) | 30.0 (86.0) | 26.9 (80.4) | 26.5 (79.7) | 31.3 (88.3) | 34.6 (94.3) | 38.2 (100.8) | 41.8 (107.2) | 42.2 (108.0) | 45.8 (114.4) |
| Mean maximum °C (°F) | 36.8 (98.2) | 34.1 (93.4) | 32.2 (90.0) | 29.7 (85.5) | 26.2 (79.2) | 22.3 (72.1) | 22.9 (73.2) | 25.4 (77.7) | 29.9 (85.8) | 33.6 (92.5) | 34.1 (93.4) | 34.4 (93.9) | 38.8 (101.8) |
| Mean daily maximum °C (°F) | 27.0 (80.6) | 26.8 (80.2) | 25.7 (78.3) | 23.6 (74.5) | 20.9 (69.6) | 18.3 (64.9) | 17.9 (64.2) | 19.3 (66.7) | 21.6 (70.9) | 23.2 (73.8) | 24.2 (75.6) | 25.7 (78.3) | 22.8 (73.0) |
| Daily mean °C (°F) | 23.5 (74.3) | 23.4 (74.1) | 22.1 (71.8) | 19.5 (67.1) | 16.6 (61.9) | 14.2 (57.6) | 13.4 (56.1) | 14.5 (58.1) | 17.0 (62.6) | 18.9 (66.0) | 20.4 (68.7) | 22.1 (71.8) | 18.8 (65.8) |
| Mean daily minimum °C (°F) | 20.0 (68.0) | 19.9 (67.8) | 18.4 (65.1) | 15.3 (59.5) | 12.3 (54.1) | 10.0 (50.0) | 8.9 (48.0) | 9.7 (49.5) | 12.3 (54.1) | 14.6 (58.3) | 16.6 (61.9) | 18.4 (65.1) | 14.7 (58.5) |
| Mean minimum °C (°F) | 16.1 (61.0) | 16.1 (61.0) | 14.2 (57.6) | 11.0 (51.8) | 8.3 (46.9) | 6.5 (43.7) | 5.7 (42.3) | 6.1 (43.0) | 8.0 (46.4) | 9.8 (49.6) | 12.0 (53.6) | 13.9 (57.0) | 5.3 (41.5) |
| Record low °C (°F) | 10.6 (51.1) | 9.6 (49.3) | 9.3 (48.7) | 7.0 (44.6) | 4.4 (39.9) | 2.1 (35.8) | 2.2 (36.0) | 2.7 (36.9) | 4.9 (40.8) | 5.7 (42.3) | 7.7 (45.9) | 9.1 (48.4) | 2.1 (35.8) |
| Average rainfall mm (inches) | 91.1 (3.59) | 131.5 (5.18) | 117.5 (4.63) | 114.1 (4.49) | 100.8 (3.97) | 142.0 (5.59) | 80.3 (3.16) | 75.1 (2.96) | 63.4 (2.50) | 67.7 (2.67) | 90.6 (3.57) | 73.0 (2.87) | 1,149 (45.20) |

| | | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|
| Average rainy days (? 1 mm) | 8.2 | 9.0 | 10.1 | 7.9 | 7.9 | 9.3 | 7.2 | 5.6 | 5.8 | 7.6 | 8.7 | 7.9 | 95.2 |
| Average afternoon relative humidity (%) | 60 | 62 | 59 | 58 | 58 | 56 | 52 | 47 | 49 | 53 | 57 | 58 | 56 |
| Average dew point °C (°F) | 16.5 (61.7) | 17.2 (63.0) | 15.4 (59.7) | 12.7 (54.9) | 10.3 (50.5) | 7.8 (46.0) | 6.1 (43.0) | 5.4 (41.7) | 7.8 (46.0) | 10.2 (50.4) | 12.6 (54.7) | 14.6 (58.3) | 11.4 (52.5) |
| Mean monthly sunshine hours | 232.5 | 205.9 | 210.8 | 213.0 | 204.6 | 171.0 | 207.7 | 248.0 | 243.0 | 244.9 | 222.0 | 235.6 | 2,639 |
| Percentage possible sunshine | 53 | 54 | 55 | 63 | 63 | 57 | 66 | 72 | 67 | 61 | 55 | 55 | 60 |

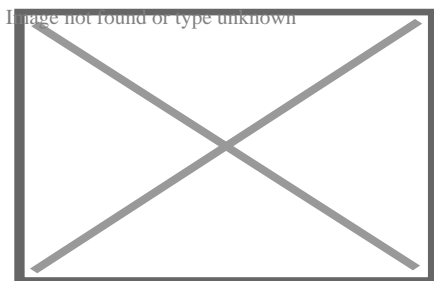
Source 1: [Bureau of Meteorology](#)^{[162][163][164][165]}

Source 2: [Bureau of Meteorology, Sydney Airport \(sunshine hours\)](#)^[166]

Regions

[\[edit\]](#)

Main article: [Regions of Sydney](#)

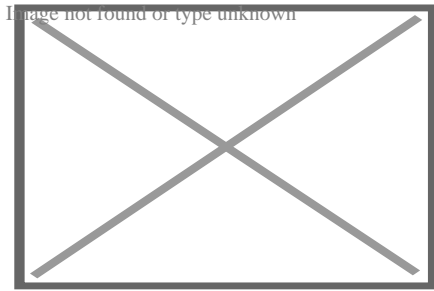


Sydney area at night, facing west. [Wollongong](#) is bottom left, and the [Central Coast](#) is at the far right.

The [Greater Sydney Commission](#) divides Sydney into three "cities" and five "districts" based on the 33 LGAs in the metropolitan area. The "metropolis of three cities" comprises *Eastern Harbour City*, *Central River City* and *Western Parkland City*.^[167] The Australian Bureau of Statistics also includes City of Central Coast (the former Gosford City and Wyong Shire) as part of Greater Sydney for population counts,^[168] adding 330,000 people.^[169]

Inner suburbs

[edit]



Historical buildings in **Millers Point**, an inner suburb north of the CBD

The **CBD** extends about 3 km (1.9 mi) south from **Sydney Cove**. It is bordered by **Farm Cove** within the **Royal Botanic Garden** to the east and **Darling Harbour** to the west. Suburbs surrounding the CBD include **Woolloomooloo** and **Potts Point** to the east, **Surry Hills** and **Darlinghurst** to the south, **Pymont** and **Ultimo** to the west, and **Millers Point** and **The Rocks** to the north. Most of these suburbs measure less than 1 km² (0.4 sq mi) in area. The Sydney CBD is characterised by narrow streets and thoroughfares, created in its convict beginnings.[170]

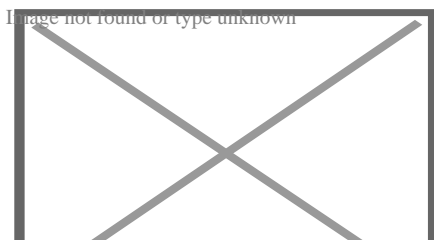
Several localities, distinct from suburbs, exist throughout Sydney's inner reaches. **Central** and **Circular Quay** are transport hubs with ferry, rail, and bus interchanges. **Chinatown**, Darling Harbour, and **Kings Cross** are important locations for culture, tourism, and recreation. The **Strand Arcade**, located between **Pitt Street Mall** and **George Street**, is a historical **Victorian-style shopping arcade**. Opened on 1 April 1892, its shop fronts are an exact replica of the original internal shopping facades.[171] **Westfield Sydney**, located beneath the **Sydney Tower**, is the largest shopping centre by area in Sydney.[172]

Since the late 20th century, there has been a trend of **gentrification** amongst Sydney's inner suburbs. Pymont, located on the harbour, was redeveloped from a centre of shipping and international trade to an area of **high density housing**, tourist accommodation, and gambling.[173] Originally located well outside of the city, Darlinghurst is the location of the historic **Darlinghurst Gaol**, manufacturing, and mixed housing. For a period it was known as an area of prostitution. The terrace-style housing has largely been retained and Darlinghurst has undergone significant gentrification since the 1980s.[174][175][176]

Green Square is a former industrial area of **Waterloo** which is undergoing urban renewal worth \$8 billion. On the city harbour edge, the historic suburb and wharves of Millers Point are being built up as the new area of **Barangaroo**. [177][178] The suburb of **Paddington** is known for its restored **terrace houses**, **Victoria Barracks**, and shopping including the weekly Oxford Street markets.[179]

Inner West

[edit]



Newtown, one of the inner-most parts of the Inner West, is one of the most complete **Victorian** and **Edwardian era** commercial precincts in Australia.

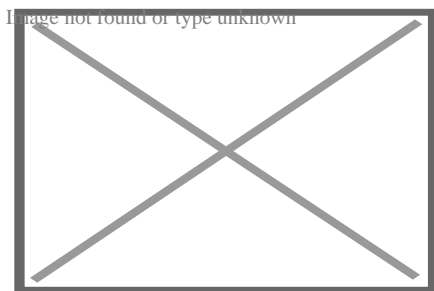
The **Inner West** generally includes the **Inner West Council**, **Municipality of Burwood**, **Municipality of Strathfield**, and **City of Canada Bay**. These span up to about 11 km west of the CBD. Historically, especially prior to the building of the Harbour Bridge,[180] the outer suburbs of the Inner West such as **Strathfield** were the location of "country" estates for the colony's elites. By contrast, the inner suburbs in the Inner West, being close to transport and industry, have historically housed working-class industrial workers. These areas have undergone gentrification in the late 20th century, and many parts are now highly valued residential suburbs.[181] As of 2021, an Inner West suburb (Strathfield) remained one of the 20 most expensive postcodes in Australia by median house price (the others were all in metropolitan Sydney, all in Northern Sydney or the Eastern Suburbs).[182] The **University of Sydney** is located in this area, as well as the **University of Technology, Sydney** and a campus of the **Australian Catholic University**. The Anzac Bridge spans Johnstons Bay and connects **Rozelle** to **Pymont** and the city, forming part of the **Western Distributor**.

The Inner West is today well known as the location of village commercial centres with cosmopolitan flavours, such as the "Little Italy" commercial centres of Leichardt, Five Dock and Haberfield,[183] "Little Portugal" in Petersham,[184] "Little Korea" in Strathfield[185] or "Little Shanghai" in Ashfield.[186] Large-scale shopping centres in the area include **Westfield Burwood**, **DFO Homebush** and **Birkenhead Point Outlet Centre**. There is a large cosmopolitan community and nightlife hub on **King Street, Newtown**.

The area is serviced by **Sydney Trains'** **T1**, **T2** and **T3** services, including the **Main Suburban Line**, which was the first to be constructed in New South Wales. **Strathfield railway station** is a secondary railway hub within Sydney, and major station on the Suburban and **Northern** lines. It was constructed in 1876.[187] The future **Sydney Metro West** will also connect this area with the City and Parramatta. The area is also serviced by the **Parramatta River services** of **Sydney Ferries**,[188] numerous bus routes and cycleways.[189]

Eastern suburbs

[edit]



Residences in **Bellevue Hill**. Sydney's eastern suburbs are made up of some of the most expensive real estate in the country[190]

The Eastern Suburbs encompass the [Municipality of Woollahra](#), the [City of Randwick](#), the [Waverley Municipal Council](#), and parts of the [Bayside Council](#). They include some of the most affluent and advantaged areas in the country, with some streets being amongst the most expensive in the world. As at 2014, [Wolseley Road](#), [Point Piper](#), had a top price of \$20,900 per square metre, making it the ninth-most expensive street in the world.^[191] More than 75% of neighbourhoods in the [Electoral District of Wentworth](#) fall under the top decile of SEIFA advantage, making it the least disadvantaged area in the country.^[192] As of 2021, of the 20 most expensive postcodes in Australia by median house price, nine were in the Eastern Suburbs.^[182]

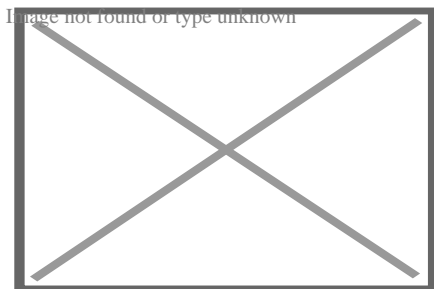
Major landmarks include [Bondi Beach](#), which was added to the [Australian National Heritage List](#) in 2008;^[193] and [Bondi Junction](#), featuring a [Westfield shopping centre](#) and an estimated office workforce of 6,400 by 2035,^[194] as well as a [railway station](#) on the [T4 Eastern Suburbs Line](#). The suburb of [Randwick](#) contains [Randwick Racecourse](#), the [Royal Hospital for Women](#), the [Prince of Wales Hospital](#), [Sydney Children's Hospital](#), and [University of New South Wales Kensington Campus](#).^[195]

Construction of the [CBD and South East Light Rail](#) was completed in April 2020.^[196] The project aims to provide reliable and high-capacity tram services to residents in the City and South-East.

Major shopping centres in the area include [Westfield Bondi Junction](#) and [Westfield Eastgardens](#).

Southern Sydney

[\[edit\]](#)



[Kurnell](#), [La Perouse](#), and [Cronulla](#), along with various other suburbs, face Botany Bay.

The Southern district of Sydney includes the suburbs in the [local government areas](#) of the [Georges River Council](#) (collectively known as [St George](#)) and the [Sutherland Shire](#) (colloquially known as 'The Shire'), on the southern banks of the [Georges River](#).

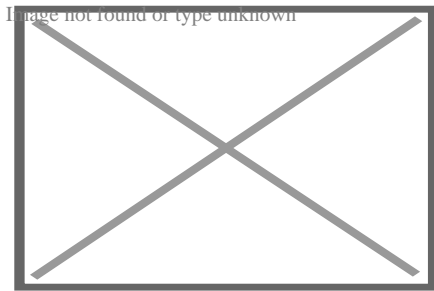
The [Kurnell peninsula](#), near [Botany Bay](#), is the site of the first landfall on the eastern coastline made by James Cook in 1770. [La Perouse](#), a historic suburb named after the French navigator [Jean-François de Galaup, comte de Lapérouse](#), is notable for its old military outpost at [Bare Island](#) and the [Botany Bay National Park](#).

The suburb of [Cronulla](#) in [southern Sydney](#) is close to Royal National Park, Australia's oldest national park. Hurstville, a large suburb with commercial and high-rise residential buildings dominating the skyline, has become a CBD for the southern suburbs.^[197]

Northern Sydney

[edit]

Further information: [Northern Sydney](#)



[Chatswood](#) is a major commercial district.

'[Northern Sydney](#)' includes the suburbs in the [Upper North Shore](#), [Lower North Shore](#) and the [Northern Beaches](#).

The Northern Suburbs include several landmarks – [Macquarie University](#), [Gladesville Bridge](#), [Ryde Bridge](#), [Macquarie Centre](#) and Curzon Hall in [Marsfield](#). This area includes suburbs in the local government areas of [Hornsby Shire](#), [Ku-ring-gai Council](#), [City of Ryde](#), the [Municipality of Hunter's Hill](#) and parts of the [City of Parramatta](#).

The North Shore includes the commercial centres of [North Sydney](#) and Chatswood. North Sydney itself consists of a large commercial centre, which contains the second largest concentration of high-rise buildings in Sydney after the CBD. North Sydney is dominated by advertising, marketing and associated trades, with many large corporations holding offices.

The Northern Beaches area includes [Manly](#), one of Sydney's most popular holiday destinations. The region also features [Sydney Heads](#), a series of [headlands](#) which form the entrance to Sydney Harbour. The Northern Beaches area extends south to the entrance of Port Jackson (Sydney Harbour), west to [Middle Harbour](#) and north to the entrance of [Broken Bay](#).^[198] The 2021 Australian census found the Northern Beaches to have, in comparison with the rest of Sydney, a large British diaspora and high concentration of people with European ancestry.^[199]

As of the end of 2021, half of the 20 most expensive postcodes in Australia (by median house price) were in Northern Sydney, including four on the Northern Beaches, two on the Lower North Shore, three on the Upper North Shore, and one straddling [Hunters Hill](#) and [Woolwich](#).^[182]

Hills district

[edit]

The [Hills district](#) generally refers to the suburbs in north-western Sydney including the local government areas of [The Hills Shire](#), parts of the [City of Parramatta Council](#) and [Hornsby Shire](#). Actual suburbs and localities that are considered to be in the Hills District can be somewhat

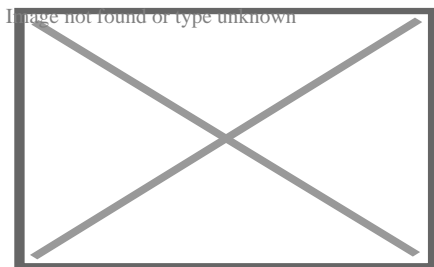
amorphous. For example, the Hills District Historical Society restricts its definition to the Hills Shire local government area, yet its study area extends from Parramatta to the Hawkesbury. The region is so named for its characteristically comparatively hilly topography as the Cumberland Plain lifts up, joining the Hornsby Plateau. [Windsor](#) and [Old Windsor Roads](#) are the second and third roads, respectively, laid in Australia.[200]

On 26 May 2019, The [Sydney Metro Northwest](#), which went from Chatswood to Tallawong, opened, with a large portion running through the Hills District, which meant the Hills District, for the first time, started having heavy rail.[201] Before this, The Hills was served by [Bus Rapid Transit](#).

Western suburbs

[[edit](#)]

Further information: [Greater Western Sydney](#)



[Parramatta](#), a major commercial centre of [Greater Western Sydney](#), is often referred to as Sydney's "second [CBD](#)"

The greater western suburbs encompasses the areas of Parramatta, the sixth largest business district in Australia, settled the same year as the harbour-side colony,[202] [Bankstown](#), [Liverpool](#), [Penrith](#), and [Fairfield](#). Covering 5,800 km² (2,200 sq mi) and having an estimated population as at 2017 of 2,288,554, western Sydney has the most [multicultural suburbs](#) in the country – [Cabramatta](#) has earned the nickname "[Little Saigon](#)" due to its [Vietnamese](#) population, [Fairfield](#) has been named "[Little Assyria](#)" for its predominant [Assyrian](#) population and [Harris Park](#) is known as "[Little India](#)" with its plurality of [Indian](#) and [Hindu population](#).[203][204][205][206] The population is predominantly of a [working class](#) background, with major employment in the [heavy industries](#) and [vocational trade](#).[207] [Toongabbie](#) is noted for being the third mainland settlement (after Sydney and Parramatta) set up after British colonisation began in 1788, although the site of the settlement is actually in the separate suburb of [Old Toongabbie](#).[208]

The western suburb of [Prospect](#), in the [City of Blacktown](#), is home to [Raging Waters](#), a [water park](#) operated by [Parques Reunidos](#).[209] [Auburn Botanic Gardens](#), a botanical garden in [Auburn](#), attracts thousands of visitors each year, including many from outside Australia.[210] The greater west also includes [Sydney Olympic Park](#), a suburb created to host the 2000 Summer Olympics, and [Sydney Motorsport Park](#), a [circuit](#) in [Eastern Creek](#).[211] [Prospect Hill](#), a historically significant ridge in the west and the only area in Sydney with ancient [volcanic activity](#),[212] is also listed on the State Heritage Register.[213]

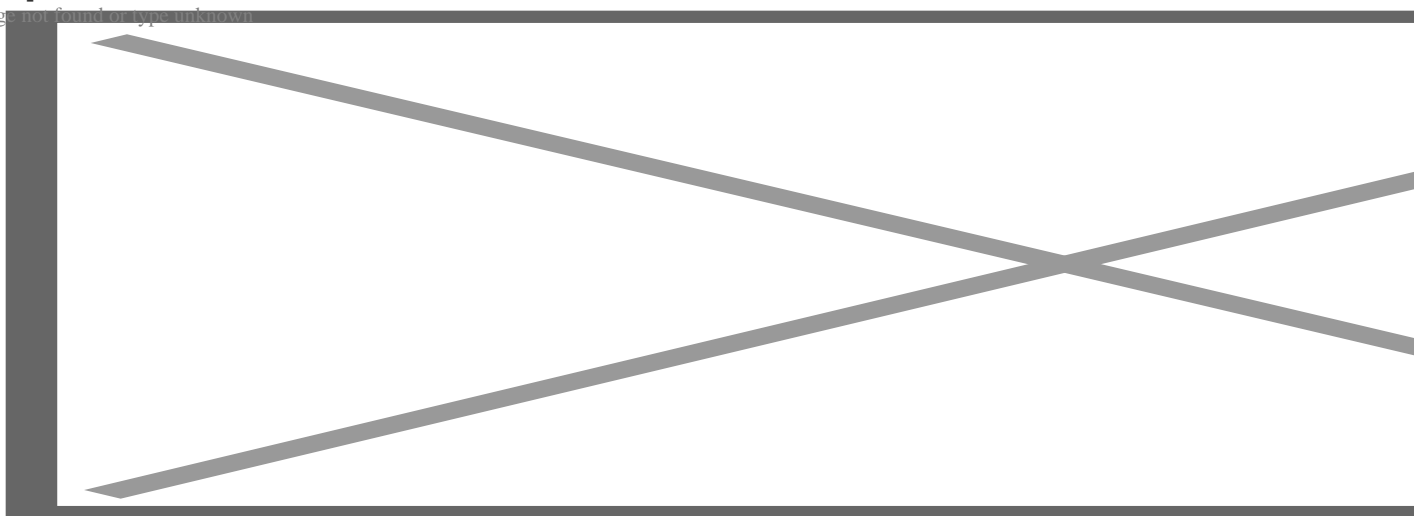
To the northwest, [Featherdale Wildlife Park](#), a zoo in [Doonside](#), near [Blacktown](#), is a major [tourist attraction](#).^[214] [Sydney Zoo](#), opened in 2019, is another prominent zoo situated in [Bungaribee](#).^[215] Established in 1799, the [Old Government House](#), a [historic house museum](#) and [tourist spot](#) in Parramatta, was included in the [Australian National Heritage List](#) on 1 August 2007 and [World Heritage List](#) in 2010 (as part of the 11 penal sites constituting the [Australian Convict Sites](#)), making it the only site in greater western Sydney to be featured in such lists.^[216] The house is Australia's oldest surviving public building.^[217]

Further to the southwest is the region of Macarthur and the city of [Campbelltown](#), a significant population centre until the 1990s considered a region separate to Sydney proper. [Macarthur Square](#), a shopping complex in Campbelltown, has become one of the largest shopping complexes in Sydney.^[218] The southwest also features [Bankstown Reservoir](#), the oldest elevated reservoir constructed in [reinforced concrete](#) that is still in use and is listed on the State Heritage Register.^[219] The southwest is home to one of Sydney's oldest trees, the [Bland Oak](#), which was planted in the 1840s by [William Bland](#) in [Carramar](#).^[220]

Urban structure

[\[edit\]](#)

Image: not found or type unknown



The [Sydney CBD](#) with the [Opera House](#) and [Harbour Bridge](#). Sydney is home to the most high-rise buildings in the nation.^[221]

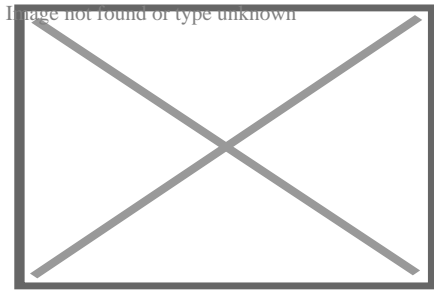
Architecture

[\[edit\]](#)

See also: [Architecture of Sydney](#), [List of heritage houses in Sydney](#), and [List of tallest buildings in Sydney](#)

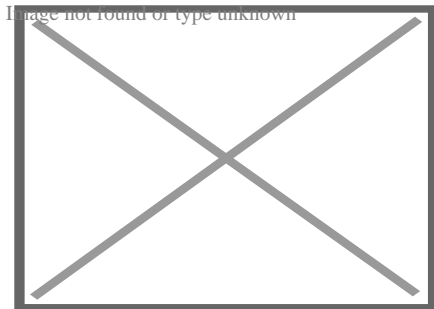
The earliest structures in the colony were built to the bare minimum of standards. Governor Macquarie set ambitious targets for the design of new construction projects. The city now has a world heritage listed building, several national heritage listed buildings, and dozens of Commonwealth heritage listed buildings as evidence of the survival of Macquarie's ideals.^[222]

223][224]



York Street is an example of a city street in Sydney with an array of intact Victorian heritage architecture.

In 1814, the Governor called on a convict named **Francis Greenway** to design **Macquarie Lighthouse**.^[225] The lighthouse's **Classical** design earned Greenway a pardon from Macquarie in 1818 and introduced a culture of refined architecture that remains to this day.^[226] Greenway went on to design the **Hyde Park Barracks** in 1819 and the **Georgian** style **St James's Church** in 1824.^{[227][228]} **Gothic-inspired architecture** became more popular from the 1830s. **John Verge's Elizabeth Bay House** and **St Philip's Church** of 1856 were built in **Gothic Revival** style along with **Edward Blore's Government House** of 1845.^{[229][230]} **Kirribilli House**, completed in 1858, and **St Andrew's Cathedral**, Australia's oldest cathedral,^[231] are rare examples of **Victorian Gothic** construction.^{[229][232]}



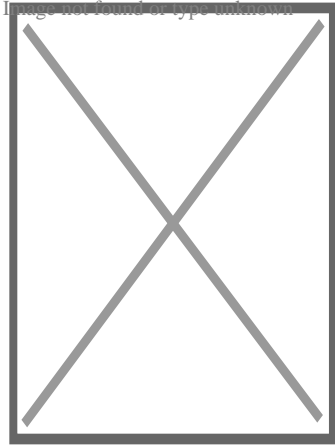
General Post Office

From the late 1850s there was a shift towards Classical architecture. **Mortimer Lewis** designed the **Australian Museum** in 1857.^[233] The **General Post Office**, completed in 1891 in **Victorian Free Classical** style, was designed by **James Barnet**.^[234] Barnet also oversaw the 1883 reconstruction of Greenway's Macquarie Lighthouse.^{[225][226]} **Customs House** was built in 1844.^[235] The neo-Classical and **French Second Empire** style **Town Hall** was completed in 1889.^[236] **Romanesque** designs gained favour from the early 1890s. **Sydney Technical College** was completed in 1893 using both Romanesque Revival and **Queen Anne** approaches.^[238] The **Queen Victoria Building** was designed in Romanesque Revival fashion by **George McRae**; completed in 1898,^[239] it accommodates 200 shops across its three storeys.^[240]

As the wealth of the settlement increased and Sydney developed into a metropolis after Federation in 1901, its buildings became taller. Sydney's first tower was Culwulla Chambers which topped out at 50 m (160 ft) making 12 floors. The Commercial Traveller's Club, built in 1908, was of similar height at 10 floors. It was built in a brick stone veneer and demolished in

1972.[241] This heralded a change in Sydney's cityscape and with the lifting of height restrictions in the 1960s there came a surge of high-rise construction.[242]

The Great Depression had a tangible influence on Sydney's architecture. New structures became more restrained with far less ornamentation. The most notable architectural feat of this period is the Harbour Bridge. Its steel arch was designed by John Bradfield and completed in 1932. A total of 39,000 tonnes of structural steel span the 503 m (1,650 ft) between Milsons Point and Dawes Point.[243][244]



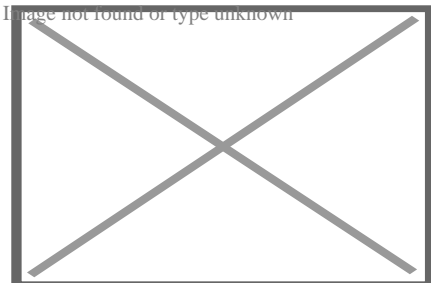
Frank Gehry's Dr Chau Chak Wing Building

Modern and International architecture came to Sydney from the 1940s. Since its completion in 1973 the city's Opera House has become a World Heritage Site and one of the world's most renowned pieces of Modern design. Jørn Utzon was awarded the Pritzker Prize in 2003 for his work on the Opera House.[245] Sydney is home to Australia's first building by renowned Canadian-American architect Frank Gehry, the Dr Chau Chak Wing Building (2015). An entrance from The Goods Line—a pedestrian pathway and former railway line—is located on the eastern border of the site.

Contemporary buildings in the CBD include Citigroup Centre,[246] Aurora Place,[247] Chifley Tower,[248][249] the Reserve Bank building,[250] Deutsche Bank Place,[251] MLC Centre,[252] and Capita Centre.[253] The tallest structure is Sydney Tower, designed by Donald Crone and completed in 1981.[254] Due to the proximity of Sydney Airport, a maximum height restriction was imposed, now sitting at 330 metres (1083 feet).[255] Green bans and heritage overlays have been in place since at least 1977 to protect Sydney's heritage after controversial demolitions in the 1970s.[256]

Housing

[edit]



Terraces in Kirribilli

Sydney surpasses both [New York City](#) and [Paris](#) real estate prices, having some of the most expensive in the world.^{[257][258]} The city remains Australia's most expensive housing market, with the median house price at \$1,595,310 as of December 2023^[259]

There were 1.83 million dwellings in Sydney in 2021 including 900,000 (54%) detached houses, 218,000 (13%) semi-detached terrace houses and 550,000 (33%) units and apartments.^[260] Whilst terrace houses are common in the inner city areas, detached houses dominate the landscape in the outer suburbs. Due to environmental and economic pressures, there has been a noted trend towards denser housing, with a 30% increase in the number of apartments between 1996 and 2006.^[261] Public housing in Sydney is managed by the [Government of New South Wales](#).^[262] Suburbs with large concentrations of public housing include [Claymore](#), [Macquarie Fields](#), [Waterloo](#), and [Mount Drutt](#).

A range of heritage housing styles can be found throughout Sydney. Terrace houses are found in the inner suburbs such as [Paddington](#), [The Rocks](#), [Potts Point](#) and [Balmain](#), many of which have been the subject of [gentrification](#).^{[263][264]} These terraces, particularly those in suburbs such as The Rocks, were historically home to Sydney's miners and labourers. In the present day, terrace houses now make up some of the most valuable real estate in the city.^[265] Surviving large mansions from the Victorian era are mostly found in the oldest suburbs, such as [Double Bay](#), [Darling Point](#), [Rose Bay](#) and [Strathfield](#).^[266]

[Federation](#) homes, constructed around the time of Federation in 1901, are located in a large number of suburbs that developed thanks to the arrival of railways in the late 19th century, such as [Penshurst](#) and [Turramurra](#), and in large-scale planned "garden suburbs" such as [Haberfield](#). Workers cottages are found in [Surry Hills](#), [Redfern](#), and Balmain. [California bungalows](#) are common in [Ashfield](#), [Concord](#), and [Beecroft](#). Larger modern homes are predominantly found in the outer suburbs, such as [Stanhope Gardens](#), [Kellyville Ridge](#), [Bella Vista](#) to the northwest, [Bossley Park](#), [Abbotsbury](#), and [Cecil Hills](#) to the west, and [Hoxton Park](#), [Harrington Park](#), and [Oran Park](#) to the southwest.^[267]

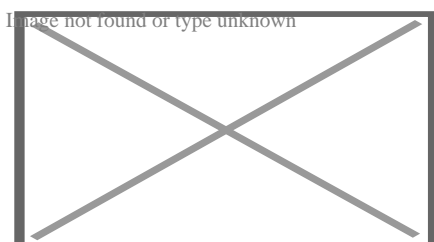
Parks and open spaces

[\[edit\]](#)

Main article: [Parks in Sydney](#)

The [Anzac War Memorial](#) in [Hyde Park](#) is a public memorial dedicated to the [Australian Imperial Force](#) of World War I.

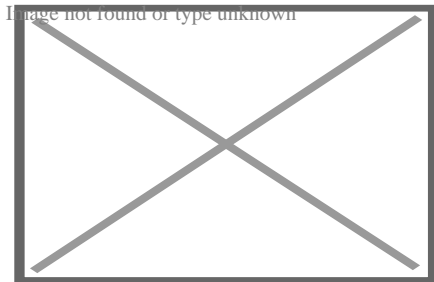
The [Royal Botanic Garden](#) is the most iconic green space in the region, hosting both scientific and leisure activities.^[268] There are 15 separate parks under the City administration.^[269] Parks within the city centre include [Hyde Park](#), [The Domain](#) and Prince Alfred Park.



The **Centennial Parklands** is the largest park in the City of Sydney, comprising 189 ha (470 acres).[270]

The **Centennial Parklands** is the largest park in the City of Sydney, comprising 189 ha (470 acres).

The inner suburbs include **Centennial Park** and **Moore Park** in the east (both within the City of Sydney local government area), while the outer suburbs contain **Sydney Park** and Royal National Park in the south, **Ku-ring-gai Chase National Park** in the north, and **Western Sydney Parklands** in the west, which is **one of the largest urban parks** in the world. The Royal National Park was proclaimed in 1879 and with 13,200 ha (51 sq mi) is the second oldest national park in the world.[271]



The **Anzac War Memorial** in **Hyde Park** is a public memorial dedicated to the achievement of the **Australian Imperial Force** of **World War I**.[272]

Hyde Park is the oldest parkland in the country.[273] The largest park in the Sydney metropolitan area is Ku-ring-gai Chase National Park, established in 1894 with an area of 15,400 ha (59 sq mi).[274] It is regarded for its well-preserved records of indigenous habitation – more than 800 rock engravings, cave drawings and middens.[275]

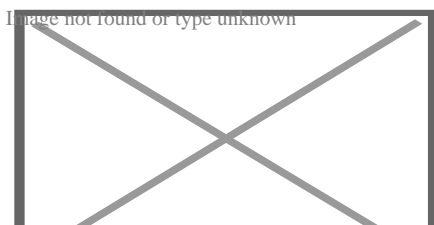
The area now known as The Domain was set aside by Governor Arthur Phillip in 1788 as his private reserve.[276] Under the orders of Macquarie the land to the immediate north of The Domain became the Royal Botanic Garden in 1816. This makes them the oldest botanic garden in Australia.[276] The Gardens host scientific research with herbarium collections, a library and laboratories.[277] The two parks have a total area of 64 ha (0.2 sq mi) with 8,900 individual plant species and receive over 3.5 million annual visits.[278]

To the south of The Domain is Hyde Park, the oldest public parkland in Australia which measures 16.2 ha (0.1 sq mi).[279] Its location was used for both relaxation and **grazing** of animals from the earliest days of the colony.[280] Macquarie dedicated it in 1810 for the "recreation and amusement of the inhabitants of the town" and named it in honour of **Hyde Park** in **London**.

Economy

[[edit](#)]

Main article: **Economy of Sydney**



The **central business district**. Sydney is the financial and economic centre of Australia, having the largest economy and contributing a quarter of Australia's total **GDP**.^[281]

Researchers from **Loughborough University** have ranked Sydney amongst the top ten world cities that are highly integrated into the global economy.^[282] The Global Economic Power Index ranks Sydney eleventh in the world.^[283] The Global Cities Index recognises it as fourteenth in the world based on global engagement.^[284] There is a significant concentration of foreign banks and multinational corporations in Sydney and the city is promoted as Australia's financial capital and one of **Asia Pacific**'s leading financial hubs.^{[285][286]}

The prevailing economic theory during early colonial days was **mercantilism**, as it was throughout most of Western Europe.^[287] The economy struggled at first due to difficulties in cultivating the land and the lack of a stable monetary system. Governor Macquarie created **two coins** from every **Spanish silver dollar** in circulation.^[287] The economy was **capitalist** in nature by the 1840s as the proportion of free settlers increased, the maritime and wool industries flourished, and the powers of the **East India Company** were curtailed.^[287]

Wheat, gold, and other minerals became export industries towards the end of the 1800s.^[287] Significant capital began to flow into the city from the 1870s to finance roads, railways, bridges, docks, courthouses, schools and hospitals. **Protectionist** policies after **federation** allowed for the creation of a manufacturing industry which became the city's largest employer by the 1920s.^[287] These same policies helped to relieve the effects of the Great Depression during which the unemployment rate in New South Wales reached as high as 32%.^[287] From the 1960s onwards Parramatta gained recognition as the city's second CBD and finance and tourism became major industries and sources of employment.^[287]

Sydney's nominal gross domestic product was AU\$400.9 billion and AU\$80,000 per capita^[288] in 2015.^{[289][286]} Its gross domestic product was AU\$337 billion in 2013, the largest in Australia.^[289] The financial and insurance services industry accounts for 18.1% of gross product, ahead of professional services with 9% and manufacturing with 7.2%. The creative and technology sectors are also focus industries for the City of Sydney and represented 9% and 11% of its economic output in 2012.^{[290][291]}

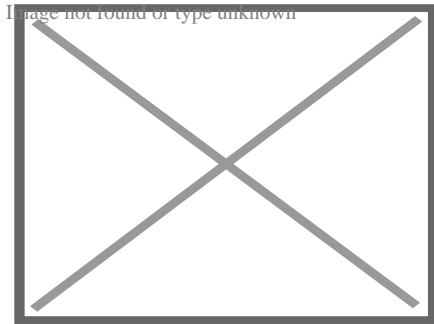
Businesses

^[edit]

There were 451,000 businesses based in Sydney in 2011, including 48% of the top 500 companies in Australia and two-thirds of the regional headquarters of multinational corporations.^[292] Global companies are attracted to the city in part because its time zone spans the closing of business in North America and the opening of business in Europe. Most foreign companies in Sydney maintain significant sales and service functions but comparably less production, research, and development capabilities.^[293] There are 283 multinational companies with regional offices in Sydney.^[294]

Domestic economics

[edit]



Pitt Street, a major street in the **CBD**, runs from **Circular Quay** in the north to **Waterloo** in the south, and is home to many large high-end retailers.[295]

Sydney has been ranked between the fifteenth and the fifth most expensive city in the world and is the most expensive city in Australia.[296] Of the 15 categories only measured by UBS in 2012, workers receive the seventh highest wage levels of 77 cities in the world.[296] Working residents of Sydney work an average of 1,846 hours per annum with 15 days of leave.[296]

The labour force of Greater Sydney Region in 2016 was 2,272,722 with a participation rate of 61.6%.[297] It comprised 61.2% full-time workers, 30.9% part-time workers, and 6.0% unemployed individuals.[260][298] The largest reported occupations are professionals, clerical and administrative workers, managers, technicians and trades workers, and community and personal service workers.[260] The largest industries by employment across Greater Sydney are Health Care and Social Assistance (11.6%), Professional Services (9.8%), Retail Trade (9.3%), Construction (8.2%), Education and Training (8.0%), Accommodation and Food Services (6.7%), and Financial and Insurance Services (6.6%).[2] The Professional Services and Financial and Insurance Services industries account for 25.4% of employment within the City of Sydney.[299]

In 2016, 57.6% of working-age residents had a weekly income of less than \$1,000 and 14.4% had a weekly income of \$1,750 or more.[300] The median weekly income for the same period was \$719 for individuals, \$1,988 for families, and \$1,750 for households.[301]

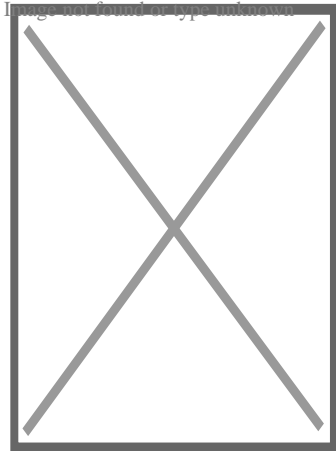
Unemployment in the City of Sydney averaged 4.6% for the decade to 2013, much lower than the current rate of unemployment in Western Sydney of 7.3%.[286][302] Western Sydney continues to struggle to create jobs to meet its population growth despite the development of commercial centres like Parramatta. Each day about 200,000 commuters travel from Western Sydney to the CBD and suburbs in the east and north of the city.[302]

Home ownership in Sydney was less common than renting prior to the Second World War but this trend has since reversed.[261] Median house prices have increased by an average of 8.6% per annum since 1970.[303][304] The median house price in March 2014 was \$630,000.[305] The primary cause of rising prices is the increasing cost of land and scarcity.[306] 31.6% of dwellings in Sydney are rented, 30.4% are owned outright and 34.8% are owned with a

mortgage.[260] 11.8% of mortgagees in 2011 had monthly loan repayments of less than \$1,000 and 82.9% had monthly repayments of \$1,000 or more.[2] 44.9% of renters for the same period had weekly rent of less than \$350 whilst 51.7% had weekly rent of \$350 or more. The median weekly rent in Sydney in 2011 was \$450.[2]

Financial services

[edit]



State Savings Bank

Macquarie gave a charter in 1817 to form the first bank in Australia, the **Bank of New South Wales**.^[307] New private banks opened throughout the 1800s but the financial system was unstable. Bank collapses were frequent and a crisis point was reached in 1893 when 12 banks failed.^[307]

The Bank of New South Wales exists to this day as **Westpac**.^[308] The Commonwealth Bank of Australia was formed in Sydney in 1911 and began to issue notes backed by the resources of the nation. It was replaced in this role in 1959 by the **Reserve Bank of Australia**, also based in Sydney.^[307] The **Australian Securities Exchange** began operating in 1987 and with a market capitalisation of \$1.6 trillion is now one of the ten largest exchanges in the world.^[309]

The Financial and Insurance Services industry now constitutes 43% of the economic product of the City of Sydney.^[285] Sydney makes up half of Australia's finance sector and has been promoted by consecutive Commonwealth Governments as **Asia Pacific's** leading financial centre.^{[20][21][310]} In the 2017 **Global Financial Centres Index**, Sydney was ranked as having the eighth most competitive financial centre in the world.^[311]

In 1985 the Federal Government granted 16 banking licences to foreign banks and now 40 of the 43 foreign banks operating in Australia are based in Sydney, including the **People's Bank of China**, **Bank of America**, **Citigroup**, **UBS**, **Mizuho Bank**, **Bank of China**, **Banco Santander**, **Credit Suisse**, **Standard Chartered**, **State Street**, **HSBC**, **Deutsche Bank**, **Barclays**, **Royal Bank of Canada**, **Société Générale**, **Royal Bank of Scotland**, **Sumitomo Mitsui**, **ING Group**, **BNP Paribas**, and **Investec**.^{[285][307][312][313]}

Manufacturing

[[edit](#)]

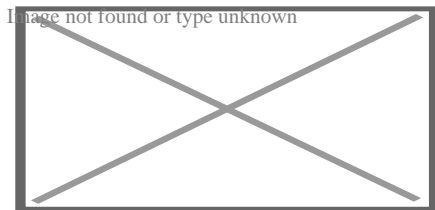
Main article: [Manufacturing in Australia](#)

Sydney has been a manufacturing city since the 1920s. By 1961 the industry accounted for 39% of all employment and by 1970 over 30% of all Australian manufacturing jobs were in Sydney.^[314] Its status has declined in recent decades, making up 12.6% of employment in 2001 and 8.5% in 2011.^{[2][314]} Between 1970 and 1985 there was a loss of 180,000 manufacturing jobs.^[314] Despite this, Sydney still overtook Melbourne as the largest manufacturing centre in Australia in the 2010s,^[315] with a manufacturing output of \$21.7 billion in 2013.^[316] Observers have credited Sydney's focus on the domestic market and high-tech manufacturing for its resilience against the high [Australian dollar](#) of the early 2010s.^[316] The *Smithfield-Wetherill Park Industrial Estate* in [Western Sydney](#) is the largest [industrial estate](#) in the Southern Hemisphere and is the centre of manufacturing and distribution in the region.^[317]

Tourism and international education

[[edit](#)]

Main article: [Tourism in Sydney](#)



[Darling Harbour](#) is a major entertainment and tourism precinct.

Sydney is a gateway to Australia for many international visitors and ranks among the top sixty most visited cities in the world.^[318] It has hosted over 2.8 million international visitors in 2013, or nearly half of all international visits to Australia. These visitors spent 59 million nights in the city and a total of \$5.9 billion.^[24] The countries of origin in descending order were China, New Zealand, the United Kingdom, the United States, South Korea, Japan, Singapore, Germany, Hong Kong, and India.^[319]

The city also received 8.3 million domestic overnight visitors in 2013 who spent a total of \$6 billion.^[319] 26,700 workers in the City of Sydney were directly employed by tourism in 2011.^[320] There were 480,000 visitors and 27,500 people staying overnight each day in 2012.^[320] On average, the tourism industry contributes \$36 million to the city's economy per day.^[320]

Popular destinations include the Sydney Opera House, the Sydney Harbour Bridge, [Watsons Bay](#), [The Rocks](#), Sydney Tower, [Darling Harbour](#), the Royal Botanic Garden, the [Australian Museum](#), the [Museum of Contemporary Art](#), the [Art Gallery of New South Wales](#), the [Queen Victoria Building](#), [Sea Life Sydney Aquarium](#), [Taronga Zoo](#), [Bondi Beach](#), [Luna Park](#) and [Sydney Olympic Park](#).^[321]

Major developmental projects designed to increase Sydney's tourism sector include a **casino and hotel** at Barangaroo and the redevelopment of **East Darling Harbour**, which involves a new **exhibition and convention centre**, now Australia's largest.^{[322][323][324]}

Sydney is the highest-ranking city in the world for international students. More than 50,000 international students study at the city's universities and a further 50,000 study at its **vocational** and English language schools.^{[284][325]} International education contributes \$1.6 billion to the local economy and creates demand for 4,000 local jobs each year.^[326]

Housing affordability

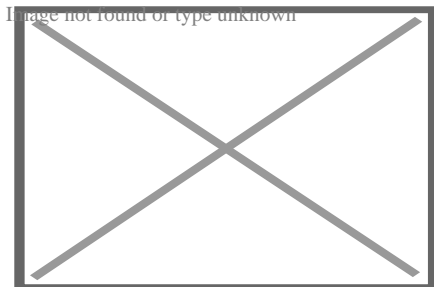
^[edit]

In 2023, Sydney was ranked the least affordable city to buy a house in Australia and the second least affordable city in the world, after Hong Kong,^[327] with the average Sydney house price in late 2023 costing A\$1.59 million, and the average unit price costing A\$795,000.^[328] As of early 2024, Sydney is often described in the media as having a housing shortage, or suffering a housing crisis.^{[329][330]}

Demographics

^[edit]

Main article: **Demographics of Sydney**



Chinese New Year celebrations in **Chinatown**. Sydney is home to the nation's largest population of **Chinese Australians**.^[331]

The population of Sydney in 1788 was less than 1,000.^[332] With convict transportation it almost tripled in ten years to 2,953.^[333] For each decade since 1961 the population has increased by more than 250,000.^[334] The 2021 census recorded the population of Greater Sydney as 5,231,150.^[1] The Australian Treasury expects the population will grow to 6.5 million in 2033–34.^[335] The four most densely populated suburbs in Australia are located in Sydney with each having more than 13,000 residents per square kilometre (33,700 residents per square mile).^[336] Between 1971 and 2018, Sydney experienced a net loss of 716,832 people to the rest of Australia, but its population grew due to overseas arrivals and a healthy birth rate.^[337]

The median age of Sydney residents is 37 and 14.8% of people are 65 or older.^[260] 48.6% of Sydney's population is married whilst 36.7% have never been married.^[260] 49.0% of families are

couples with children, 34.4% are couples without children, and 14.8% are single-parent families.[\[260\]](#)

Ancestry and immigration

[\[edit\]](#)

Country of birth (2021)[\[11\]](#)

At the 2021 census, the most common ancestries were:[\[11\]](#)

- o English (21.8%)
- o Australian (20.4%)[\[N 2\]](#)
- o Chinese (11.6%)
- o Irish (7.2%)
- o Scottish (5.6%)
- o Indian (4.9%)
- o Italian (4.3%)
- o Lebanese (3.5%)
- o Filipino (2.7%)
- o Greek (2.6%)
- o Vietnamese (2.5%)
- o German (2.2%)
- o Korean (1.4%)
- o Nepalese (1.4%)
- o Australian Aboriginal (1.4%)[\[339\]](#)
- o Maltese (1.1%)

At the 2021 census, 40.5% of Sydney's population was born overseas. Foreign countries of birth with the greatest representation are mainland China, India, England, Vietnam, Philippines and New Zealand.[\[11\]](#)

| Birthplace | [N 1] Population |
|----------------|----------------------------------|
| Australia | 2,970,737 |
| Mainland China | 238,316 |
| India | 187,810 |
| England | 153,052 |
| Vietnam | 93,778 |
| Philippines | 91,339 |
| New Zealand | 85,493 |
| Lebanon | 61,620 |
| Nepal | 59,055 |
| Iraq | 52,604 |
| South Korea | 50,702 |
| Hong Kong SAR | 46,182 |
| South Africa | 39,564 |
| Italy | 38,762 |
| Indonesia | 35,413 |
| Malaysia | 35,002 |
| Fiji | 34,197 |
| Pakistan | 31,025 |

At the 2021 census, 1.7% of Sydney's population identified as being Indigenous — Aboriginal Australians and Torres Strait Islanders.[\[N 3\]](#)[\[340\]](#)

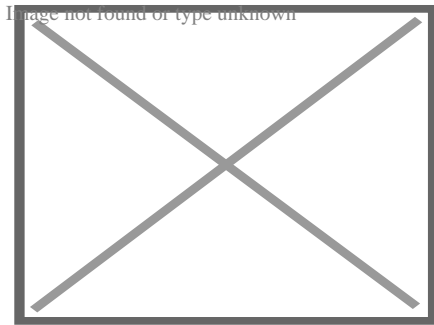
Language

[\[edit\]](#)

42% of households in Sydney use a language other than English, with the most common being Mandarin (5%), Arabic (4.2%), Cantonese (2.8%), Vietnamese (2.2%) and Hindi (1.5%).[\[340\]](#)

Religion

[\[edit\]](#)



St Mary's Cathedral is the **cathedral** church of the **Roman Catholic Archdiocese of Sydney**.

In 2021, **Christianity** was the largest religious affiliation at 46%, the largest denominations of which were **Catholicism** at 23.1% and **Anglicanism** at 9.2%. 30.3% of Sydney residents identified as having no religion. The most common non-Christian religious affiliations were **Islam** (6.3%), **Hinduism** (4.8%), **Buddhism** (3.8%), **Sikhism** (0.7%), and **Judaism** (0.7%). About 500 people identified with traditional Aboriginal religions.^[11]

The **Church of England** was the only recognised church before Governor Macquarie appointed official Catholic chaplains in 1820.^[341] Macquarie also ordered the construction of **churches** such as St Matthew's, St Luke's, St James's, and St Andrew's. Religious groups, alongside secular institutions, have played a significant role in education, health and charitable services throughout Sydney's history.^[342]

Crime

[\[edit\]](#)

Main article: **Crime in Sydney**

Crime in Sydney is low, with *The Independent* ranking Sydney as the fifth safest city in the world in 2019.^[343] However, drug use is a significant problem. Methamphetamine is heavily consumed compared to other countries, while heroin is less common.^[344] One of the biggest crime-related issues in recent times was the introduction of **lockout laws** in February 2014,^[345] in an attempt to curb alcohol-fuelled violence. Patrons could not enter clubs or bars in the inner-city after 1:30am, and last drinks were called at 3am. The lockout laws were removed in January 2020.^[346]

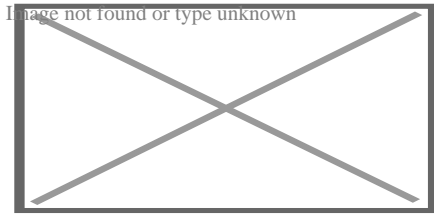
Culture

[\[edit\]](#)

Main article: **Culture of Sydney**

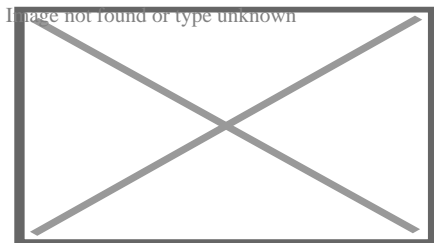
Science, art, and history

[\[edit\]](#)



The [Art Gallery of New South Wales](#), located in [The Domain](#), is the fourth largest public gallery in Australia.

[Ku-ring-gai Chase National Park](#) is rich in [Indigenous Australian](#) heritage, containing around 1,500 pieces of [Aboriginal rock art](#) – the largest cluster of Indigenous sites in Australia. The park's indigenous sites include [petroglyphs](#), art sites, [burial sites](#), [caves](#), marriage areas, birthing areas, [midden](#) sites, and tool manufacturing locations, which are dated to be around 5,000 years old. The inhabitants of the area were the [Garigal](#) people.[\[347\]](#)[\[348\]](#) Other [rock art sites](#) exist in the Sydney region, such as in [Terrey Hills](#) and [Bondi](#), although the locations of most are not publicised to prevent damage by vandalism, and to retain their quality, as they are still regarded as sacred sites by Indigenous Australians.[\[349\]](#)



The [State Library of New South Wales](#) holds the oldest library collections in Australia.

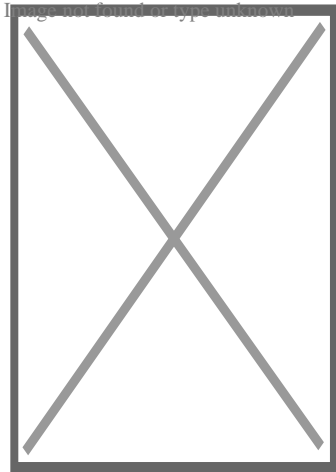
The [Australian Museum](#) opened in Sydney in 1827 with the purpose of collecting and displaying the natural wealth of the colony.[\[350\]](#) It remains Australia's oldest natural history museum. In 1995 the [Museum of Sydney](#) opened on the site of the first [Government House](#). It recounts the story of the city's development.[\[351\]](#) Other museums include the [Powerhouse Museum](#) and the [Australian National Maritime Museum](#).[\[352\]](#)[\[353\]](#)

The [State Library of New South Wales](#) holds the oldest library collections in Australia, being established as the [Australian Subscription Library](#) in 1826.[\[354\]](#) The [Royal Society of New South Wales](#), formed in 1866, encourages "studies and investigations in science, art, literature, and philosophy". It is based in a terrace house in [Darlington](#) owned by the [University of Sydney](#).[\[355\]](#) The [Sydney Observatory](#) building was constructed in 1859 and used for astronomy and meteorology research until 1982 before being converted into a museum.[\[356\]](#)

The [Museum of Contemporary Art](#) was opened in 1991 and occupies an [Art Deco](#) building in [Circular Quay](#). Its collection was founded in the 1940s by artist and art collector John Power and has been maintained by the University of Sydney.[\[357\]](#) Sydney's other significant art institution is the [Art Gallery of New South Wales](#) which coordinates the [Archibald Prize](#) for portraiture.[\[358\]](#) Sydney is also home to contemporary art gallery [Artspace](#), housed in the historic [Gunnery Building](#) in [Woolloomooloo](#), fronting [Sydney Harbour](#).[\[359\]](#)

Entertainment

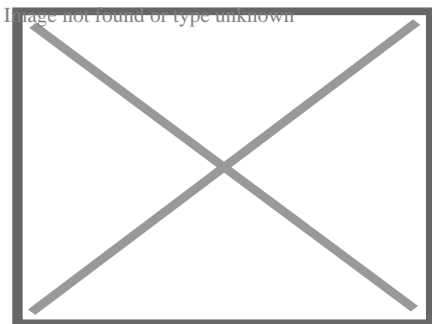
[[edit](#)]



The [State Theatre](#) on [Market Street](#) was opened in 1929.

Sydney's first commercial theatre opened in 1832 and nine more had commenced performances by the late 1920s. The live medium lost much of its popularity to the cinema during the Great Depression before experiencing a revival after World War II.^[360] Prominent theatres in the city today include [State Theatre](#), [Theatre Royal](#), [Sydney Theatre](#), [The Wharf Theatre](#), and [Capitol Theatre](#). [Sydney Theatre Company](#) maintains a roster of local, classical, and international plays. It occasionally features Australian theatre icons such as [David Williamson](#), [Hugo Weaving](#), and [Geoffrey Rush](#). The city's other prominent theatre companies are [New Theatre](#), [Belvoir](#), and [Griffin Theatre Company](#). Sydney is also home to [Event Cinemas](#)' first theatre, which opened on [George St](#) in 1913, under its former Greater Union brand; the theatre currently operates, and is regarded as one of Australia's busiest cinema locations.

The Sydney Opera House is the home of [Opera Australia](#) and [Sydney Symphony](#). It has staged over 100,000 performances and received 100 million visitors since opening in 1973.^[245] Two other important performance venues in Sydney are [Town Hall](#) and the [City Recital Hall](#). The [Sydney Conservatorium of Music](#) is located adjacent to the Royal Botanic Garden and serves the Australian music community through education and its biannual [Australian Music Examinations Board](#) exams.^[361]



A concert at the [Sydney Opera House](#)

Many writers have originated in and set their work in Sydney. Others have visited the city and commented on it. Some of them are commemorated in the [Sydney Writers Walk](#) at Circular Quay. The city was the headquarters for Australia's first published newspaper, the [Sydney Gazette](#).^[362] Watkin Tench's *A Narrative of the Expedition to Botany Bay* (1789) and *A Complete Account of the Settlement at Port Jackson in New South Wales* (1793) have remained the best-known accounts of life in early Sydney.^[363] Since the infancy of the establishment, much of the literature set in Sydney were concerned with life in the city's slums and working-class communities, notably [William Lane](#)'s *The Working Man's Paradise* (1892), [Christina Stead](#)'s *Seven Poor Men of Sydney* (1934) and [Ruth Park](#)'s *The Harp in the South* (1948).^[364] The first Australian-born female novelist, [Louisa Atkinson](#), set several novels in Sydney.^[365] Contemporary writers, such as [Elizabeth Harrower](#), were born in the city and set most of their work there—Harrower's debut novel *Down in the City* (1957) was mostly set in a [King's Cross](#) apartment.^[366]^[367]^[368] Well known contemporary novels set in the city include [Melina Marchetta](#)'s *Looking for Alibrandi* (1992), [Peter Carey](#)'s *30 Days in Sydney: A Wildly Distorted Account* (1999), [J. M. Coetzee](#)'s *Diary of a Bad Year* (2007) and [Kate Grenville](#)'s *The Secret River* (2010). The [Sydney Writers' Festival](#) is held annually between April and May.^[369]

Filmmaking in Sydney was prolific until the 1920s when spoken films were introduced and American productions gained dominance.^[370] The [Australian New Wave](#) saw a resurgence in film production, with many notable features shot in the city between the 1970s and 80s, helmed by directors such as [Bruce Beresford](#), [Peter Weir](#) and [Gillian Armstrong](#).^[371] [Fox Studios Australia](#) commenced production in Sydney in 1998. Successful films shot in Sydney since then include *The Matrix*, *Lantana*, *Mission: Impossible 2*, *Moulin Rouge!*, *Star Wars: Episode II – Attack of the Clones*, *Australia*, *Superman Returns*, *The Great Gatsby* and *Anyone but You*. The [National Institute of Dramatic Art](#) is based in Sydney and has several famous alumni such as [Mel Gibson](#), [Judy Davis](#), [Baz Luhrmann](#), [Cate Blanchett](#), [Hugo Weaving](#) and [Jacqueline McKenzie](#).^[372]

Sydney hosts several festivals throughout the year. The city's [New Year's Eve](#) celebrations are the largest in Australia.^[373] The [Royal Easter Show](#) is held every year at Sydney Olympic Park. [Sydney Festival](#) is Australia's largest arts festival.^[374] The travelling rock music festival [Big Day Out](#) originated in Sydney. The city's two largest film festivals are [Sydney Film Festival](#) and [Tropfest](#). [Vivid Sydney](#) is an annual outdoor exhibition of art installations, light projections, and music. In 2015, Sydney was ranked the 13th top [fashion capital](#) in the world.^[375] It hosts the [Australian Fashion Week](#) in autumn. [Sydney Mardi Gras](#) has commenced each February since 1979.

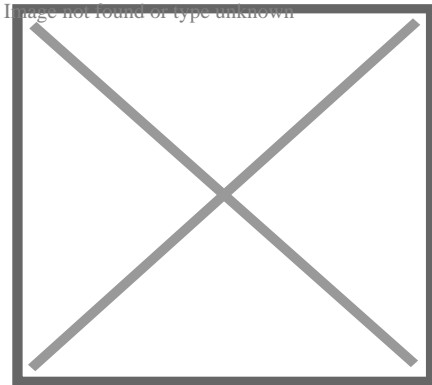
Sydney's [Chinatown](#) has had numerous locations since the 1850s. It moved from [George Street](#) to [Campbell Street](#) to its current setting in [Dixon Street](#) in 1980.^[376] [Little Italy](#) is located in [Stanley Street](#).^[287]

Restaurants, bars and nightclubs can be found in the entertainment hubs in the Sydney CBD ([Darling Harbour](#), [Barangaroo](#), [The Rocks](#) and [George Street](#)), [Oxford Street](#), [Surry Hills](#), [Newtown](#) and [Parramatta](#).^[377]^[378] [Kings Cross](#) was previously considered the red-light district. [The Star](#) is the city's casino and is situated next to [Darling Harbour](#) while the new [Crown Sydney](#) resort is in nearby [Barangaroo](#).^[379]

Media

[[edit](#)]

Main article: [Media in Sydney](#)



Australia's national broadcaster, the [ABC](#), is headquartered in [Ultimo](#).

The *[Sydney Morning Herald](#)* is Australia's oldest newspaper still in print; it has been published continuously since 1831.^[380] Its competitor is *[The Daily Telegraph](#)*, in print since 1879.^[381] Both papers have Sunday tabloid editions called *[The Sun-Herald](#)* and *[The Sunday Telegraph](#)* respectively. *[The Bulletin](#)* was founded in Sydney in 1880 and became Australia's longest running magazine. It closed after 128 years of continuous publication.^[382] Sydney heralded Australia's first newspaper, the *[Sydney Gazette](#)*, published until 1842.

Each of Australia's three commercial television networks and two public broadcasters is headquartered in Sydney. [Nine's](#) offices and news studios are in [North Sydney](#), [Ten](#) is based in [Pyrmont](#), and [Seven](#) is based in [South Eveleigh](#) in [Redfern](#).^{[383][384][385][386]} The [Australian Broadcasting Corporation](#) is located in [Ultimo](#),^[387] and the [Special Broadcasting Service](#) is based in [Artarmon](#).^[388] Multiple digital channels have been provided by all five networks since 2000. [Foxtel](#) is based in [North Ryde](#) and sells subscription cable television to most of the urban area.^[389] Sydney's first [radio stations](#) commenced broadcasting in the 1920s. Radio has managed to survive despite the introduction of television and the Internet.^[390] [2UE](#) was founded in 1925 and under the ownership of Nine Entertainment is the oldest station still broadcasting.^[390] Competing stations include the more popular [2GB](#), [ABC Radio Sydney](#), [KIIS 106.5](#), [Triple M](#), [Nova 96.9](#) and [2Day FM](#).^[391]

Sport and outdoor activities

[[edit](#)]

Main article: [Sport in Sydney](#)

Sydney's earliest migrants brought with them a passion for sport but were restricted by the lack of facilities and equipment. The first organised sports were [boxing](#), [wrestling](#), and horse racing from 1810 in [Hyde Park](#).^[392] Horse racing remains popular and events such as the [Golden Slipper Stakes](#) attract widespread attention. The first cricket club was formed in 1826 and matches were

played within Hyde Park throughout the 1830s and 1840s.[392] Cricket is a favoured sport in summer and big matches have been held at the [Sydney Cricket Ground](#) since 1878. The [New South Wales Blues](#) compete in the [Sheffield Shield](#) league and the [Sydney Sixers](#) and [Sydney Thunder](#) contest the national [Big Bash](#) Twenty20 competition.

First played in Sydney in 1865, rugby grew to be the city's most popular football code by the 1880s. One-tenth of the state's population attended a New South Wales versus New Zealand rugby match in 1907.[392] Rugby league separated from rugby union in 1908. The [New South Wales Waratahs](#) contest the [Super Rugby](#) competition, while the [Sydney Rays](#) represent the city in the [National Rugby Championship](#). The national [Wallabies](#) rugby union team competes in Sydney in international matches such as the [Bledisloe Cup](#), [Rugby Championship](#), and [World Cup](#). Sydney is home to nine of the seventeen teams in the [National Rugby League](#) competition: [Canterbury-Bankstown Bulldogs](#), [Cronulla-Sutherland Sharks](#), [Manly-Warringah Sea Eagles](#), [Penrith Panthers](#), [Parramatta Eels](#), [South Sydney Rabbitohs](#), [St George Illawarra Dragons](#), [Sydney Roosters](#), and [Wests Tigers](#). New South Wales contests the annual [State of Origin](#) series against [Queensland](#).

[Sydney FC](#) and the [Western Sydney Wanderers](#) compete in the [A-League Men](#) and [A-League Women](#) competitions. The [Sydney Swans](#) and [Greater Western Sydney Giants](#) are local [Australian rules football](#) clubs that play in the [Australian Football League](#) and the [AFL Women's](#). The [Sydney Kings](#) compete in the [National Basketball League](#). The [Sydney Uni Flames](#) play in the [Women's National Basketball League](#). The [Sydney Blue Sox](#) contest the [Australian Baseball League](#). The [NSW Pride](#) are a member of the [Hockey One League](#). The [Sydney Bears](#) and [Sydney Ice Dogs](#) play in the [Australian Ice Hockey League](#). The [Swifts](#) are competitors in the national women's netball league.

Major sporting venues

[[edit](#)]

[Stadium Australia](#)

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[Stadium Australia](#)

Sydney Cricket Ground

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Sydney Cricket Ground Western Sydney Stadium

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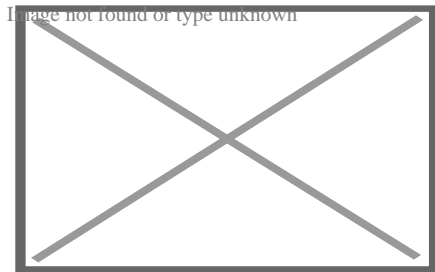
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Western Sydney Stadium Sydney Football Stadium

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Sydney Football Stadium

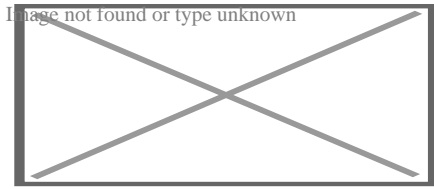


Sailing on Sydney Harbour

Women were first allowed to participate in recreational swimming when separate baths were opened at **Woolloomooloo Bay** in the 1830s. From being illegal at the beginning of the century, sea bathing gained immense popularity during the early 1900s and the first **surf lifesaving** club was established at **Bondi Beach**.^{[392][393]} **Disputes about appropriate clothing** for surf bathing surfaced occasionally and concerned men as well as women. The **City2Surf** is an annual 14 km (8.7 mi) running race from the CBD to Bondi Beach and has been held since 1971. In 2010, 80,000 runners participated which made it the largest run of its kind in the world.^[394]

Sailing races have been held on **Sydney Harbour** since 1827.^[395] Yachting has been popular amongst wealthier residents since the 1840s and the **Royal Sydney Yacht Squadron** was founded in 1862. The **Sydney to Hobart Yacht Race** is a 1,170 km (727 mi) event that starts from

Sydney Harbour on Boxing Day.[396] Since its inception in 1945 it has been recognised as one of the most difficult yacht races in the world.[397] Six sailors died and 71 vessels of 115 failed to finish in the 1998 edition.[398]



Sydney Olympic Park was built for the **2000 Olympics** and has become a major sporting and recreational precinct.

The **Royal Sydney Golf Club** is based in **Rose Bay** and since its opening in 1893 has hosted the **Australian Open** on 13 occasions.[392] **Royal Randwick Racecourse** opened in 1833 and holds several major cups throughout the year.[399]

Sydney benefitted from the construction of significant sporting infrastructure in preparation for its hosting of the 2000 Summer Olympics. The Sydney Olympic Park accommodates athletics, aquatics, tennis, hockey, archery, baseball, cycling, equestrian, and rowing facilities. It also includes the high capacity **Stadium Australia** used for rugby, soccer, and Australian rules football. The **Sydney Football Stadium** was completed in 1988 and was used for rugby and soccer matches. Sydney Cricket Ground was opened in 1878 and is used for both cricket and Australian rules football fixtures.[392]

Sydney was one of the host cities during the **2023 FIFA Women's World Cup**. Sydney Football Stadium and Stadium Australia were selected as venues, with the later hosting the **final**.[400]

The **Sydney International** tennis tournament is held here at the beginning of each year as the warm-up for **the Grand Slam in Melbourne**. Two of the most successful **tennis** players in history (**Ken Rosewall** and **Todd Woodbridge**) were born in and live in the city.

Sydney co-hosted the **FIBA Oceania Championship** in 1979, 1985, 1989, 1995, 2007, 2009 and 2011.

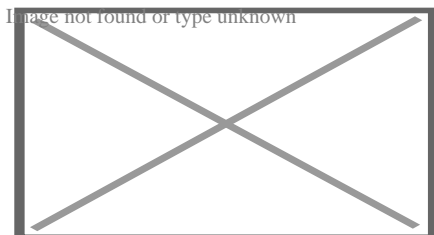
Government

[edit]

See also: **Local government areas of New South Wales**

Historical governance

[edit]



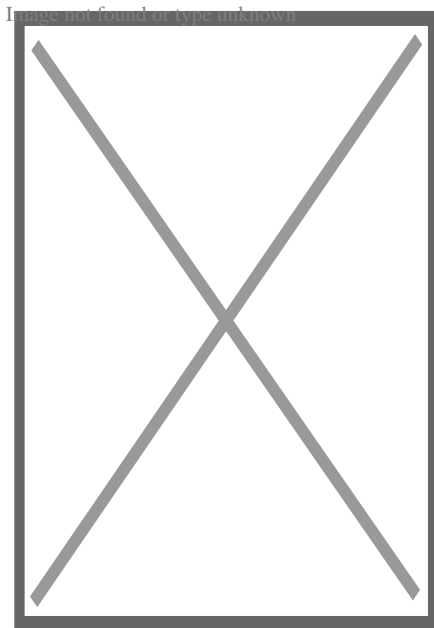
Parliament House holds the **Government of New South Wales** and is the oldest public building in Australia.

The first five governors had near autocratic power in the colony of New South Wales, subject only to the laws of England and the supervision of the Colonial Office in London. Sydney was the seat of government for the colony which encompassed over half the Australian continent.[401] The first Legislative Council met in 1826,[402] and in 1842, the imperial parliament expanded and reformed the council, making it partly elected.[403] In the same year, the town of Sydney officially became a city and an elected municipal council was established.[404][405] The council had limited powers, mostly relating to services such as street lighting and drainage.[406] Its boundaries were restricted to an area of 11.6 square kilometres, taking in the city centre and the modern suburbs of **Woolloomooloo**, **Surry Hills**, **Chippendale**, and **Pymont**. [63] As Sydney grew, other municipal councils were formed to provide local administration.[407]

In 1856, New South Wales achieved responsible government with the introduction of a bicameral parliament, based in Sydney, comprising a directly elected **Legislative Assembly** and a nominated **Legislative Council**. [408] With the federation of the Australian colonies in 1901, Sydney became the capital of the state of New South Wales and its administration was divided between the Commonwealth, State and constituent local governments.[408]

Government in the present

[edit]



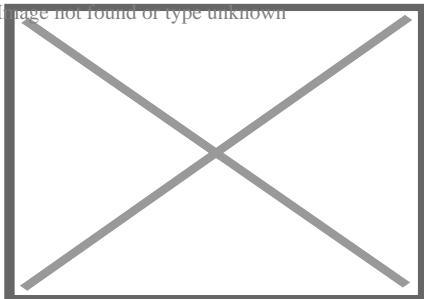
The **Sydney Town Hall** is the seat of the **City of Sydney**; the oldest **local government** in the city

In common with other Australian capital cities, Sydney has no single local government covering its whole area. **Local government areas** have responsibilities such as local roads, libraries, child care, community services and waste collection, whereas the state government retains

responsibility for main roads, traffic control, public transport, policing, education, and major infrastructure project.[409] There are 33 local government areas which are wholly or mostly within Greater Sydney as defined by the Australian Statistical Geography Standard.[96][410]

- Bayside
- Canterbury-Bankstown
- Blacktown
- Blue Mountains
- Burwood
- Camden
- Campbelltown
- Canada Bay
- Central Coast
- Cumberland
- Fairfield
- Georges River
- Hawkesbury
- The Hills
- Hornsby
- Hunter's Hill
- Inner West
- Ku-ring-gai
- Lane Cove
- Liverpool
- Mosman
- North Sydney
- Northern Beaches
- Parramatta
- Penrith
- Randwick
- Ryde
- Strathfield
- Sutherland
- Sydney
- Waverley
- Willoughby
- Wollondilly
- Woollahra

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Government House is the official residence of the **Governor of New South Wales**

Sydney is the location of the secondary official residences of the **Governor-General** and **Prime Minister** – **Admiralty House** and **Kirribilli House** respectively.[411] The **Parliament of New South Wales** sits in **Parliament House** on **Macquarie Street**. This building was completed in 1816 and first served as a hospital. The Legislative Council moved into its northern wing in 1829 and by 1852 had entirely supplanted the surgeons from their quarters.[412] Several additions have been made as the Parliament has expanded, but it retains its original **Georgian** façade.[413] **Government House** was completed in 1845 and has served as the home of 25 Governors and 5 Governors-General.[414] The **Cabinet of Australia** also **meets** in Sydney when needed.

The highest court in the state is the Supreme Court of New South Wales, located in Queen's Square.[415] The city is also the home of numerous branches of the intermediate **District Court of New South Wales** and the lower **Local Court of New South Wales**.[416]

In the past, the state has tended to resist amalgamating Sydney's more populated local government areas as merged councils could pose a threat to its governmental power.[417] Established in 1842, the City of Sydney is one such local government area and includes the CBD and some adjoining inner suburbs.[418] It is responsible for fostering development in the local area, providing local services (waste collection and recycling, libraries, parks, sporting facilities), promoting the interests of residents, supporting organisations that target the local community, and attracting and providing infrastructure for commerce, tourism, and industry.[419] The City of Sydney is led by an elected Council and **Lord Mayor**.[420]

In federal politics, Sydney was initially considered as a **possibility for Australia's capital city**; the newly created city of **Canberra** ultimately filled this role.[421] Seven Australian **Prime Ministers have been born in** Sydney, more than any other city, including first Prime Minister **Edmund Barton** and current Prime Minister **Anthony Albanese**.

Essential public emergency services are provided and managed by the State Government. Greater Sydney is served by:

- **New South Wales Police Force**
- **New South Wales Ambulance**
- **Fire and Rescue NSW**

Infrastructure

[**edit**]

Education

[**edit**]

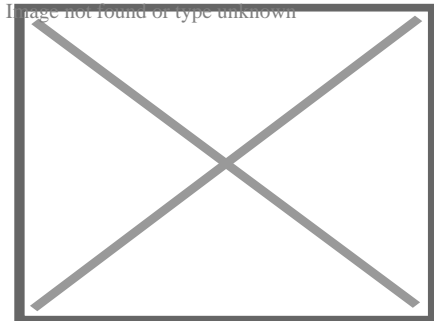
Main article: **Education in Sydney**

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The University of Sydney

Education became a focus for the colony from the 1870s when public schools began to form and schooling became compulsory.[422] By 2011, 90% of working age residents had completed some schooling and 57% had completed the highest level of school.[2] 1,390,703 people were enrolled in an educational institution in 2011 with 45.1% of these attending school and 16.5% studying at a university.[260] Undergraduate or postgraduate qualifications are held by 22.5% of working age Sydney residents and 40.2% of working age residents of the City of Sydney.[2][423] The most common fields of tertiary qualification are commerce (22.8%), engineering (13.4%), society and culture (10.8%), health (7.8%), and education (6.6%).[2]



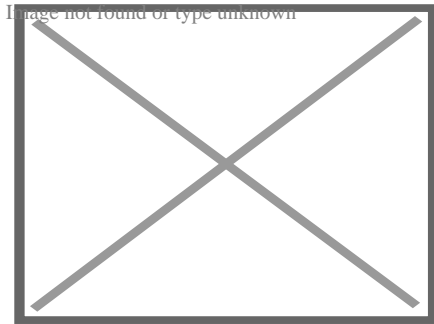
The University of Technology Sydney

There are six public universities based in Sydney: The University of Sydney, University of New South Wales, University of Technology Sydney, Macquarie University, Western Sydney University, and Australian Catholic University. Five public universities maintain secondary campuses in the city: the University of Notre Dame Australia, Central Queensland University, Victoria University, University of Wollongong, and University of Newcastle. Charles Sturt University and Southern Cross University operate secondary campuses only designated for international students. In addition, four public universities offer programs in Sydney through third-party providers: University of the Sunshine Coast, La Trobe University, Federation University Australia and Charles Darwin University. 5.2% of residents of Sydney are attending a university.[424] The University of New South Wales and the University of Sydney are ranked equal 19th in the world,[425] the University of Technology Sydney is ranked in the top 100,[425] while Macquarie University is ranked 237, and Western Sydney University is ranked 474.[426] Sydney has public, denominational, and independent schools. 7.8% of Sydney residents are attending primary school and 6.4% are enrolled in secondary school.[424] There are 935 public preschool, primary, and secondary schools in Sydney that are administered by the New South Wales Department of Education.[427] 14 of the 17 selective secondary schools in New South Wales are based in Sydney.[428]

Public vocational education and training in Sydney are run by TAFE New South Wales and began with the opening of the Sydney Technical College in 1878.[238] The college became the Sydney Institute in 1992 and now operates alongside its sister TAFE facilities across the Sydney metropolitan area, namely the Northern Sydney Institute, the Western Sydney Institute, and the South Western Sydney Institute. At the 2011 census, 2.4% of Sydney residents are enrolled in a TAFE course.[424]

Health

[\[edit\]](#)



The [Sydney Hospital](#), completed in 1816

The first hospital in the new colony was a collection of tents at [The Rocks](#). Many of the convicts that survived the trip suffered from [dysentery](#), smallpox, [scurvy](#), and [typhoid](#). Healthcare facilities remained inadequate despite the arrival of a prefabricated hospital with the [Second Fleet](#) and the construction of new hospitals at Parramatta, [Windsor](#), and [Liverpool](#) in the 1790s.^[429]

Governor Macquarie arranged for the construction of [Sydney Hospital](#), completed in 1816.^[429] Parts of the facility have been repurposed for use as [Parliament House](#) but the hospital itself still operates. The city's first emergency department was established at Sydney Hospital in 1870. Demand for emergency medical care increased from 1895 with the introduction of an ambulance service.^[429] The Sydney Hospital also housed Australia's first teaching facility for nurses, the Nightingale Wing, established with the input of [Florence Nightingale](#) in 1868.^[430]

Healthcare was recognised as a right in the early 1900s and Sydney's public hospitals came under the oversight of the Government of New South Wales.^[429] The administration of healthcare across Sydney is handled by eight local health districts: Central Coast, Illawarra Shoalhaven, Sydney, Nepean Blue Mountains, Northern Sydney, South Eastern Sydney, South Western Sydney, and Western Sydney.^[431] The [Prince of Wales Hospital](#) was established in 1852 and became the first of several major hospitals to be opened.^[432] [St Vincent's Hospital](#) was founded in 1857,^[176] followed by [Royal Alexandra Hospital for Children](#) in 1880,^[433] the [Prince Henry Hospital](#) in 1881,^[434] the [Royal Prince Alfred Hospital](#) in 1882,^[435] the [Royal North Shore Hospital](#) in 1885,^[436] the [St George Hospital](#) in 1894,^[437] and the [Nepean Hospital](#) in 1895.^[438] [Westmead Hospital](#) in 1978 was the last major facility to open.^[439]

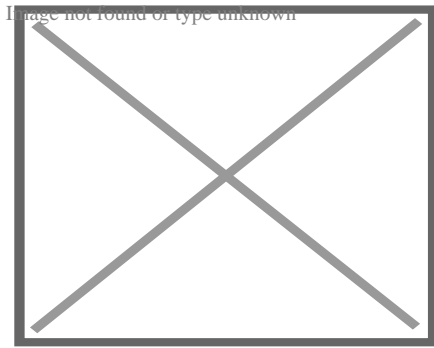
Transport

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Main article: [Transport in Sydney](#)

Roads

[[edit](#)]



Light Horse Interchange, the largest of its kind in Australia

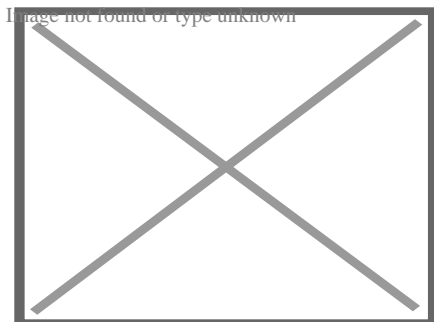
The motor vehicle, more than any other factor, has determined the pattern of Sydney's urban development since **World War II**.^[440] The growth of low-density housing in the city's outer suburbs has made car ownership necessary for hundreds of thousands of households. The percentage of trips taken by car has increased from 13% in 1947 to 50% in 1960 and 70% in 1971.^[440] The most important roads in Sydney were the nine **Metroads**, including the 110 km (68 mi) **Sydney Orbital Network**. Sydney's reliance on motor vehicles and its sprawling road network has been criticised by proponents of mass public transport and high-density housing.^{[441][442][443]} The **Light Horse Interchange** in western Sydney is the largest in the southern hemisphere.^[444]

There can be up to 350,000 cars using Sydney's roads simultaneously during peak hour, leading to significant traffic congestion.^[440] 84.9% of Sydney households own a motor vehicle and 46.5% own two or more.^[260] With a rate of 26.3% in 2014, Sydney has the highest utilisation of public transport for travel to work of any Australian capital.^[445] In contrast, in 2014 only 25.2% of working residents in the City of Sydney use a car, whilst 15.8% take a train, 13.3% use a bus, and 25.3% walk.^[446] Several significant infrastructure projects have been completed since. The CBD features a **series of alleyways and lanes** that provide **off-street** vehicular access to city buildings and as well as pedestrian routes through city buildings.^[447]

Suburban trains

[[edit](#)]

Main article: **Sydney Trains**



Central station is the busiest railway station in Australia, and the city's main public transport hub.

Established in 1906, **Central station** is the largest and busiest railway station in the state and is the main hub of the city's **rail network**.^[448] **Sydney Trains** is the **suburban rail** service. Its tracks form part of the New South Wales railway network. It serves 168 stations across the city and had an annual ridership of 302 million passenger journeys in 2023–24.^[449] Sydney's railway was first constructed in 1854 with progressive extension to the network to serve both freight and passengers. The main station is the **Central railway station** in the southern part of the CBD. In the 1850s and 1860s, the railway reached areas that are now outer suburbs of Sydney.^[440]

Metro

^[edit]

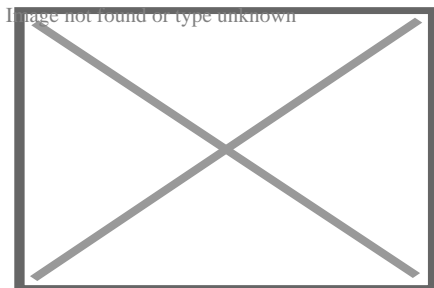
Main article: **Sydney Metro**

Sydney Metro, a driverless **rapid transit** system separate from the suburban commuter network, commenced operation in May 2019 and was extended through the city to Sydenham on 19 August 2024. This line will be extended to Bankstown in 2025 and a new line through the inner west to Parramatta is planned to be built by 2030.^[450]^[451] It currently serves 21 stations. A line to serve the greater west is planned for 2026 and will include a station for the **second international airport**.

Light rail

^[edit]

Main article: **Light rail in Sydney**



The **CBD and South East Light Rail** connects Sydney's CBD with the Eastern Suburbs.

Sydney once had one of the **largest tram networks** in the British Empire after London.^[452] It served routes covering 291 km (181 mi). The internal combustion engine made buses more flexible than trams and consequently more popular, leading to the progressive closure of the network with the final tram operating in 1961.^[440] From 1930 there were 612 buses across Sydney carrying 90 million passengers per annum.^[453]

In 1997, the [Inner West Light Rail](#) opened between Central station and [Wentworth Park](#). It was extended to [Lilyfield](#) in 2000 and then [Dulwich Hill](#) in 2014. It links the [Inner West](#) and [Darling Harbour](#) with [Central station](#) and facilitated 9.1 million journeys in the 2016–17 financial year.^[454] A second, the [CBD and South East Light Rail](#) 12 km (7.5 mi) line serving the CBD and Eastern Suburbs opened in 2019–2020.^[455] A [light rail line](#) serving Western Sydney opened in 2024.

Buses

[\[edit\]](#)

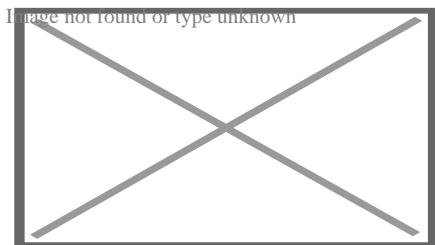
Main article: [Buses in Sydney](#)

Bus services are conducted by private operators under contract to [Transport for NSW](#). Integrated tickets called [Opal cards](#) operate on bus routes. In total, nearly 225 million boardings were recorded across the bus network.^[456] [NightRide](#) is a nightly bus service that operate between midnight and 5am.

Ferries

[\[edit\]](#)

Main articles: [Sydney Ferries](#), [List of Sydney Harbour ferries](#), and [Timeline of Sydney Harbour ferries](#)



A [Freshwater-class ferry](#) Departing [Circular Quay](#) to Manly

At the time the Sydney Harbour Bridge opened in 1932, the city's [ferry service](#) was the largest in the world.^[457] Patronage declined from 37 million passengers in 1945 to 11 million in 1963 but has recovered somewhat in recent years.^[440] From its hub at [Circular Quay](#), the [ferry network](#) extends from [Manly](#) to [Parramatta](#).^[457] Ferries in sydney are operated by [Transdev Sydney Ferries](#) and operates 10 routes.

Airports

[\[edit\]](#)

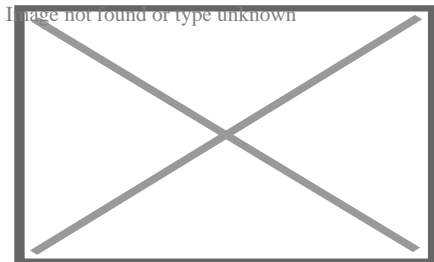
[Sydney Airport](#), officially "Sydney Kingsford-Smith Airport", is located in [Mascot](#). It services 46 international and 23 domestic destinations.^[26] As the busiest airport in Australia, it handled 37.9 million passengers in 2013 and 530,000 tonnes of freight in 2011.^[26] A second airport,

Western Sydney Airport, is under construction at **Badgerys Creek** and will open in late 2026,[458] at a cost of \$2.5 billion.[459] Notably, it will not feature a **curfew**, unlike Sydney Kingsford-Smith Airport, which imposes a suspension of all aircraft operations between 11 pm and 6 am.

Bankstown Airport is Sydney's second busiest airport, and serves general aviation, charter and some scheduled cargo flights. Bankstown is also the fourth busiest airport in Australia by number of aircraft movements.[460] **Port Botany** has surpassed Port Jackson as the city's major shipping port. Cruise ship terminals are located at **Sydney Cove** and **White Bay**.

Utilities

[edit]



Warragamba Dam is Sydney's largest water supply dam.

Obtaining sufficient fresh water was difficult during early colonial times. A catchment called the **Tank Stream** sourced water from what is now the CBD but was little more than an open sewer by the end of the 1700s.[461] The Botany Swamps Scheme was one of several ventures during the mid-1800s that saw the construction of wells, tunnels, steam pumping stations, and small dams to service Sydney's growing population.[461]

The **Upper Nepean Scheme** came into operation in 1886. It transports water 100 km (62 mi) from the **Nepean**, **Cataract**, and **Cordeaux** rivers and continues to service about 15% of Sydney's water needs.[461] Dams were built on these three rivers between 1907 and 1935.[461] In 1977 the **Shoalhaven Scheme** brought several more dams into service.[462]

The state-owned corporation **WaterNSW** now manages eleven major dams: **Warragamba**, one of the largest domestic water supply dams in the world,[463] **Woronora**, **Cataract**, **Cordeaux**, **Nepean**, **Avon**, **Wingecarribee Reservoir**, **Fitzroy Falls Reservoir**, **Tallowa**, the **Blue Mountains Dams**, and **Prospect Reservoir**. [464] Water is collected from five catchment areas covering 16,000 km² (6,178 sq mi) and total storage amounts to 2.6 TL (0.6 cu mi).[464] The **Sydney Desalination Plant** came into operation in 2010.[461] WaterNSW supplies bulk water to **Sydney Water**, a state-owned corporation that operates water distribution, sewerage and storm water management services.

Sydney's electricity infrastructure is maintained by **Ausgrid** and **Endeavour Energy**. [465][466] Their combined networks include over 815,000 poles and 83,000 km (52,000 mi) of cables. **Submarine communications cable** systems in Sydney include the **Australia–Japan Cable**, **Telstra Endeavour** and the **Southern Cross Cable**, which link Australia and countries in the Pacific.[467][468][469]

Environmental issues and pollution reduction

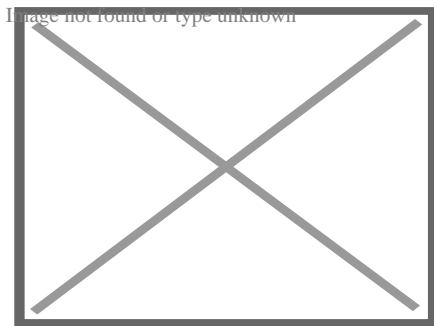
[[edit](#)]

Main article: [Environmental issues in Australia](#)

Further information: [Climate change in Australia](#) and [Renewable energy in Australia](#)

Air quality

[[edit](#)]



[George Street](#) and bushfire smoke in December 2019

As [climate change](#), [greenhouse gas emissions](#) and pollution have become a major issue for Australia, Sydney has in the past been criticised for its lack of focus on reducing pollution and emissions and maintaining [water quality](#).^[470] The release of the Metropolitan Air Quality Scheme (MAQS) led to a broader understanding of the causation of pollution in Sydney, allowing the government to form appropriate responses.^[471]

The [2019–20 Australian bushfire season](#) significantly impacted outer Sydney and dramatically reduced air quality, leading to a smoky haze that lingered for days. The [air quality](#) was 11 times the [hazardous](#) level in some days,^{[472][473]} worse than [New Delhi's](#);^[474] it was compared to "smoking 32 cigarettes" by Brian Oliver, a respiratory diseases scientist at the [University of Technology Sydney](#).^[475] Since Sydney is surrounded by bushland and forest,^[476] bushfires can ring the region in a [natural phenomena](#) that is labelled "ring of fire".^{[477][478][479][480][481]}

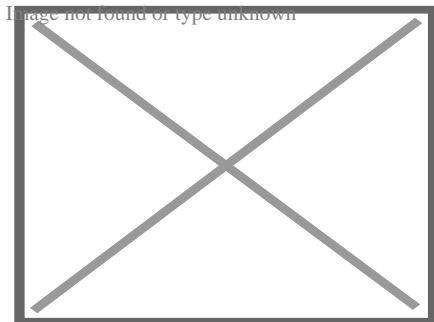
The City of Sydney became the first council in Australia to achieve formal certification as [carbon-neutral](#) in 2008.^{[482][483]} The city has reduced its 2007 carbon emissions by 6% and since 2006 has reduced carbon emissions from city buildings by up to 20%.^{[484][485]} The *Sustainable Sydney 2030* program presented a guide to reducing energy in homes and offices by 30%.^{[484][486]} Reductions in energy consumption have slashed energy bills by \$30 million a year.^[487] [Solar panels](#) have been established on many CBD buildings to minimise carbon pollution by around 3,000 tonnes a year.^[488]

The city also has an "[urban forest](#) growth strategy", in which it aims to regularly increase the [tree coverage](#) in the city by frequently planting trees with strong leaf density and [vegetation](#) to provide cleaner air and create moisture during hot weather, thus lowering city temperatures.^[489] Sydney has also become a leader in the development of [green office buildings](#) and enforcing the requirement of all building proposals to be energy-efficient. The [One Central Park](#) development,

completed in 2013, is an example of this implementation.[490][491][492][493]

Car-dependency

[[edit](#)]



Traffic congestion on the Warringah Freeway, Milsons Point

Australian cities are some of the most **car-dependent** cities in the world,[494] especially by world city standards, although Sydney's is the lowest of Australia's major cities at 66%.[495] Sydney also has the **highest usage of public transport** in an Australian city, at 27%—comparable with New York City, Shanghai and Berlin. Despite its high ranking for an Australian city, Sydney has a low level of mass-transit services, with a historically low-density layout and significant **urban sprawl**, thus increasing the likelihood of car dependency.[496][497]

Strategies have been implemented to reduce private **vehicle pollution** by encouraging **mass** and **public transit**,[498] initiating the development of high density housing and introducing a fleet of 10 new **electric cars**, the largest order of the pollution-free vehicle in Australia.[499] Electric cars do not produce carbon monoxide and **nitrous oxide**, which contribute to climate change.[500][501] **Cycling trips** increased by 113% across Sydney's inner-city from 2010 to 2015, at which point about 2,000 bikes were passing through top peak-hour intersections on an average weekday.[484] Transport developments in the **north-west** and east of the city have been designed to encourage use of the expanding public transportation system.

Sister cities

[[edit](#)]

Sister cities of Sydney include:

- **San Francisco, United States of America**
- **Wellington, New Zealand**
- **Florence, Italy**
- **Nagoya, Japan**
- **Portsmouth, United Kingdom**

See also

[[edit](#)]

- [flag New South Wales portal](#)
- [List of museums in Sydney](#)
- [List of people from Sydney](#)
- [List of public art in the City of Sydney](#)
- [List of songs about Sydney](#)
- [Outline of Sydney](#)

Notes

[[edit](#)]

- [^] In accordance with the Australian Bureau of Statistics source, [England](#), [Scotland](#), [Mainland China](#) and the Special Administrative Regions of [Hong Kong](#) and [Macau](#) are listed separately.
- [^] The Australian Bureau of Statistics has stated that most who nominate "Australian" as their ancestry are part of the [Anglo-Celtic](#) group.^[338]
- [^] Indigenous identification is separate to the ancestry question on the Australian Census and persons identifying as Aboriginal or Torres Strait Islander may identify any ancestry.

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External links

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- [Official Sydney, NSW government site](#)
- [Official Sydney tourism site](#)
- [Historical film clips of Sydney](#) on the [National Film and Sound Archive](#) of Australia's *australianscreen online*
- [Qantas Farewell Flight B747-400 Queen of the Skies – Sydney Final Flight QF747](#) on [YouTube](#) – includes a low-level joyflight around Sydney showing various aspects of the city on 13 July 2020 (starts at 05:20)
-  [Geographic data related to Sydney](#) at [OpenStreetMap](#)
- [Dictionary of Sydney – the history of Sydney](#) (Archived 24 March 2019 at the [Wayback Machine](#))
- [Sydney Official History Archives](#)
- [State Records New South Wales](#)
- [National Archives of Australia](#)
- [Understanding Society Through its Records – John Curtin Library](#)
- [Directory of Archives in Australia](#)

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Sydney

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- [Geography](#)
- [Climate](#)
 - [Severe weather](#)
- [Demographics](#)
- [Ecology](#)
- [Economy](#)
- [Transportation](#)
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Links to related articles

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[Regions of Sydney, New South Wales, Australia](#)

- Canterbury-Bankstown
- Central Business District
- Eastern Suburbs
- Forest District
- Greater Western Sydney
- Hills District
- Inner West
- Macarthur
- Northern Beaches
- Northern Suburbs
- North Shore
- Southern Sydney
- South Western Sydney
- St George

Local government areas of Sydney

- Bayside
- Blacktown
- Burwood
- Camden
- Canterbury Bankstown
- Canada Bay
- Cumberland
- Fairfield
- Georges River
- Hawkesbury
- The Hills
- Hornsby
- Hunter's Hill
- Inner West
- Ku-ring-gai
- Lane Cove
- Liverpool
- Mosman
- North Sydney
- Northern Beaches
- Parramatta
- Penrith
- Randwick
- Ryde
- Strathfield
- Sutherland
- City of Sydney
- Waverley
- Willoughby
- Woollahra

List of Sydney suburbs

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Sydney landmarks

Buildings / structures

- Admiralty House
- Archibald Fountain
- Australia Square
- Bankstown Reservoir
- Boothtown Aqueduct
- Cadmans Cottage
- Campbell's Stores
- The Cenotaph
- Central station
- Chifley Tower
- Citigroup Centre
- International Convention Centre
- Deutsche Bank Place
- Dr Chau Chak Wing Building
- El Alamein Fountain
- Finger Wharf
- General Post Office (No. 1 Martin Place)
- Government House
- Governor Phillip Tower
- Hong Kong House
- Hyde Park Barracks
- King Street Wharf
- Kirribilli House
- Long Bay
- Macquarie Lighthouse
- Mint
- Observatory
- Old Government House
- Old Mining Museum Building
- Opera House
- Overseas Passenger Terminal
- Parliament House
- Parramatta Gaol
- Regimental Square
- The Ribbon
 - IMAX Sydney
- Queen Victoria Building
- St Andrew's Cathedral
- St Mary's Cathedral
- Sydney Airport
- Sydney Tower
- The Toaster
- Town Hall
- War Memorial
- Warragamba Dam
- White Bay Cruise Terminal
- World Square
- World Tower

Bridges

- Anzac
- Captain Cook
- Gladesville
- *Glebe Island* (disused)
- Harbour
- Pyrmont
- Roseville
- Spit
- Tom Uglys

Major centres and localities

- Central Business District
- Chatswood
- Chinatown
- Kings Cross
- North Sydney
- Parramatta
- Pitt Street Mall
- The Rocks

Urban renewal projects

- Barangaroo
- Bays Precinct
- Central Park
- Darling Harbour
- Green Square
- Sydney Olympic Park
- Waterloo

Parks and nature

- Auburn Botanic Gardens
- Balaka Falls
- Balls Head Reserve
- Bents Basin
- Berowra Valley National Park
- Bicentennial Park
- Bland Oak
- Blue Mountains National Park
- Centennial Parklands
- Central Gardens Nature Reserve
- Chinese Garden of Friendship
- Cronulla sand dunes
- Cumberland State Forest
- Farm Cove
- Featherdale Wildlife Park
- Garigal National Park
- Garawarra Conservation Area
- Georges River National Park
- Heathcote National Park
- Hyde Park
- Kamay Botany Bay National Park
- Ku-ring-gai Chase
- Lane Cove National Park
- Macquarie Place
- Paddington Reservoir
- Parramatta Park
- Prospect dolerite intrusion
- Prospect Hill
- Prospect Nature Reserve
- Royal Botanic Garden
- Royal National Park
- Sydney Harbour National Park
- Sydney Park
- The Domain
- Western Sydney Parklands
 - Western Sydney Regional Park

Cultural institutions

- Art Gallery of New South Wales
- Australian Museum
- Australian National Maritime Museum
- Chau Chak Wing Museum
- Harry's Cafe de Wheels
- Manly Art Gallery and Museum
- Museum of Contemporary Art
- Museum of Sydney
- Justice and Police Museum
- Powerhouse Museum
- Sea Life Sydney Aquarium
- State Library
- Sydney Conservatorium of Music
- Sydney Zoo
- Taronga Zoo

Sport

- Australian Golf Club
- Canterbury Park Racecourse
- Dunc Gray Velodrome
- Lakes Golf Club
- Macquarie Ice Rink
- Randwick Racecourse
- Rosehill Gardens Racecourse
- Royal Sydney Golf Club
- Stadium Australia
- State Sports Centre
- Sydney Cricket Ground
- Sydney Football Stadium
- Sydney International Regatta Centre
- Sydney Motorsport Park
- Sydney Olympic Park
 - Athletic Centre
 - Aquatic Centre
 - Hockey Centre
 - Tennis Centre
 - Sydney Showground Stadium
- Warwick Farm Racecourse
- Wentworth Park
- Western Sydney International Dragway
- Western Sydney Stadium

Entertainment

- Capitol Theatre
- Crown Sydney
- Disney Studios Australia
- Entertainment Quarter
- Luna Park
- Lyric Theatre
- Plaza Theatre
- Raging Waters
- Roslyn Packer Theatre
- The Star
- State Theatre
- Sydney SuperDome
- Theatre Royal

Beaches

- Bondi
- Cronulla
- Manly
- Palm

Islands

- Bare
- Clark
- Cockatoo
- Fort Denison
- Garden
- Goat
- Rodd
- Shark
- Snapper
- Spectacle

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Theatre in Sydney

Central Sydney

- Belvoir Street Theatre
 - Belvoir
- Capitol Theatre
- Genesian Theatre
- Roslyn Packer Theatre
- Seymour Centre
- State Theatre
- Sydney Lyric
 - Foundry Theatre
- Sydney Opera House
- Theatre Royal
- Wharf Theatre

Inner West

- Carriageworks
- New Theatre
- PACT Theatre

Western Suburbs

- Riverside Theatres Parramatta
- Sydney Coliseum Theatre

North Shore

- Ensemble Theatre
- Independent Theatre
- Marian Street Theatre
- The Concourse, Chatswood

Northern Beaches

- Glen Street Theatre

Eastern Suburbs

- Darlinghurst Theatre
- Hayes Theatre
- Old Fitz Theatre
- Parade Theatre
- Stables Theatre (Griffin Theatre Company)

Former theatres

- Criterion Theatre
- Garrick Theatre
- Her Majesty's Theatre
- Minerva Theatre
- Palace Theatre
- Paris Theatre
- Phillip Street Theatre
- Plaza Theatre
- Regent Theatre
- Tivoli Theatre

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Sports teams based in **Sydney**

Australian rules football

AFL

- Sydney Swans
- Greater Western Sydney Giants

AFLW

- Sydney Swans
- Greater Western Sydney Giants

Baseball

ABL

- Sydney Blue Sox

Claxton Shield

- New South Wales Patriots

Basketball

NBL

- Sydney Kings

WNBL

- Sydney Flames

| | | |
|-------------------|--------------------------|--|
| Cricket | Sheffield Shield | |
| | Matador BBQs One Day Cup | <ul style="list-style-type: none"> ○ New South Wales Blues |
| | WNCL | <ul style="list-style-type: none"> ○ New South Wales Breakers |
| | Big Bash League | <ul style="list-style-type: none"> ○ Sydney Sixers ○ Sydney Thunder |
| | Women's Big Bash League | <ul style="list-style-type: none"> ○ Sydney Sixers ○ Sydney Thunder |
| Field hockey | AHL | <ul style="list-style-type: none"> ○ New South Wales Waratahs |
| | WAHL | <ul style="list-style-type: none"> ○ New South Wales Arrows |
| | Hockey One | <ul style="list-style-type: none"> ○ NSW Pride |
| Futsal (F-League) | | <ul style="list-style-type: none"> ○ Dural Warriors ○ East Coast Heat F.C. ○ Sydney Scorpions |
| Handball | | <ul style="list-style-type: none"> ○ Sydney University Handball Club |
| Ice hockey | AIHL | <ul style="list-style-type: none"> ○ Sydney Bears ○ Sydney Ice Dogs |
| | AWIL | <ul style="list-style-type: none"> ○ Sydney Sirens |

| | | |
|--------------|-------------|---|
| Netball | SSN | <ul style="list-style-type: none"> Giants Netball NSW Swifts |
| | ANL | <ul style="list-style-type: none"> Giants Netball Academy NNSW Waratahs |
| Rugby league | NRL | <ul style="list-style-type: none"> Canterbury-Bankstown Bulldogs Cronulla-Sutherland Sharks Manly Warringah Sea Eagles Parramatta Eels Penrith Panthers St. George Illawarra Dragons South Sydney Rabbitohs Sydney Roosters Wests Tigers |
| | NRLW | <ul style="list-style-type: none"> Canterbury-Bankstown Bulldogs Cronulla-Sutherland Sharks Parramatta Eels St. George Illawarra Dragons Sydney Roosters Wests Tigers |
| Rugby union | Super Rugby | <ul style="list-style-type: none"> New South Wales Waratahs |
| | Super W | <ul style="list-style-type: none"> New South Wales Waratahs |
| | NRC | <ul style="list-style-type: none"> Greater Sydney Rams Sydney Rays |

Soccer

A-League Men

- Macarthur FC
- Sydney FC
- Western Sydney Wanderers

A-League Women

- Sydney FC
- Western Sydney Wanderers

Water polo (ANWPL)

- Balmain Water Polo Club
- Cronulla Sharks Water Polo Club
- Drummoyne Devils
- Sydney Uni Water Polo Club
- UNSW Wests Magpies

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New South Wales

General

- Economy
- Energy
- Flag
- Geography
- Geology
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- Local Government
- Parliament
- Police
- Politics
- People
- Rail transport
- Regions
- Sport
 - Australian rules football
 - Cricket
 - Rugby league
 - Rugby union
 - Soccer
- Symbols

New South Wales

Image not found or type unknown

Sydney

- Canterbury-Bankstown
- Central Business District
- Eastern Suburbs
- Forest District
- Greater Western Sydney
- Hills District
- Inner West
- Macarthur
- Northern Beaches
- Northern Sydney
- North Shore
- Southern Sydney
- South Western Sydney
- St George

Regions

- Central Coast
- Central Tablelands
- Central West
- Far West
- Greater Blue Mountains
- Hunter
- Illawarra
- Mid North Coast
- Monaro
- New England
- North West Slopes
- Northern Rivers
- Northern Tablelands
- Orana
- Riverina
- South Coast
- South Western Slopes
- Southern Highlands
- Southern Tablelands
- Upper Hunter

Rest of state

Cities

- Sydney
- Albury
- Armidale
- Bathurst
- Blue Mountains
- Broken Hill
- Cessnock
- Coffs Harbour
- Dubbo
- Gosford
- Goulburn
- Grafton
- Griffith
- Hawkesbury
- Lake Macquarie
- Lismore
- Lithgow
- Maitland
- Newcastle
- Orange
- Queanbeyan
- Shellharbour
- Shoalhaven
- Tamworth
- Taree
- Wagga Wagga
- Wollongong

flag

New South Wales portal

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Capital cities of Australia

National and ACT
Canberra

NSW
Sydney

NT
Darwin

List of cities in Australia

- v

- **t**
- **e**

Cities of Australia

Australian Capital Territory **Canberra** (*national capital*)

- Albury
- Armidale
- Bathurst
- Broken Hill
- Cessnock
- Coffs Harbour
- Dubbo
- Gosford
- Goulburn
- Grafton
- Griffith
- Lake Macquarie
- Lismore
- Lithgow
- Maitland
- Newcastle
- Orange
- Port Macquarie
- Queanbeyan
- **Sydney**
- Tamworth
- Wagga Wagga
- Wollongong

New South Wales

Northern Territory

- **Darwin**
- Palmerston

Queensland

- **Brisbane**
- Bundaberg
- Cairns
- Caloundra
- Gladstone
- Gold Coast
- Gympie
- Hervey Bay
- Ipswich
- Mackay
- Maryborough
- Mount Isa
- Rockhampton
- Sunshine Coast
- Toowoomba
- Townsville

South Australia

- **Adelaide**
- Mount Gambier
- Murray Bridge
- Port Augusta
- Port Lincoln
- Port Pirie
- Victor Harbor
- Whyalla

Tasmania

- Burnie
- Devonport
- **Hobart**
- Launceston

Victoria

- Ararat
- Bairnsdale
- Ballarat
- Benalla
- Bendigo
- Castlemaine
- Colac
- Geelong
- Hamilton
- Horsham
- **Melbourne**
- Mildura
- Moe
- Morwell
- Portland
- Sale
- Seymour
- Shepparton
- Stawell
- Swan Hill
- Traralgon
- Wangaratta
- Warragul
- Warrnambool
- Wodonga

Western Australia

- Albany
- Bunbury
- Busselton
- Geraldton
- Kalgoorlie-Boulder
- Mandurah
- **Perth**

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Summer Olympic Games host cities

- 1896: **Greece Athens** Image not found or type unknown
- 1900: **France Paris** Image not found or type unknown
- 1904: **United States St. Louis** Image not found or type unknown
- 1908: **United Kingdom London** Image not found or type unknown
- 1912: **Sweden Stockholm** Image not found or type unknown
- 1916: **None** [c1]
- 1920: **Belgium Antwerp** Image not found or type unknown
- 1924: **France Paris** Image not found or type unknown
- 1928: **Netherlands Amsterdam** Image not found or type unknown
- 1932: **United States Los Angeles** Image not found or type unknown
- 1936: **Germany Berlin** Image not found or type unknown
- 1940: **None** [c2]
- 1944: **None** [c2]
- 1948: **United Kingdom London** Image not found or type unknown
- 1952: **Finland Helsinki** Image not found or type unknown
- 1956: **Australia Melbourne** Image not found or type unknown
- 1960: **Italy Rome** Image not found or type unknown
- 1964: **Japan Tokyo** Image not found or type unknown
- 1968: **Mexico Mexico City** Image not found or type unknown
- 1972: **West Germany Munich** Image not found or type unknown
- 1976: **Canada Montreal** Image not found or type unknown
- 1980: **Soviet Union Moscow** Image not found or type unknown
- 1984: **United States Los Angeles** Image not found or type unknown
- 1988: **South Korea Seoul** Image not found or type unknown
- 1992: **Spain Barcelona** Image not found or type unknown
- 1996: **United States Atlanta** Image not found or type unknown
- 2000: **Australia Sydney** Image not found or type unknown
- 2004: **Greece Athens** Image not found or type unknown
- 2008: **China Beijing** Image not found or type unknown
- 2012: **United Kingdom London** Image not found or type unknown
- 2016: **Brazil Rio de Janeiro** Image not found or type unknown
- 2020: **Japan Tokyo** [c3]
- 2024: **France Paris** Image not found or type unknown
- 2028: **United States Los Angeles** Image not found or type unknown
- 2032: **Australia Brisbane** Image not found or type unknown

[c1] Cancelled due to **World War I**; [c2] Cancelled due to **World War II**; [c3] Postponed to 2021 due to the **COVID-19 pandemic**

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Summer Paralympic Games host cities

- **1960:** Italy/Rome
- **1964:** Japan/Tokyo
- **1968:** Israel/Aviv
- **1972:** West Berlin/West Berlin
- **1976:** Canada/Toronto
- **1980:** Netherlands/Amsterdam
- **1984:** United States/New York City / United Kingdom/Liverpool
- **1988:** South Korea/Seoul
- **1992:** Spain/Barcelona / Spain/Madrid
- **1996:** United States/Atlanta
- **2000:** Australia/Sydney
- **2004:** Greece/Athens
- **2008:** China/Beijing
- **2012:** United Kingdom/London

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Commonwealth Games host cities

- **1930:** Canada/Winnipeg
- **1934:** England/London
- **1938:** Australia/Brisbane
- **1950:** New Zealand/Auckland
- **1954:** Canada/Vancouver
- **1958:** Wales/Cardiff
- **1962:** Australia/Melbourne
- **1966:** Jamaica/Jamaica
- **1970:** Scotland/Edinburgh
- **1974:** New Zealand/Auckland
- **1978:** Canada/Ontario
- **1982:** Australia/Brisbane
- **1986:** Scotland/Edinburgh
- **1990:** New Zealand/Auckland
- **1994:** Canada/Calgary
- **1998:** Malaysia/Kuala Lumpur
- **2002:** England/Manchester
- **2006:** Australia/Melbourne
- **2010:** India/Delhi
- **2014:** Scotland/Glasgow

Portals:

- flag New South Wales
- flag Australia

Sydney at Wikipedia's sister projects:

- Definitions from Wiktionary
- Media from Commons
- News from Wikinews
- Quotations from Wikiquote
- Texts from Wikisource
- Textbooks from Wikibooks
- Resources from Wikiversity
- Travel guides from Wikivoyage
- Data from Wikidata

Authority control databases Edit this at Wikidata

| | |
|----------------------|--|
| International | <ul style="list-style-type: none"> ◦ VIAF ◦ FAST ◦ WorldCat |
| National | <ul style="list-style-type: none"> ◦ Germany ◦ United States ◦ France ◦ BnF data ◦ Japan ◦ Czech Republic ◦ Spain ◦ Croatia ◦ Sweden ◦ Israel ◦ Catalonia |
| Geographic | <ul style="list-style-type: none"> ◦ MusicBrainz area |
| Other | <ul style="list-style-type: none"> ◦ IdRef ◦ NARA |

About World Wide Web

This article is about the global system of pages accessed via HTTP. For the worldwide computer network, see [Internet](#). For the web browser, see [WorldWideWeb](#).

"WWW" and "The Web" redirect here. For other uses, see [WWW \(disambiguation\)](#) and [The Web \(disambiguation\)](#).

World Wide Web

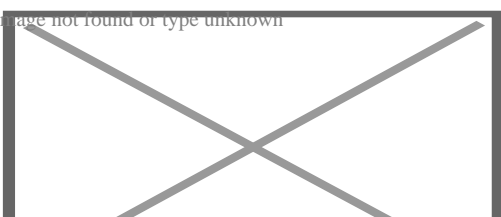
Abbreviation WWW

Year started 1989; 36 years ago by [Tim Berners-Lee](#)

Organization

- [CERN](#) (1989–1994)
- [W3C](#) (1994–current)

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A [web page](#) from [Wikipedia](#) displayed in [Google Chrome](#)

The **World Wide Web (WWW** or simply **the Web**) is an [information system](#) that enables [content](#) sharing over the [Internet](#) through user-friendly ways meant to appeal to users beyond [IT](#) specialists and hobbyists.[1] It allows documents and other [web resources](#) to be accessed over the Internet according to specific rules of the [Hypertext Transfer Protocol](#) (HTTP).[2]

The Web was invented by English computer scientist [Tim Berners-Lee](#) while at [CERN](#) in 1989 and opened to the public in 1993. It was conceived as a "universal linked information system".[3][4][5] Documents and other media content are made available to the network through [web servers](#) and can be accessed by programs such as [web browsers](#). Servers and resources on the World Wide Web are identified and located through character strings called [uniform resource locators](#) (URLs).

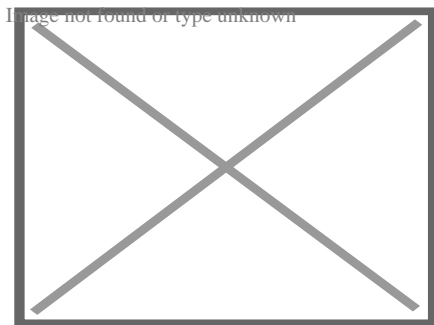
The original and still very common document type is a [web page](#) formatted in [Hypertext Markup Language](#) (HTML). This markup language supports [plain text](#), [images](#), embedded [video](#) and [audio](#) contents, and [scripts](#) (short programs) that implement complex user interaction. The HTML language also supports [hyperlinks](#) (embedded URLs) which provide immediate access to other web resources. [Web navigation](#), or web surfing, is the common practice of following such hyperlinks across multiple websites. [Web applications](#) are web pages that function as [application software](#). The information in the Web is transferred across the Internet using HTTP. Multiple web resources with a common theme and usually a common [domain name](#) make up a [website](#). A single web server may provide multiple websites, while some websites, especially the most popular ones, may be provided by multiple servers. Website content is provided by a myriad of companies, organizations, government agencies, and [individual users](#); and comprises an enormous amount of educational, entertainment, commercial, and government information.

The Web has become the world's dominant [information systems platform](#). [6][7][8][9] It is the primary tool that billions of people worldwide use to interact with the Internet.[2]

History

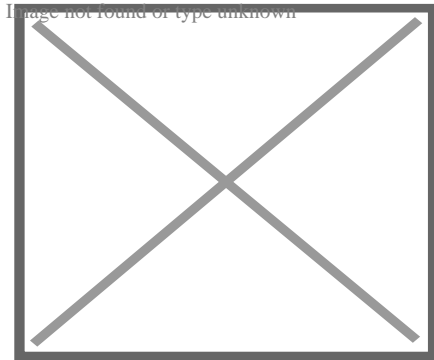
[[edit](#)]

Main article: [History of the World Wide Web](#)



This [NeXT Computer](#) was used by [Sir Tim Berners-Lee](#) at [CERN](#) and became the world's first [Web server](#).

The Web was invented by English computer scientist **Tim Berners-Lee** while working at **CERN**.^{[10][11]} He was motivated by the problem of storing, updating, and finding documents and data files in that large and constantly changing organization, as well as distributing them to collaborators outside CERN. In his design, Berners-Lee dismissed the common **tree structure** approach, used for instance in the existing CERNDOC documentation system and in the **Unix filesystem**, as well as approaches that relied in tagging files with **keywords**, as in the VAX/NOTES system. Instead he adopted concepts he had put into practice with his private **ENQUIRE** system (1980) built at CERN. When he became aware of **Ted Nelson's** **hypertext** model (1965), in which documents can be linked in unconstrained ways through **hyperlinks** associated with "hot spots" embedded in the text, it helped to confirm the validity of his concept.^{[12][13]}



The historic World Wide Web logo, designed by **Robert Cailliau**. Currently, there is no widely accepted logo in use for the WWW.

The model was later popularized by **Apple's HyperCard** system. Unlike Hypercard, Berners-Lee's new system from the outset was meant to support links between multiple databases on independent computers, and to allow simultaneous access by many users from any computer on the Internet. He also specified that the system should eventually handle other media besides text, such as graphics, speech, and video. Links could refer to mutable data files, or even fire up programs on their server computer. He also conceived "gateways" that would allow access through the new system to documents organized in other ways (such as traditional computer **file systems** or the **Usenet**). Finally, he insisted that the system should be decentralized, without any central control or coordination over the creation of links.^{[4][14][10][11]}

Berners-Lee submitted a proposal to CERN in May 1989, without giving the system a name.^[4] He got a working system implemented by the end of 1990, including a browser called **WorldWideWeb** (which became the name of the project and of the network) and **an HTTP server** running at CERN. As part of that development he defined the first version of the HTTP protocol, the basic URL syntax, and implicitly made HTML the primary document format.^[15] The technology was released outside CERN to other research institutions starting in January 1991, and then to the whole Internet on 23 August 1991. The Web was a success at CERN, and began to spread to other scientific and academic institutions. Within the next two years, **there were 50 websites created**.^{[16][17]}

CERN made the Web protocol and code available royalty free in 1993, enabling its widespread use.^{[18][19]} After the **NCSA** released the **Mosaic web browser** later that year, the Web's popularity grew rapidly as **thousands of websites** sprang up in less than a year.^{[20][21]} Mosaic

was a graphical browser that could display inline images and submit **forms** that were processed by the **HTTPd server**.^{[22][23]} **Marc Andreessen** and **Jim Clark** founded **Netscape** the following year and released the **Navigator browser**, which introduced **Java** and **JavaScript** to the Web. It quickly became the dominant browser. Netscape **became a public company** in 1995 which triggered a frenzy for the Web and started the **dot-com bubble**.^[24] Microsoft responded by developing its own browser, **Internet Explorer**, starting the **browser wars**. By bundling it with Windows, it became the dominant browser for 14 years.^[25]

Berners-Lee founded the **World Wide Web Consortium** (W3C) which created **XML** in 1996 and recommended replacing HTML with stricter **XHTML**.^[26] In the meantime, developers began exploiting an IE feature called **XMLHttpRequest** to make **Ajax** applications and launched the **Web 2.0** revolution. **Mozilla**, **Opera**, and Apple rejected XHTML and created the **WHATWG** which developed **HTML5**.^[27] In 2009, the W3C conceded and abandoned XHTML.^[28] In 2019, it ceded control of the HTML specification to the WHATWG.^[29]

The World Wide Web has been central to the development of the **Information Age** and is the primary tool billions of people use to interact on the **Internet**.^{[30][31][32][9]}

Nomenclature

[edit]



This section needs additional citations for verification. Please help **improve this article** by **adding citations to reliable sources** in this section. Unsourced material may be challenged and removed. (August 2023) (*Learn how and when to remove this message*)

Tim Berners-Lee states that *World Wide Web* is officially spelled as three separate words, each capitalised, with no intervening hyphens.^[33] Nonetheless, it is often called simply *the Web*, and also often *the web*; see **Capitalization of Internet** for details. In Mandarin Chinese, *World Wide Web* is commonly translated via a **phono-semantic matching** to *wàn wéi wǎng* (万维网), which satisfies *www* and literally means "10,000-dimensional net", a translation that reflects the design concept and proliferation of the World Wide Web.

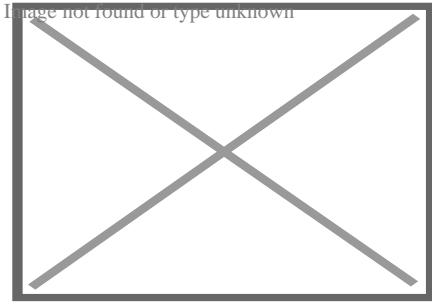
Use of the *www* prefix has been declining, especially when **web applications** sought to brand their domain names and make them easily pronounceable. As the **mobile Web** grew in popularity,^[citation needed] services like **Gmail.com**, **Outlook.com**, **Myspace.com**, **Facebook.com** and **Twitter.com** are most often mentioned without adding "www." (or, indeed, ".com") to the domain.^[34]

In English, *www* is usually read as *double-u double-u double-u*.^[35] Some users pronounce it *dub-dub-dub*, particularly in New Zealand.^[36] **Stephen Fry**, in his "Podgrams" series of podcasts, pronounces it *wuh wuh wuh*.^[37] The English writer **Douglas Adams** once quipped in *The Independent on Sunday* (1999): "The World Wide Web is the only thing I know of whose shortened form takes three times longer to say than what it's short for".^[38]

Function

[edit]

Main articles: [HTTP](#) and [HTML](#)



The World Wide Web functions as an [application layer protocol](#) that is run "on top of" (figuratively) the Internet, helping to make it more functional. The advent of the [Mosaic](#) web browser helped to make the web much more usable, to include the display of images and moving images ([GIFs](#)).

The terms *Internet* and *World Wide Web* are often used without much distinction. However, the two terms do not mean the same thing. The Internet is a global system of [computer networks](#) interconnected through telecommunications and [optical networking](#). In contrast, the World Wide Web is a global collection of documents and other [resources](#), linked by hyperlinks and [URIs](#). Web resources are accessed using [HTTP](#) or [HTTPS](#), which are application-level Internet protocols that use the Internet transport protocols.^[2]

Viewing a [web page](#) on the World Wide Web normally begins either by typing the [URL](#) of the page into a web browser or by following a hyperlink to that page or resource. The web browser then initiates a series of background communication messages to fetch and display the requested page. In the 1990s, using a browser to view web pages—and to move from one web page to another through hyperlinks—came to be known as 'browsing,' 'web surfing' (after [channel surfing](#)), or 'navigating the Web'. Early studies of this new behaviour investigated user patterns in using web browsers. One study, for example, found five user patterns: exploratory surfing, window surfing, evolved surfing, bounded navigation and targeted navigation.^[39]

The following example demonstrates the functioning of a web browser when accessing a page at the URL `http://example.org/home.html`. The browser resolves the server name of the URL (`example.org`) into an [Internet Protocol address](#) using the globally distributed [Domain Name System](#) (DNS). This lookup returns an IP address such as `203.0.113.4` or `2001:db8:2e::7334`. The browser then requests the resource by sending an [HTTP](#) request across the Internet to the computer at that address. It requests service from a specific TCP port number that is well known for the HTTP service so that the receiving host can distinguish an HTTP request from other network protocols it may be servicing. HTTP normally uses [port number 80](#) and for HTTPS it normally uses [port number 443](#). The content of the HTTP request can be as simple as two lines of text:

```
GET /home.html HTTP/1.1
```


Host: example.org

The computer receiving the HTTP request delivers it to web server software listening for requests on port 80. If the web server can fulfil the request it sends an HTTP response back to the browser indicating success:

HTTP/1.1 200 OK

Content-Type: text/html; charset=UTF-8

followed by the content of the requested page. Hypertext Markup Language (**HTML**) for a basic web page might look like this:

```
<html>
  <head>
    <title>Example.org – The World Wide Web</title>
  </head>
  <body>
    <p>The World Wide Web, abbreviated as WWW and commonly known ...</p>
  </body>
</html>
```

The web browser **parses** the HTML and interprets the markup (<title>, <p> for paragraph, and such) that surrounds the words to format the text on the screen. Many web pages use HTML to reference the URLs of other resources such as images, other embedded media, **scripts** that affect page behaviour, and **Cascading Style Sheets** that affect page layout. The browser makes additional HTTP requests to the web server for these other **Internet media types**. As it receives their content from the web server, the browser progressively **renders** the page onto the screen as specified by its HTML and these additional resources.

HTML

[**edit**]

Main article: **HTML**

Hypertext Markup Language (HTML) is the standard **markup language** for creating **web pages** and **web applications**. With **Cascading Style Sheets** (CSS) and **JavaScript**, it forms a triad of **cornerstone** technologies for the World Wide Web.[40]

Web browsers receive HTML documents from a **web server** or from local storage and **render** the documents into multimedia web pages. HTML describes the structure of a web page **semantically** and originally included cues for the appearance of the document.

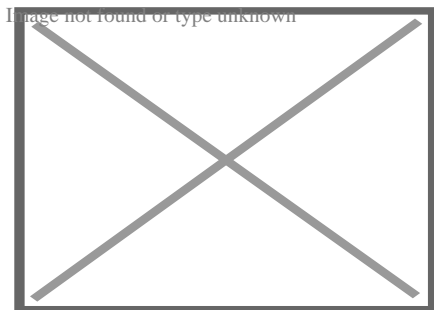
HTML elements are the building blocks of HTML pages. With HTML constructs, **images** and other objects such as **interactive forms** may be embedded into the rendered page. HTML provides a means to create **structured documents** by denoting structural **semantics** for text such as headings, paragraphs, lists, **links**, quotes and other items. HTML elements are delineated by *tags*, written using **angle brackets**. Tags such as `` and `<input />` directly introduce content into the page. Other tags such as `<p>` surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a **scripting language** such as **JavaScript**, which affects the behaviour and content of web pages. Inclusion of CSS defines the look and layout of content. The **World Wide Web Consortium** (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.[41]

Linking

[edit]

Most web pages contain hyperlinks to other related pages and perhaps to downloadable files, source documents, definitions and other web resources. In the underlying HTML, a hyperlink looks like this: `Example.org Homepage`.



Graphic representation of a minute fraction of the WWW, demonstrating **hyperlinks**

Such a collection of useful, related resources, interconnected via hypertext links is dubbed a *web* of information. Publication on the Internet created what Tim Berners-Lee first called the *WorldWideWeb* (in its original **CamelCase**, which was subsequently discarded) in November 1990.[42]

The hyperlink structure of the web is described by the **webgraph**: the nodes of the web graph correspond to the web pages (or URLs) the directed edges between them to the hyperlinks. Over time, many web resources pointed to by hyperlinks disappear, relocate, or are replaced with different content. This makes hyperlinks obsolete, a phenomenon referred to in some circles as link rot, and the hyperlinks affected by it are often called "**dead**" **links**. The ephemeral nature of the Web has prompted many efforts to archive websites. The **Internet Archive**, active since 1996, is the best known of such efforts.

WWW prefix

[\[edit\]](#)

Many hostnames used for the World Wide Web begin with *www* because of the long-standing practice of naming **Internet** hosts according to the services they provide. The **hostname** of a **web server** is often *www*, in the same way that it may be *ftp* for an **FTP server**, and *news* or *nntp* for a **Usenet news server**. These hostnames appear as Domain Name System (DNS) or **subdomain** names, as in *www.example.com*. The use of *www* is not required by any technical or policy standard and many websites do not use it; the first web server was *nxoc01.cern.ch*.^[43] According to Paolo Palazzi, who worked at CERN along with Tim Berners-Lee, the popular use of *www* as subdomain was accidental; the World Wide Web project page was intended to be published at *www.cern.ch* while *info.cern.ch* was intended to be the CERN home page; however the DNS records were never switched, and the practice of prepending *www* to an institution's website domain name was subsequently copied.^[44]^{[\[better source needed\]](#)} Many established websites still use the prefix, or they employ other subdomain names such as *www2*, *secure* or *en* for special purposes. Many such web servers are set up so that both the main domain name (e.g., *example.com*) and the *www* subdomain (e.g., *www.example.com*) refer to the same site; others require one form or the other, or they may map to different web sites. The use of a subdomain name is useful for **load balancing** incoming web traffic by creating a **CNAME record** that points to a cluster of web servers. Since, currently^{[\[as of?\]](#)}, only a subdomain can be used in a CNAME, the same result cannot be achieved by using the bare domain root.^[45]^{[\[dubious – discuss\]](#)}

When a user submits an incomplete domain name to a web browser in its address bar input field, some web browsers automatically try adding the prefix "www" to the beginning of it and possibly ".com", ".org" and ".net" at the end, depending on what might be missing. For example, entering "microsoft" may be transformed to *http://www.microsoft.com/* and "openoffice" to *http://www.openoffice.org*. This feature started appearing in early versions of **Firefox**, when it still had the working title 'Firebird' in early 2003, from an earlier practice in browsers such as **Lynx**.^[46]^{[\[unreliable source?\]](#)} It is reported that Microsoft was granted a US patent for the same idea in 2008, but only for mobile devices.^[47]

Scheme specifiers

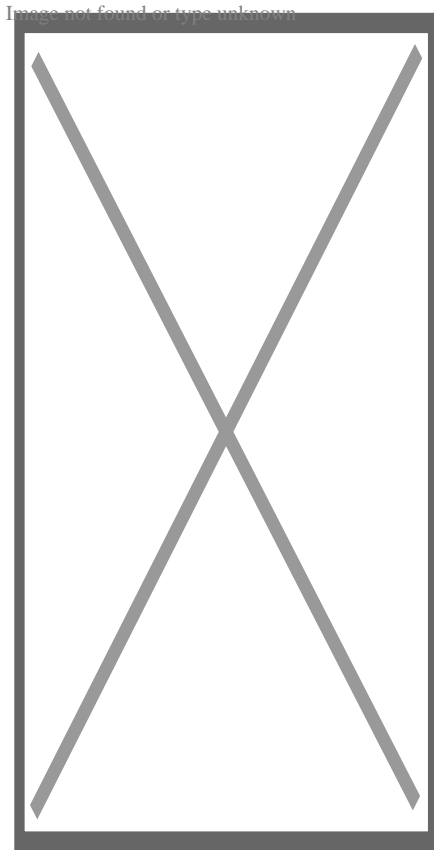
[\[edit\]](#)

The scheme specifiers *http://* and *https://* at the start of a web **URI** refer to **Hypertext Transfer Protocol** or **HTTP Secure**, respectively. They specify the communication protocol to use for the request and response. The HTTP protocol is fundamental to the operation of the World Wide Web, and the added encryption layer in HTTPS is essential when browsers send or retrieve confidential data, such as passwords or banking information. Web browsers usually automatically prepend *http://* to user-entered URIs, if omitted.

Pages

[[edit](#)]

Main article: [Web page](#)



A screenshot of the home page of Wikimedia Commons

A *web page* (also written as *webpage*) is a document that is suitable for the World Wide Web and [web browsers](#). A web browser displays a web page on a [monitor](#) or [mobile device](#).

The term *web page* usually refers to what is visible, but may also refer to the contents of the [computer file](#) itself, which is usually a [text file](#) containing [hypertext](#) written in [HTML](#) or a comparable [markup language](#). Typical web pages provide [hypertext](#) for browsing to other web pages via [hyperlinks](#), often referred to as *links*. Web browsers will frequently have to access multiple [web resource](#) elements, such as reading [style sheets](#), [scripts](#), and images, while presenting each web page.

On a network, a web browser can retrieve a web page from a remote [web server](#). The web server may restrict access to a private network such as a corporate intranet. The web browser uses the [Hypertext Transfer Protocol](#) (HTTP) to make such requests to the [web server](#).

A [static web page](#) is delivered exactly as stored, as [web content](#) in the web server's [file system](#). In contrast, a [dynamic web page](#) is generated by a [web application](#), usually driven by [server-side software](#). Dynamic web pages are used when each user may require completely different information, for example, bank websites, web email etc.

Static page

[[edit](#)]

Main article: [Static web page](#)

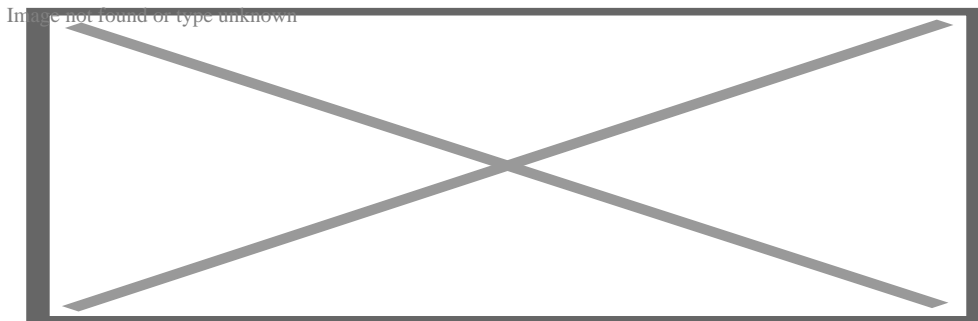
A *static web page* (sometimes called a *flat page/stationary page*) is a [web page](#) that is delivered to the user exactly as stored, in contrast to [dynamic web pages](#) which are generated by a [web application](#).

Consequently, a static web page displays the same information for all users, from all contexts, subject to modern capabilities of a [web server](#) to [negotiate content-type](#) or language of the document where such versions are available and the server is configured to do so.

Dynamic pages

[[edit](#)]

Main articles: [Dynamic web page](#) and [Ajax \(programming\)](#)



Dynamic web page: example of server-side scripting ([PHP](#) and [MySQL](#))

A *server-side dynamic web page* is a [web page](#) whose construction is controlled by an [application server](#) processing server-side scripts. In server-side scripting, [parameters](#) determine how the assembly of every new web page proceeds, including the setting up of more client-side processing.

A *client-side dynamic web page* processes the web page using JavaScript running in the browser. JavaScript programs can interact with the document via [Document Object Model](#), or DOM, to query page state and alter it. The same client-side techniques can then dynamically update or change the DOM in the same way.

A dynamic web page is then reloaded by the user or by a [computer program](#) to change some variable content. The updating information could come from the server, or from changes made to that page's DOM. This may or may not truncate the browsing history or create a saved version to go back to, but a *dynamic web page update* using [Ajax](#) technologies will neither create a page to go back to nor truncate the [web browsing history](#) forward of the displayed page. Using Ajax technologies the end [user](#) gets *one dynamic page* managed as a single page in the [web browser](#)

while the actual **web content** rendered on that page can vary. The Ajax engine sits only on the browser requesting parts of its DOM, *the* DOM, for its client, from an application server.

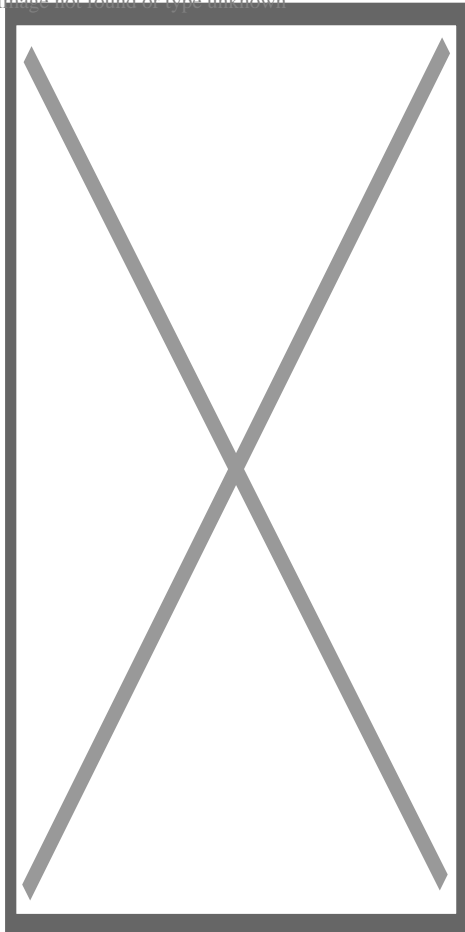
Dynamic HTML, or DHTML, is the umbrella term for technologies and methods used to create web pages that are not **static web pages**, though it has fallen out of common use since the popularization of **AJAX**, a term which is now itself rarely used.^[*citation needed*] Client-side-scripting, server-side scripting, or a combination of these make for the dynamic web experience in a browser.

JavaScript is a **scripting language** that was initially developed in 1995 by **Brendan Eich**, then of **Netscape**, for use within web pages.^[48] The standardised version is **ECMAScript**.^[48] To make web pages more interactive, some web applications also use JavaScript techniques such as **Ajax** (**asynchronous** JavaScript and **XML**). **Client-side script** is delivered with the page that can make additional HTTP requests to the server, either in response to user actions such as mouse movements or clicks, or based on elapsed time. The server's responses are used to modify the current page rather than creating a new page with each response, so the server needs only to provide limited, incremental information. Multiple Ajax requests can be handled at the same time, and users can interact with the page while data is retrieved. Web pages may also regularly **poll** the server to check whether new information is available.^[49]

Website

[**edit**]

Image not found or type unknown



The [usap.gov](https://www.usap.gov) website

Main article: [Website](#)

A *website*^[50] is a collection of related web resources including [web pages](#), [multimedia](#) content, typically identified with a common [domain name](#), and published on at least one [web server](#). Notable examples are [wikipedia.org](https://www.wikipedia.org), [google.com](https://www.google.com), and [amazon.com](https://www.amazon.com).

A website may be accessible via a public [Internet Protocol](#) (IP) network, such as the [Internet](#), or a private [local area network](#) (LAN), by referencing a [uniform resource locator](#) (URL) that identifies the site.

Websites can have many functions and can be used in various fashions; a website can be a [personal website](#), a corporate website for a company, a government website, an organization website, etc. Websites are typically dedicated to a particular topic or purpose, ranging from entertainment and [social networking](#) to providing news and education. All publicly accessible websites collectively constitute the World Wide Web, while private websites, such as a company's website for its employees, are typically a part of an [intranet](#).

Web pages, which are the building blocks of websites, are [documents](#), typically composed in [plain text](#) interspersed with [formatting instructions](#) of Hypertext Markup Language ([HTML](#), [XHTML](#)). They may incorporate elements from other websites with suitable [markup anchors](#). Web pages are accessed and transported with the [Hypertext Transfer Protocol](#) (HTTP), which may optionally employ encryption ([HTTP Secure](#), HTTPS) to provide security and privacy for the user. The user's application, often a [web browser](#), renders the page content according to its HTML markup instructions onto a [display terminal](#).

[Hyperlinking](#) between web pages conveys to the reader the [site structure](#) and guides the navigation of the site, which often starts with a [home page](#) containing a directory of the site [web content](#). Some websites require user registration or [subscription](#) to access content. Examples of [subscription websites](#) include many business sites, news websites, [academic journal](#) websites, gaming websites, file-sharing websites, [message boards](#), web-based [email](#), [social networking](#) websites, websites providing real-time price quotations for different types of markets, as well as sites providing various other services. [End users](#) can access websites on a range of devices, including [desktop](#) and [laptop computers](#), [tablet computers](#), [smartphones](#) and [smart TVs](#).

Browser

[[edit](#)]

Main article: [Web browser](#)

A *web browser* (commonly referred to as a *browser*) is a [software user agent](#) for accessing information on the World Wide Web. To connect to a website's [server](#) and display its pages, a user needs to have a web browser program. This is the program that the user runs to download, format, and display a web page on the user's computer.

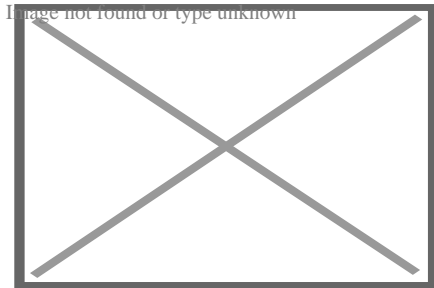
In addition to allowing users to find, display, and move between web pages, a web browser will usually have features like keeping bookmarks, recording history, managing cookies (see below), and home pages and may have facilities for recording passwords for logging into websites.

The most popular browsers are [Chrome](#), [Safari](#), [Edge](#), [Samsung Internet](#) and [Firefox](#).^[51]

Server

[\[edit\]](#)

Main article: [Web server](#)

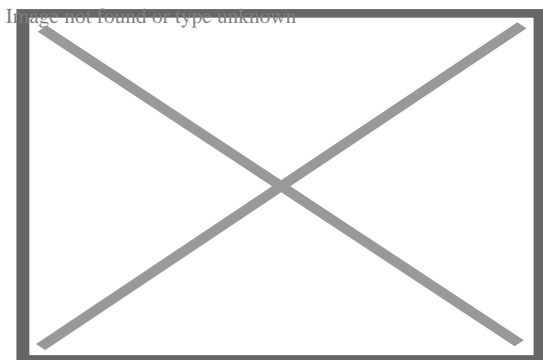


The inside and front of a [Dell PowerEdge](#) web server, a computer designed for [rack mounting](#)

A *Web server* is [server software](#), or hardware dedicated to running said software, that can satisfy World Wide Web client requests. A web server can, in general, contain one or more websites. A web server processes incoming network requests over [HTTP](#) and several other related protocols.

The primary function of a web server is to store, process and deliver [web pages](#) to [clients](#).^[52]

The communication between client and server takes place using the [Hypertext Transfer Protocol \(HTTP\)](#). Pages delivered are most frequently [HTML documents](#), which may include [images](#), [style sheets](#) and [scripts](#) in addition to the text content.



Multiple web servers may be used for a high traffic website; here, [Dell](#) servers are installed together to be used for the [Wikimedia Foundation](#).

A [user agent](#), commonly a [web browser](#) or [web crawler](#), initiates communication by making a [request](#) for a specific resource using HTTP and the server responds with the content of that resource or an [error message](#) if unable to do so. The resource is typically a real file on the

server's **secondary storage**, but this is not necessarily the case and depends on how the webserver is **implemented**.

While the primary function is to serve content, full implementation of HTTP also includes ways of receiving content from clients. This feature is used for submitting **web forms**, including **uploading** of files.

Many generic web servers also support **server-side scripting** using **Active Server Pages** (ASP), **PHP** (Hypertext Preprocessor), or other **scripting languages**. This means that the behaviour of the webserver can be scripted in separate files, while the actual server software remains unchanged. Usually, this function is used to generate HTML documents **dynamically** ("on-the-fly") as opposed to returning **static documents**. The former is primarily used for retrieving or modifying information from **databases**. The latter is typically much faster and more easily **cached** but cannot deliver **dynamic content**.

Web servers can also frequently be found **embedded** in devices such as **printers**, **routers**, **webcams** and serving only a **local network**. The web server may then be used as a part of a system for monitoring or administering the device in question. This usually means that no additional software has to be installed on the client computer since only a web browser is required (which now is included with most **operating systems**).

Optical Networking

[**edit**]

Optical networking is a sophisticated infrastructure that utilizes optical fiber to transmit data over long distances, connecting countries, cities, and even private residences. The technology uses optical microsystems like **tunable lasers**, filters, **attenuators**, switches, and wavelength-selective switches to manage and operate these networks.[53][54]

The large quantity of optical fiber installed throughout the world at the end of the twentieth century set the foundation of the Internet as it's used today. The information highway relies heavily on optical networking, a method of sending messages encoded in light to relay information in various telecommunication networks.[55]

The **Advanced Research Projects Agency Network** (ARPANET) was one of the first iterations of the Internet, created in collaboration with universities and researchers 1969.[56][57][58][59] However, access to the ARPANET was limited to researchers, and in 1985, the **National Science Foundation** founded the **National Science Foundation Network** (NSFNET), a program that provided supercomputer access to researchers.[59]

Limited public access to the Internet led to pressure from consumers and corporations to privatize the network. In 1993, the US passed the **National Information Infrastructure Act**, which dictated that the National Science Foundation must hand over control of the optical capabilities to commercial operators.[60][61]

The privatization of the Internet and the release of the World Wide Web to the public in 1993 led to an increased demand for Internet capabilities. This spurred developers to seek solutions to reduce the time and cost of laying new fiber and increase the amount of information that can be sent on a single fiber, in order to meet the growing needs of the public.[62][63][64][65]

In 1994, Pirelli S.p.A.'s optical components division introduced a wavelength-division multiplexing (WDM) system to meet growing demand for increased data transmission. This four-channel WDM technology allowed more information to be sent simultaneously over a single optical fiber, effectively boosting network capacity.[66][67]

Pirelli wasn't the only company that developed a WDM system; another company, the **Ciena Corporation** (Ciena), created its own technology to transmit data more efficiently. **David Huber**, an optical networking engineer and entrepreneur **Kevin Kimberlin** founded Ciena in 1992.[68][69][70] Drawing on laser technology from **Gordon Gould** and William Culver of **Optelecom, Inc.**, the company focused on utilizing optical amplifiers to transmit data via light.[71][72][73] Under chief executive officer Pat Nettles, Ciena developed a dual-stage optical amplifier for dense wavelength-division multiplexing (DWDM), patented in 1997 and deployed on the Sprint network in 1996.[74][75][76][77][78]

Cookie

[edit]

Main article: **HTTP cookie**

An *HTTP cookie* (also called *web cookie*, *Internet cookie*, *browser cookie*, or simply *cookie*) is a small piece of data sent from a website and stored on the user's computer by the user's **web browser** while the user is browsing. Cookies were designed to be a reliable mechanism for websites to remember **stateful** information (such as items added in the shopping cart in an online store) or to record the user's browsing activity (including clicking particular buttons, **logging in**, or recording which pages were visited in the past). They can also be used to remember arbitrary pieces of information that the user previously entered into form fields such as names, addresses, passwords, and credit card numbers.

Cookies perform essential functions in the modern web. Perhaps most importantly, *authentication cookies* are the most common method used by web servers to know whether the user is logged in or not, and which account they are logged in with. Without such a mechanism, the site would not know whether to send a page containing sensitive information or require the user to authenticate themselves by logging in. The security of an authentication cookie generally depends on the security of the issuing website and the user's **web browser**, and on whether the cookie data is encrypted. Security vulnerabilities may allow a cookie's data to be read by a **hacker**, used to gain access to user data, or used to gain access (with the user's credentials) to the website to which the cookie belongs (see **cross-site scripting** and **cross-site request forgery** for examples).[79]

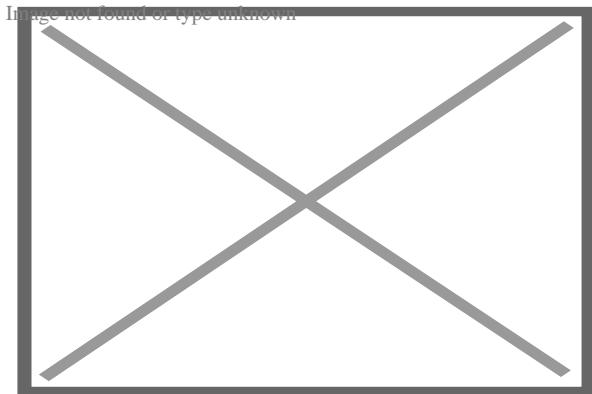
Tracking cookies, and especially third-party tracking cookies, are commonly used as ways to compile long-term records of individuals' browsing histories – a potential **privacy concern** that prompted European[80] and U.S. lawmakers to take action in 2011.[81][82] European law requires that all websites targeting **European Union** member states gain "informed consent" from users before storing non-essential cookies on their device.

Google **Project Zero** researcher Jann Horn describes ways cookies can be read by **intermediaries**, like **Wi-Fi** hotspot providers. When in such circumstances, he recommends using the browser in **private browsing** mode (widely known as **Incognito mode** in Google Chrome).[83]

Search engine

[**edit**]

Main article: **Search engine**



The results of a search for the term "lunar eclipse" in a web-based **image search** engine

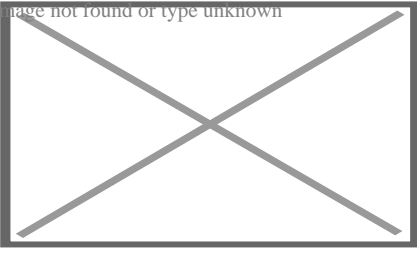
A *web search engine* or *Internet search engine* is a **software system** that is designed to carry out *web search* (*Internet search*), which means to search the World Wide Web in a systematic way for particular information specified in a **web search query**. The search results are generally presented in a line of results, often referred to as **search engine results pages** (SERPs). The information may be a mix of **web pages**, images, videos, infographics, articles, research papers, and other types of files. Some search engines also **mine data** available in **databases** or **open directories**. Unlike **web directories**, which are maintained only by human editors, search engines also maintain **real-time** information by running an **algorithm** on a **web crawler**. Internet content that is not capable of being searched by a web search engine is generally described as the **deep web**.

In 1990, **Archie**, the world's first search engine, was released. The technology was originally an index of **File Transfer Protocol** (FTP) sites, which was a method for moving files between a client and a server network.[84][85] This early search tool was superseded by more advanced engines like **Yahoo!** in 1995 and **Google** in 1998.[86][87]

Deep web

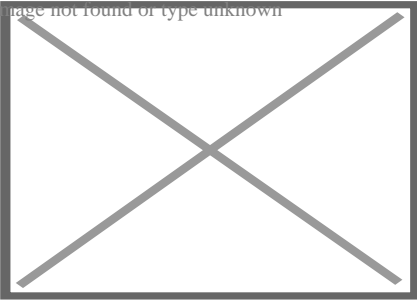
[\[edit\]](#)

Image not found or type unknown



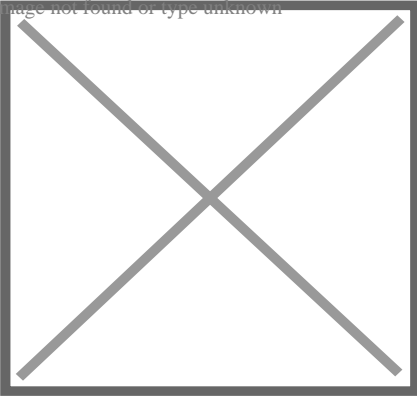
Deep web diagram

Image not found or type unknown



Deep web vs surface web

Image not found or type unknown



Surface Web & Deep Web

Main article: [Deep web](#)

The deep web,^[88] *invisible web*,^[89] or *hidden web*^[90] are parts of the World Wide Web whose contents are not [indexed](#) by standard [web search engines](#). The opposite term to the deep web is the [surface web](#), which is accessible to anyone using the Internet.^[91] [Computer scientist](#) Michael K. Bergman is credited with coining the term *deep web* in 2001 as a search indexing term.^[92]

The content of the deep web is hidden behind [HTTP](#) forms,^{[93][94]} and includes many very common uses such as [web mail](#), [online banking](#), and services that users must pay for, and which is protected by a [paywall](#), such as [video on demand](#), some online magazines and newspapers, among others.

The content of the deep web can be located and accessed by a direct [URL](#) or [IP address](#) and may require a password or other security access past the public website page.

Caching

[edit]

A **web cache** is a server computer located either on the public Internet or within an enterprise that stores recently accessed web pages to improve response time for users when the same content is requested within a certain time after the original request. Most web browsers also implement a **browser cache** by writing recently obtained data to a local data storage device. HTTP requests by a browser may ask only for data that has changed since the last access. Web pages and resources may contain expiration information to control caching to secure sensitive data, such as in **online banking**, or to facilitate frequently updated sites, such as news media. Even sites with highly dynamic content may permit basic resources to be refreshed only occasionally. Web site designers find it worthwhile to collate resources such as CSS data and JavaScript into a few site-wide files so that they can be cached efficiently. Enterprise **firewalls** often cache Web resources requested by one user for the benefit of many users. Some **search engines** store cached content of frequently accessed websites.

Security

[edit]

For **criminals**, the Web has become a venue to spread **malware** and engage in a range of **cybercrime**, including (but not limited to) **identity theft**, **fraud**, **espionage**, and **intelligence gathering**.^[95] Web-based **vulnerabilities** now outnumber traditional computer security concerns,^{[96][97]} and as measured by **Google**, about one in ten web pages may contain malicious code.^[98] Most web-based **attacks** take place on legitimate websites, and most, as measured by **Sophos**, are hosted in the United States, China and Russia.^[99] The most common of all malware **threats** is **SQL injection** attacks against websites.^[100] Through HTML and URIs, the Web was vulnerable to attacks like **cross-site scripting** (XSS) that came with the introduction of JavaScript^[101] and were exacerbated to some degree by **Web 2.0** and Ajax **web design** that favours the use of scripts.^[102] In one 2007 estimate, 70% of all websites are open to XSS attacks on their users.^[103] **Phishing** is another common threat to the Web. In February 2013, RSA (the security division of EMC) estimated the global losses from phishing at \$1.5 billion in 2012.^[104] Two of the well-known phishing methods are Covert Redirect and Open Redirect.

Proposed solutions vary. Large security companies like **McAfee** already design governance and compliance suites to meet post-9/11 regulations,^[105] and some, like **Finjan Holdings** have recommended active real-time inspection of programming code and all content regardless of its source.^[95] Some have argued that for enterprises to see Web security as a business opportunity rather than a **cost centre**,^[106] while others call for "ubiquitous, always-on **digital rights management**" enforced in the infrastructure to replace the hundreds of companies that secure data and networks.^[107] **Jonathan Zittrain** has said users sharing responsibility for computing safety is far preferable to locking down the Internet.^[108]

Privacy

[edit]

Main article: [Internet privacy](#)

Every time a client requests a web page, the server can identify the request's [IP address](#). Web servers usually log IP addresses in a [log file](#). Also, unless set not to do so, most web browsers record requested web pages in a viewable *history* feature, and usually [cache](#) much of the content locally. Unless the server-browser communication uses HTTPS encryption, web requests and responses travel in plain text across the Internet and can be viewed, recorded, and cached by intermediate systems. Another way to hide [personally identifiable information](#) is by using a [virtual private network](#). A VPN [encrypts](#) traffic between the client and VPN server, and masks the original IP address, lowering the chance of user identification.

When a web page asks for, and the user supplies, personally identifiable information—such as their real name, address, e-mail address, etc. web-based entities can associate current web traffic with that individual. If the website uses [HTTP cookies](#), username, and password authentication, or other tracking techniques, it can relate other web visits, before and after, to the identifiable information provided. In this way, a web-based organization can develop and build a profile of the individual people who use its site or sites. It may be able to build a record for an individual that includes information about their leisure activities, their shopping interests, their profession, and other aspects of their [demographic profile](#). These profiles are of potential interest to marketers, advertisers, and others. Depending on the website's [terms and conditions](#) and the local laws that apply information from these profiles may be sold, shared, or passed to other organizations without the user being informed. For many ordinary people, this means little more than some unexpected emails in their inbox or some uncannily relevant advertising on a future web page. For others, it can mean that time spent indulging an unusual interest can result in a deluge of further targeted marketing that may be unwelcome. Law enforcement, counterterrorism, and espionage agencies can also identify, target, and track individuals based on their interests or proclivities on the Web.

[Social networking](#) sites usually try to get users to use their real names, interests, and locations, rather than pseudonyms, as their executives believe that this makes the social networking experience more engaging for users. On the other hand, uploaded photographs or unguarded statements can be identified to an individual, who may regret this exposure. Employers, schools, parents, and other relatives may be influenced by aspects of social networking profiles, such as text posts or digital photos, that the posting individual did not intend for these audiences. [Online bullies](#) may make use of personal information to harass or [stalk](#) users. Modern social networking websites allow fine-grained control of the privacy settings for each posting, but these can be complex and not easy to find or use, especially for beginners.^[109] Photographs and videos posted onto websites have caused particular problems, as they can add a person's face to an online profile. With modern and potential [facial recognition technology](#), it may then be possible to relate that face with other, previously anonymous, images, events, and scenarios that have been imaged elsewhere. Due to image caching, mirroring, and copying, it is difficult to remove an image from the World Wide Web.

Standards

[\[edit\]](#)

Main article: [Web standards](#)

Web standards include many interdependent standards and specifications, some of which govern aspects of the [Internet](#), not just the World Wide Web. Even when not web-focused, such standards directly or indirectly affect the development and administration of websites and [web services](#). Considerations include the [interoperability](#), [accessibility](#) and [usability](#) of web pages and web sites.

Web standards, in the broader sense, consist of the following:

- *Recommendations* published by the [World Wide Web Consortium](#) (W3C)[110]
- "Living Standard" made by the [Web Hypertext Application Technology Working Group](#) (WHATWG)
- *Request for Comments* (RFC) documents published by the [Internet Engineering Task Force](#) (IETF)[111]
- *Standards* published by the [International Organization for Standardization](#) (ISO)[112]
- *Standards* published by [Ecma International](#) (formerly ECMA)[113]
- *The Unicode Standard* and various *Unicode Technical Reports* (UTRs) published by the [Unicode Consortium](#)[114]
- Name and number registries maintained by the [Internet Assigned Numbers Authority](#) (IANA) [115]

Web standards are not fixed sets of rules but are constantly evolving sets of finalized technical specifications of web technologies.[116] Web standards are developed by [standards organizations](#)—groups of interested and often competing parties chartered with the task of standardization—not technologies developed and declared to be a standard by a single individual or company. It is crucial to distinguish those specifications that are under development from the ones that already reached the final development status (in the case of [W3C](#) specifications, the highest maturity level).

Accessibility

[[edit](#)]

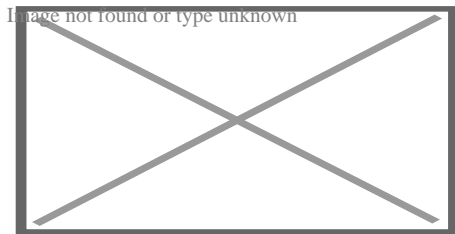
Main article: [Web accessibility](#)

There are methods for accessing the Web in alternative mediums and formats to facilitate use by individuals with [disabilities](#). These disabilities may be visual, auditory, physical, speech-related, cognitive, neurological, or some combination. Accessibility features also help people with temporary disabilities, like a broken arm, or ageing users as their abilities change.[117] The Web is receiving information as well as providing information and interacting with society. The World Wide Web Consortium claims that it is essential that the Web be accessible, so it can provide equal access and [equal opportunity](#) to people with disabilities.[118] Tim Berners-Lee once noted, "The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect." [117] Many countries regulate web accessibility as a requirement for websites.[119] International co-operation in the W3C [Web Accessibility Initiative](#) led to simple guidelines that web content authors as well as software developers can use to make the Web accessible to

persons who may or may not be using [assistive technology](#).^[117]^[120]

Internationalisation

[\[edit\]](#)



A global map of the [Web Index](#) for countries in 2014

The W3C [Internationalisation](#) Activity assures that web technology works in all languages, scripts, and cultures.^[121] Beginning in 2004 or 2005, [Unicode](#) gained ground and eventually in December 2007 surpassed both [ASCII](#) and Western European as the Web's most frequently used [character map](#).^[122] Originally [RFC 3986](#) allowed resources to be identified by [URI](#) in a subset of US-ASCII.

[RFC 3987](#) allows more characters—any character in the [Universal Character Set](#)—and now a resource can be identified by [IRI](#) in any language.^[123]

See also

[\[edit\]](#)

- [Engineering portal](#)
- [Internet portal](#)
- [World portal](#)

- [Decentralized web](#)
- [Electronic publishing](#)
- [Gopher \(protocol\)](#), an early alternative to the WWW
- [Internet metaphors](#)
- [Internet security](#)
- [Lists of websites](#)
- [Minitel](#), a predecessor of the WWW
- [Streaming media](#)
- [Web 1.0](#)
- [Web 2.0](#)
- [Web 3.0](#)
- [Web3](#)

- [Web3D](#)
- [Web development tools](#)
- [Web literacy](#)

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Further reading

[edit]

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External links

[[edit](#)]



Wikimedia Commons has media related to **World Wide Web**.



Wikibooks has a book on the topic of: **Nets, Webs and the Information Infrastructure**

- **The first website**
- **Early archive of the first Web site**
- **Internet Statistics: Growth and Usage of the Web and the Internet**
- **Living Internet** A comprehensive history of the Internet, including the World Wide Web
- **World Wide Web Consortium (W3C)**
- **W3C Recommendations Reduce "World Wide Wait"**
- **World Wide Web Size** Daily estimated size of the World Wide Web
- **Antonio A. Casilli, Some Elements for a Sociology of Online Interactions**
- **The Erdős–Rényi Webgraph Server Archived** 1 March 2021 at the **Wayback Machine** offers weekly updated graph representation of a constantly increasing fraction of the WWW
- **The 25th Anniversary of the World Wide Web Archived** 11 July 2021 at the **Wayback Machine** is an animated video produced by **USAID** and **TechChange** which explores the role of the WWW in addressing extreme **poverty**
- **v**
- **t**

Telecommunications

History

- Beacon
- Broadcasting
- Cable protection system
- Cable TV
- Communications satellite
- Computer network
- Data compression
 - audio
 - DCT
 - image
 - video
- Digital media
 - Internet video
 - online video platform
 - social media
 - streaming
- Drums
- Edholm's law
- Electrical telegraph
- Fax
- Heliographs
- Hydraulic telegraph
- Information Age
- Information revolution
- Internet
- Mass media
- Mobile phone
 - Smartphone
- Optical telecommunication
- Optical telegraphy
- Pager
- Photophone
- Prepaid mobile phone
- Radio
- Radiotelephone
- Satellite communications
- Semaphore
 - Phryctoria
- Semiconductor
 - device
 - MOSFET
 - transistor
- Smoke signals
- Telecommunications history
- Telautograph
- Telegraphy
- Teleprinter (teletype)
- Telephone
- The Telephone Cases

Pioneers

- Nasir Ahmed
- Edwin Howard Armstrong
- Mohamed M. Atalla
- John Logie Baird
- Paul Baran
- John Bardeen
- Alexander Graham Bell
- Emile Berliner
- Tim Berners-Lee
- Francis Blake
- Jagadish Chandra Bose
- Charles Bourseul
- Walter Houser Brattain
- Vint Cerf
- Claude Chappe
- Yogen Dalal
- Donald Davies
- Daniel Davis Jr.
- Amos Dolbear
- Thomas Edison
- Philo Farnsworth
- Reginald Fessenden
- Lee de Forest
- Elisha Gray
- Oliver Heaviside
- Robert Hooke
- Erna Schneider Hoover
- Harold Hopkins
- Gardiner Greene Hubbard
- Bob Kahn
- Dawon Kahng
- Charles K. Kao
- Narinder Singh Kapany
- Hedy Lamarr
- Roberto Landell
- Innocenzo Manzetti
- Guglielmo Marconi
- Robert Metcalfe
- Antonio Meucci
- Samuel Morse
- Jun-ichi Nishizawa
- Charles Grafton Page
- Radia Perlman
- Alexander Stepanovich Popov
- Tivadar Puskás
- Johann Philipp Reis
- Claude Shannon
- Almon Brown Strowger
- Henry Sutton

Transmission media

- Coaxial cable
- Fiber-optic communication
 - optical fiber
- Free-space optical communication
- Molecular communication
- Radio waves
 - wireless
- Transmission line
 - telecommunication circuit

Network topology and switching

- Bandwidth
- Links
- Network switching
 - circuit
 - packet
- Nodes
 - terminal
- Telephone exchange

Multiplexing

- Space-division
- Frequency-division
- Time-division
- Polarization-division
- Orbital angular-momentum
- Code-division

Concepts

- Communication protocol
- Computer network
- Data transmission
- Store and forward
- Telecommunications equipment

Types of network





- Cellular network
- Ethernet
- ISDN
- LAN
- Mobile
- NGN
- Public Switched Telephone
- Radio
- Television
- Telex
- UUCP
- WAN
- Wireless network

Notable networks

- ARPANET
- BITNET
- CYCLADES
- FidoNet
- Internet
- Internet2
- JANET
- NPL network
- Toasternet
- Usenet

Locations

- Africa
- Americas
 - North
 - South
- Antarctica
- Asia
- Europe
- Oceania
- *Global telecommunications regulation bodies*

-  **Telecommunication portal**
-  **Category**
-  **Outline**
-  **Commons**

- **v**
- **t**
- **e**

Web syndication

History

Blogging

Podcasting

Vlogging

Web syndication technology

Types

- Art
- Bloggernacle
- Classical music
- Corporate
- Dream diary
- Edublog
- Electronic journal
- Fake
- Family
- Fashion
- Food
- Health
- Law
- Lifelog
- MP3
- News
- Photoblog
- Police
- Political
- Project
- Reverse
- Travel
- Warblog

| | | |
|------------|-----------|---|
| Technology | General | <ul style="list-style-type: none"> ○ BitTorrent ○ Feed URI scheme |
| | Features | <ul style="list-style-type: none"> ○ Linkback ○ Permalink ○ Ping ○ Pingback ○ Reblogging ○ Refback ○ Rollback ○ Trackback |
| | Mechanism | <ul style="list-style-type: none"> ○ Thread ○ Geotagging ○ RSS enclosure ○ Synchronization |
| | Memetics | <ul style="list-style-type: none"> ○ Atom feed ○ Data feed ○ Photofeed ○ Product feed ○ RDF feed ○ Web feed |
| | RSS | <ul style="list-style-type: none"> ○ GeoRSS ○ MRSS ○ RSS TV |
| | Social | <ul style="list-style-type: none"> ○ Inter-process communication ○ Mashup ○ Referencing ○ RSS editor ○ RSS tracking ○ Streaming media |
| | Standard | <ul style="list-style-type: none"> ○ OPML ○ RSS Advisory Board ○ Usenet ○ World Wide Web ○ XBEL ○ XOXO |

- Audio podcast
- Enhanced podcast
- Mobilecast
- Narrowcasting
- Peercasting
- Screencast
- Slidecasting
- Videocast
- Webcomic
- Webtoon
- Web series

Form

- Anonymous blogging
- Collaborative blog
- Columnist
- Instant messaging
- Liveblogging
- Microblog
- Mobile blogging
- Spam blog
- Video blogging
- Motovlogging

Media

Alternative media

- Carnivals
- Fiction
- Journalism
 - Citizen
 - Database
- Online diary
- Search engines
- Sideblog
- Software
- Web directory

Micromedia

- Aggregation
 - News
 - Poll
 - Review
 - Search
 - Video
- Atom
- AtomPub
- Broadcatching
- Hashtag
- NewsML
 - 1
 - G2
- Social communication
- Social software
- Web Slice

Related

- Blogosphere
- Escribitionist
- Glossary of blogging
- Pay per click
- Posting style
- Slashdot effect
- Spam in blogs
- Uses of podcasting

- **v**
- **t**

Semantic Web

| | |
|---------------------|--|
| Background | <ul style="list-style-type: none">o Databaseso Hypertexto Interneto Ontologieso Semanticso Semantic networkso World Wide Web |
| Sub-topics | <ul style="list-style-type: none">o Dataspaceso Hyperdatao Linked datao Rule-based systems |
| Applications | <ul style="list-style-type: none">o Semantic analyticso Semantic brokero Semantic computingo Semantic mappero Semantic matchingo Semantic publishingo Semantic reasonero Semantic searcho Semantic service-oriented architectureo Semantic wikio Solid |

Related topics

- [Collective intelligence](#)
- [Description logic](#)
- [Folksonomy](#)
- [Geotagging](#)
- [Information architecture](#)
- [iXBRL](#)
- [Knowledge extraction](#)
- [Knowledge management](#)
- [Knowledge representation and reasoning](#)
- [Library 2.0](#)
- [Digital library](#)
- [Digital humanities](#)
- [Metadata](#)
- [References](#)
- [Topic map](#)
- [Web 2.0](#)
- [Web engineering](#)
- [Web Science Trust](#)

Syntax and supporting technologies

- HTTP
- IRI
 - URI
- RDF
 - triples
 - RDF/XML
 - JSON-LD
 - Turtle
 - TriG
 - Notation3
 - N-Triples
 - TriX (no W3C standard)
- RRID
- SPARQL
- XML
- Semantic HTML

Schemas, ontologies and rules

- Common Logic
- OWL
- RDFS
- Rule Interchange Format
- Semantic Web Rule Language
- ALPS
- SHACL

Standards

Semantic annotation

- eRDF
- GRDDL
- Microdata
- Microformats
- RDFa
- SAWSDL
- Facebook Platform

Common vocabularies

- DOAP
- Dublin Core
- FOAF
- Schema.org
- SIOC
- SKOS

Microformat vocabularies

- hAtom
- hCalendar
- hCard
- hProduct
- hRecipe

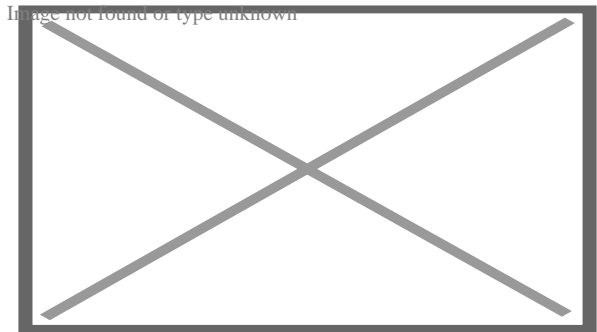
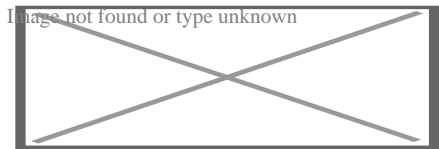
Authority control databases Image not found or type unknown
Edit this at Wikidata

- | | |
|---------------|--|
| International | <ul style="list-style-type: none">FAST |
| National | <ul style="list-style-type: none">GermanyUnited StatesFranceBnF dataCzech RepublicSpainLatviaIsrael |
| Other | <ul style="list-style-type: none">NARA |

About Google Search

"Google.com" redirects here. For the company itself, see [Google](#).

Google Search



Google Search on desktop

| | |
|--------------|-------------------|
| Type of site | Web search engine |
| Available in | 149 languages |

| | |
|-----------------------|---|
| Owner | Google |
| Revenue | Google Ads |
| URL | google.com <small>Image not found or type unknown</small> Edit this at Wikidata |
| IPv6 support | Yes[1] |
| Commercial | Yes |
| Registration | Optional |
| Launched | <ul style="list-style-type: none"> ○ 1995; 30 years ago (first prototype) ○ 1997; 28 years ago (final launch) |
| Current status | Online |
| Written in | <ul style="list-style-type: none"> ○ Python ○ C ○ C++[2] |

Google Search (also known simply as **Google** or **Google.com**) is a **search engine** operated by **Google**. It allows users to search for information on the **Web** by entering keywords or phrases. Google Search uses **algorithms** to analyze and rank **websites** based on their relevance to the search query. It is the most popular search engine worldwide.

Google Search is the **most-visited website in the world**. As of 2020, Google Search has a 92% share of the global search engine market.[3] Approximately 26.75% of Google's monthly global traffic comes from the **United States**, 4.44% from **India**, 4.4% from **Brazil**, 3.92% from the **United Kingdom** and 3.84% from **Japan** according to data provided by **Similarweb**. [4]

The order of search results returned by Google is based, in part, on a priority rank system called "**PageRank**". Google Search also provides many different options for customized searches, using symbols to include, exclude, specify or require certain search behavior, and offers specialized interactive experiences, such as flight status and package tracking, weather forecasts, currency, unit, and time conversions, word definitions, and more.

The main purpose of Google Search is to search for text in publicly accessible documents offered by web servers, as opposed to other data, such as **images** or **data contained in databases**. It was originally developed in 1996 by **Larry Page**, **Sergey Brin**, and **Scott Hassan**. [5][6][7] The search engine would also be set up in the garage of **Susan Wojcicki's Menlo Park** home. [8] In 2011, Google introduced "**Google Voice Search**" to search for spoken, rather than typed, words. [9] In 2012, Google introduced a **semantic search** feature named **Knowledge Graph**.

Analysis of the frequency of search terms may indicate economic, social and health trends. [10] Data about the frequency of use of search terms on Google can be **openly** inquired via **Google Trends** and **have been shown to correlate** with **flu** outbreaks and unemployment levels, and provide the information faster than traditional reporting methods and surveys. As of mid-2016, Google's search engine has begun to rely on **deep neural networks**. [11]

In August 2024, a US judge in Virginia ruled that Google's search engine held an **illegal monopoly** over Internet search.[12][13] The court found that Google maintained its market dominance by paying large amounts to phone-makers and browser-developers to make Google its default search engine.[13]

Search indexing

[edit]

See also: **Googlebot**

Google **indexes** hundreds of **terabytes** of information from **web pages**.^[14] For **websites** that are currently down or otherwise not available, Google provides links to **cached** versions of the site, formed by the search engine's latest indexing of that page.^[15] Additionally, Google indexes some file types, being able to show users **PDFs**, **Word documents**, **Excel spreadsheets**, **PowerPoint presentations**, certain **Flash multimedia content**, and **plain text** files.^[16] Users can also activate "**SafeSearch**", a filtering technology aimed at preventing explicit and pornographic content from appearing in search results.^[17]

Despite Google search's immense index, sources generally assume that Google is only indexing less than 5% of the total Internet, with the rest belonging to the **deep web**, inaccessible through its search tools.^{[14][18][19]}

In 2012, Google changed its search indexing tools to demote sites that had been accused of **piracy**.^[20] In October 2016, Gary Illyes, a webmaster trends analyst with Google, announced that the search engine would be making a separate, primary web index dedicated for mobile devices, with a secondary, less up-to-date index for desktop use. The change was a response to the continued growth in mobile usage, and a push for web developers to adopt a mobile-friendly version of their websites.^{[21][22]} In December 2017, Google began rolling out the change, having already done so for multiple websites.^[23]

"Caffeine" search architecture upgrade

[edit]

In August 2009, Google invited web developers to test a new search architecture, codenamed "Caffeine", and give their feedback. The new architecture provided no visual differences in the user interface, but added significant speed improvements and a new "under-the-hood" indexing infrastructure. The move was interpreted in some quarters as a response to **Microsoft**'s recent release of an upgraded version of its own search service, renamed **Bing**, as well as the launch of **Wolfram Alpha**, a new search engine based on "computational knowledge".^{[24][25]} Google announced completion of "Caffeine" on June 8, 2010, claiming 50% fresher results due to continuous updating of its index.^[26]

With "Caffeine", Google moved its back-end indexing system away from **MapReduce** and onto **Bigtable**, the company's distributed database platform.^{[27][28]}

"Medic" search algorithm update

[\[edit\]](#)

In August 2018, [Danny Sullivan](#) from Google announced a broad core algorithm update. As per current analysis done by the industry leaders Search Engine Watch and Search Engine Land, the update was to drop down the medical and health-related websites that were not user friendly and were not providing good user experience. This is why the industry experts named it "Medic".[\[29\]](#)

Google reserves very high standards for YMYL (Your Money or Your Life) pages. This is because misinformation can affect users financially, physically, or emotionally. Therefore, the update targeted particularly those YMYL pages that have low-quality content and misinformation. This resulted in the algorithm targeting health and medical-related websites more than others. However, many other websites from other industries were also negatively affected.[\[30\]](#)

Search results

[\[edit\]](#)

Ranking of results

[\[edit\]](#)

By 2012, it handled more than 3.5 billion searches per day.[\[31\]](#) In 2013 the [European Commission](#) found that Google Search favored Google's own products, instead of the best result for consumers' needs.[\[32\]](#) In February 2015 Google announced a major change to its mobile search [algorithm](#) which would favor mobile friendly over other [websites](#). Nearly 60% of Google [searches](#) come from mobile phones. Google says it wants users to have access to premium quality [websites](#). Those websites which lack a mobile-friendly [interface](#) would be ranked lower and it is expected that this update will cause a shake-up of [ranks](#). Businesses who fail to update their [websites](#) accordingly could see a dip in their regular websites traffic.[\[33\]](#)

PageRank

[\[edit\]](#)

Main article: [PageRank](#)

Google's rise was largely due to a patented [algorithm](#) called PageRank which helps rank web pages that match a given search string.[\[34\]](#) When Google was a Stanford research project, it was nicknamed [BackRub](#) because the technology checks [backlinks](#) to determine a site's importance. Other keyword-based methods to rank search results, used by many search engines that were once more popular than Google, would check how often the search terms occurred in a page, or how strongly associated the search terms were within each resulting page. The PageRank algorithm instead analyzes human-generated [links](#) assuming that web pages linked from many important pages are also important. The algorithm computes a [recursive](#) score for pages, based

on the weighted sum of other pages linking to them. PageRank is thought to **correlate** well with human concepts of importance. In addition to PageRank, Google, over the years, has added many other secret criteria for determining the ranking of resulting pages. This is reported to comprise over 250 different indicators,[35][36] the specifics of which are kept secret to avoid difficulties created by scammers and help Google maintain an edge over its competitors globally.

PageRank was influenced by a similar page-ranking and site-scoring algorithm earlier used for **RankDex**, developed by **Robin Li** in 1996. Larry Page's patent for PageRank filed in 1998 includes a citation to Li's earlier patent. Li later went on to create the Chinese search engine **Baidu** in 2000.[37][38]

In a potential hint of Google's future direction of their Search algorithm, Google's then chief executive **Eric Schmidt**, said in a 2007 interview with the *Financial Times*: "The goal is to enable Google users to be able to ask the question such as 'What shall I do tomorrow?' and 'What job shall I take?' ".[39] Schmidt reaffirmed this during a 2010 interview with *The Wall Street Journal*: "I actually think most people don't want Google to answer their questions, they want Google to tell them what they should be doing next." [40]

Google optimization

[edit]

Main article: **Search engine optimization**

Because Google is the most popular **search engine**, many **webmasters** attempt to influence their website's Google rankings. An industry of consultants has arisen to help websites increase their rankings on Google and other search engines. This field, called search engine optimization, attempts to discern patterns in search engine listings, and then develop a methodology for improving rankings to draw more searchers to their clients' sites. Search engine optimization encompasses both "on page" factors (like body copy, title elements, H1 heading elements and image **alt attribute** values) and Off Page Optimization factors (like **anchor text** and PageRank). The general idea is to affect Google's relevance algorithm by incorporating the keywords being targeted in various places "on page", in particular the title element and the body copy (note: the higher up in the page, presumably the better its keyword prominence and thus the ranking). Too many occurrences of the keyword, however, cause the page to look suspect to Google's spam checking algorithms. Google has published guidelines for website owners who would like to raise their rankings when using legitimate optimization consultants.[41] It has been hypothesized, and, allegedly, is the opinion of the owner of one business about which there have been numerous complaints, that negative publicity, for example, numerous consumer complaints, may serve as well to elevate page rank on Google Search as favorable comments.[42] The particular problem addressed in *The New York Times* article, which involved **DecorMyEyes**, was addressed shortly thereafter by an undisclosed fix in the Google algorithm. According to Google, it was not the frequently published consumer complaints about DecorMyEyes which resulted in the high ranking but mentions on news websites of events which affected the firm such as legal actions against it. **Google Search Console** helps to check for websites that use duplicate or copyright content.[43]

"Hummingbird" search algorithm upgrade

[[edit](#)]

Main article: [Google Hummingbird](#)

In 2013, Google significantly upgraded its search algorithm with "Hummingbird". Its name was derived from the speed and accuracy of the [hummingbird](#).^[44] The change was announced on September 26, 2013, having already been in use for a month.^[45] "Hummingbird" places greater emphasis on [natural language](#) queries, considering context and meaning over individual keywords.^[44] It also looks deeper at content on individual pages of a website, with improved ability to lead users directly to the most appropriate page rather than just a website's homepage.^[46] The upgrade marked the most significant change to Google search in years, with more "human" search interactions^[47] and a much heavier focus on conversation and meaning.^[44] Thus, web developers and writers were encouraged to [optimize their sites](#) with natural writing rather than forced keywords, and make effective use of technical web development for on-site navigation.^[48]

Search results quality

[[edit](#)]

In 2023, drawing on internal Google documents disclosed as part of the [United States v. Google LLC \(2020\)](#) antitrust case, technology reporters claimed that Google Search was "bloated and overmonetized"^[49] and that the "semantic matching" of search queries put advertising profits before quality.^[50] [Wired](#) withdrew Megan Gray's piece after Google complained about alleged inaccuracies, while the author reiterated that «As stated in court, "A goal of Project Mercury was to increase commercial queries"».^[51]

In March 2024, Google announced a significant update to its core search algorithm and spam targeting, which is expected to wipe out 40 percent of all spam results.^[52] On March 20th, it was confirmed that the roll out of the spam update was complete.^[53]

Shopping search

[[edit](#)]

On September 10, 2024, the European-based [EU Court of Justice](#) found that Google held an illegal monopoly with the way the company showed favoritism to its shopping search, and could not avoid paying €2.4 billion.^[54] The EU Court of Justice referred to Google's treatment of rival shopping searches as "discriminatory" and in violation of the [Digital Markets Act](#).^[54]

Interface

[[edit](#)]

Page layout

[\[edit\]](#)

At the top of the search page, the approximate result count and the response time two digits behind decimal is noted. Of search results, page titles and URLs, dates, and a preview text snippet for each result appears. Along with web search results, sections with images, news, and videos may appear.^[55] The length of the previewed text snippet was experimented with in 2015 and 2017.^{[56][57]}

Universal search

[\[edit\]](#)

"Universal search" was launched by Google on May 16, 2007, as an idea that merged the results from different kinds of search types into one. Prior to Universal search, a standard Google search would consist of links only to websites. Universal search, however, incorporates a wide variety of sources, including websites, news, pictures, maps, blogs, videos, and more, all shown on the same search results page.^{[58][59]} **Marissa Mayer**, then-vice president of search products and user experience, described the goal of Universal search as "we're attempting to break down the walls that traditionally separated our various search properties and integrate the vast amounts of information available into one simple set of search results."^[60]

In June 2017, Google expanded its search results to cover available job listings. The data is aggregated from various major job boards and collected by analyzing company homepages. Initially only available in English, the feature aims to simplify finding jobs suitable for each user.^{[61][62]}

Rich snippets

[\[edit\]](#)

In May 2009, Google announced that they would be parsing website **microformats** to populate search result pages with "Rich snippets". Such snippets include additional details about results, such as displaying reviews for restaurants and social media accounts for individuals.^[63]

In May 2016, Google expanded on the "Rich snippets" format to offer "Rich cards", which, similarly to snippets, display more information about results, but shows them at the top of the mobile website in a swipeable carousel-like format.^[64] Originally limited to movie and recipe websites in the United States only, the feature expanded to all countries globally in 2017.^[65]

Knowledge Graph

[\[edit\]](#)

Main article: [Knowledge Graph](#)

The Knowledge Graph is a knowledge base used by Google to enhance its search engine's results with information gathered from a variety of sources.^[66] This information is presented to users in a box to the right of search results.^[67] Knowledge Graph boxes were added to Google's search engine in May 2012,^[66] starting in the United States, with international expansion by the end of the year.^[68] The information covered by the Knowledge Graph grew significantly after launch, tripling its original size within seven months,^[69] and being able to answer "roughly one-third" of the 100 billion monthly searches Google processed in May 2016.^[70] The information is often used as a spoken answer in [Google Assistant](#)^[71] and [Google Home](#) searches.^[72] The Knowledge Graph has been criticized for providing answers without source attribution.^[70]

Google Knowledge Panel

[\[edit\]](#)

A Google Knowledge Panel^[73] is a feature integrated into Google search engine result pages, designed to present a structured overview of entities such as individuals, organizations, locations, or objects directly within the search interface. This feature leverages data from Google's Knowledge Graph,^[74] a database that organizes and interconnects information about entities, enhancing the retrieval and presentation of relevant content to users.

The content within a Knowledge Panel^[75] is derived from various sources, including [Wikipedia](#) and other structured databases, ensuring that the information displayed is both accurate and contextually relevant. For instance, querying a well-known public figure may trigger a Knowledge Panel displaying essential details such as biographical information, birthdate, and links to social media profiles or official websites.

The primary objective of the Google Knowledge Panel is to provide users with immediate, factual answers, reducing the need for extensive navigation across multiple web pages.

Personal tab

[\[edit\]](#)

In May 2017, Google enabled a new "Personal" tab in Google Search, letting users search for content in their Google accounts' various services, including email messages from [Gmail](#) and photos from [Google Photos](#).^[76]^[77]

Google Discover

[\[edit\]](#)

Google Discover, previously known as Google Feed, is a personalized stream of articles, videos, and other news-related content. The feed contains a "mix of cards" which show topics of interest

based on users' interactions with Google, or topics they choose to follow directly.[78] Cards include, "links to news stories, YouTube videos, sports scores, recipes, and other content based on what [Google] determined you're most likely to be interested in at that particular moment." [78] Users can also tell Google they're not interested in certain topics to avoid seeing future updates.

Google Discover launched in December 2016[79] and received a major update in July 2017.[80] Another major update was released in September 2018, which renamed the app from Google Feed to Google Discover, updated the design, and adding more features.[81]

Discover can be found on a tab in the Google app and by swiping left on the home screen of certain Android devices. As of 2019, Google will not allow **political campaigns** worldwide to target their advertisement to people to make them vote.[82]

AI Overviews

[edit]

At the 2023 **Google I/O** event in May, Google unveiled Search Generative Experience (SGE), an experimental feature in Google Search available through **Google Labs** which produces **AI-generated** summaries in response to search prompts.[83] This was part of Google's wider efforts to counter the unprecedented rise of generative AI technology, ushered by **OpenAI**'s launch of **ChatGPT**, which sent Google executives to a panic due to its potential threat to Google Search.[84] Google added the ability to generate images in October.[85] At I/O in 2024, the feature was upgraded and renamed AI Overviews.[86]

"cheese not sticking to pizza"

Image not found or type unknown

Early AI Overview response to the problem of "cheese not sticking to pizza"

AI Overviews was rolled out to users in the United States in May 2024.[86] The feature faced public criticism in the first weeks of its rollout after errors from the tool went viral online. These included results suggesting users add glue to pizza or eat rocks,[87] or incorrectly claiming **Barack Obama** is Muslim.[88] Google described these viral errors as "isolated examples", maintaining that most AI Overviews provide accurate information.[87][89] Two weeks after the rollout of AI Overviews, Google made technical changes and scaled back the feature, pausing its use for some health-related queries and limiting its reliance on social media posts.[90] *Scientific American* has criticised the system on environmental grounds, as such a search uses 30 times

more energy than a conventional one.[91] It has also been criticized for condensing information from various sources, making it less likely for people to view full articles and websites. When it was announced in May 2024, Danielle Coffey, CEO of the News/Media Alliance was quoted as saying "This will be catastrophic to our traffic, as marketed by Google to further satisfy user queries, leaving even less incentive to click through so that we can monetize our content." [92]

In August 2024, AI Overviews were rolled out in the UK, India, Japan, Indonesia, Mexico and Brazil, with local language support.[93] On October 28, 2024, AI Overviews was rolled out to 100 more countries, including Australia and New Zealand.[94]

AI Mode

[edit]

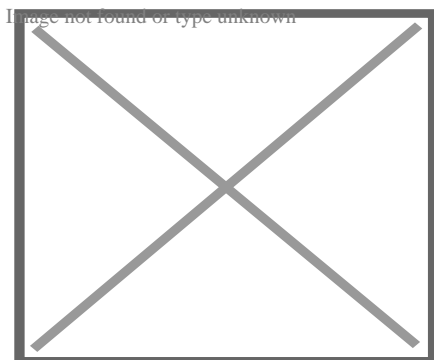
In March 2025, Google introduced an experimental "AI Mode" within its Search platform, enabling users to input complex, multi-part queries and receive comprehensive, AI-generated responses. This feature leverages Google's advanced Gemini 2.0 model, which enhances the system's reasoning capabilities and supports multimodal inputs, including text, images, and voice.

Initially, AI Mode is available to Google One AI Premium subscribers in the United States, who can access it through the Search Labs platform. This phased rollout allows Google to gather user feedback and refine the feature before a broader release.

The introduction of AI Mode reflects Google's ongoing efforts to integrate advanced AI technologies into its services, aiming to provide users with more intuitive and efficient search experiences.[95][96]

Redesigns

[edit]



Product Sans, Google's typeface since 2015

In late June 2011, Google introduced a new look to the Google homepage in order to boost the use of the Google+ social tools.[97]

One of the major changes was replacing the classic navigation bar with a black one. Google's digital creative director Chris Wiggins explains: "We're working on a project to bring you a new and improved Google experience, and over the next few months, you'll continue to see more updates to our look and feel."^[98] The new navigation bar has been negatively received by a vocal minority.^[99]

In November 2013, Google started testing yellow labels for advertisements displayed in search results, to improve user experience. The new labels, highlighted in yellow color, and aligned to the left of each sponsored link help users differentiate between organic and sponsored results.^[100]

On December 15, 2016, Google rolled out a new desktop search interface that mimics their modular mobile user interface. The mobile design consists of a tabular design that highlights search features in boxes. and works by imitating the desktop Knowledge Graph real estate, which appears in the right-hand rail of the search engine result page, these featured elements frequently feature Twitter carousels, People Also Search For, and Top Stories (vertical and horizontal design) modules. The Local Pack and Answer Box were two of the original features of the Google **SERP** that were primarily showcased in this manner, but this new layout creates a previously unseen level of design consistency for Google results.^[101]

Smartphone apps

^[edit]

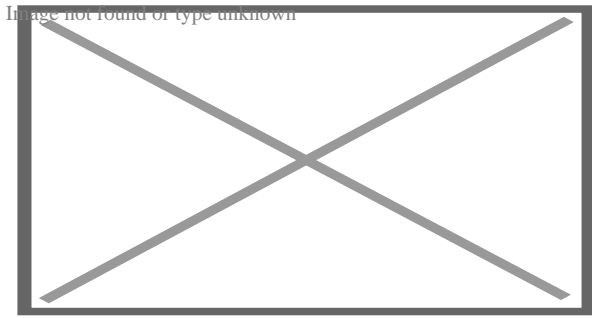
Google offers a "Google Search" **mobile app** for **Android** and **iOS** devices.^[102] The mobile apps exclusively feature Google Discover and a "Collections" feature, in which the user can save for later perusal any type of search result like images, bookmarks or map locations into groups.^[103] Android devices were introduced to a preview of the feed, perceived as related to **Google Now**, in December 2016,^[104] while it was made official on both Android and iOS in July 2017.^{[105][106]}

In April 2016, Google updated its Search app on Android to feature "Trends"; search queries gaining popularity appeared in the autocomplete box along with normal query autocompletion.^[107] The update received significant backlash, due to encouraging search queries unrelated to users' interests or intentions, prompting the company to issue an update with an opt-out option.^[108] In September 2017, the Google Search app on iOS was updated to feature the same functionality.^[109]

In December 2017, Google released "Google Go", an app designed to enable use of Google Search on physically smaller and lower-spec devices in multiple languages. A Google blog post about designing "India-first" products and features explains that it is "tailor-made for the millions of people in [India and Indonesia] coming online for the first time".^[110]

Performing a search

^[edit]



A definition link is provided for many search terms.

Google Search consists of a series of **localized websites**. The largest of those, the **google.com site**, is the top most-visited website in the world.[111] Some of its features include a definition link for most searches including dictionary words, the number of results you got on your search, links to other searches (e.g. for words that Google believes to be misspelled, it provides a link to the search results using its proposed spelling), the ability to filter results to a date range,[112] and many more.

Search syntax

[edit]

Google search accepts queries as normal text, as well as individual keywords.[113] It **automatically corrects** apparent misspellings by default (while offering to use the original spelling as a selectable alternative), and provides the same results regardless of capitalization.[113] For more customized results, one can use a wide variety of **operators**, including, but not limited to:[114][115]

- OR or | – Search for webpages containing one of two similar queries, such as *marathon OR race*
- AND – Search for webpages containing two similar queries, such as *marathon AND runner*
- - (minus sign) – Exclude a word or a phrase, so that *"apple -tree"* searches where word *"tree"* is not used
- "" – Force inclusion of a word or a phrase, such as *"tallest building"*
- * – Placeholder symbol allowing for any substitute words in the context of the query, such as *"largest * in the world"*
- .. – Search within a range of numbers, such as *"camera \$50..\$100"*
- site: – Search within a specific website, such as *"site:youtube.com"*
- define: – Search for definitions for a word or phrase, such as *"define:phrase"*
- stocks: – See the stock price of investments, such as *"stocks:googl"*
- related: – Find web pages related to specific **URL** addresses, such as *"related:www.wikipedia.org"*
- cache: – Highlights the search-words within the cached pages, so that *"cache:www.google.com xxx"* shows cached content with word *"xxx"* highlighted.
- () – Group operators and searches, such as *(marathon OR race) AND shoes*
- filetype: or ext: – Search for specific file types, such as *filetype:gif*

- before: – Search for before a specific date, such as spacex *before:2020-08-11*
- after: – Search for after a specific date, such as iphone *after:2007-06-29*
- @ – Search for a specific word on social media networks, such as "*@twitter*"

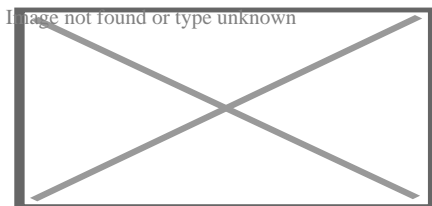
Google also offers a **Google Advanced Search** page with a web interface to access the advanced features without needing to remember the special operators.[\[116\]](#)

Query expansion

[\[edit\]](#)

Google applies **query expansion** to submitted search queries, using techniques to deliver results that it considers "smarter" than the query users actually submitted. This technique involves several steps, including:[\[117\]](#)

- Word **stemming** – Certain words can be reduced so other, similar terms, are also found in results, so that "*translator*" can also search for "*translation*"
- Acronyms – Searching for abbreviations can also return results about the name in its full length, so that "*NATO*" can show results for "*North Atlantic Treaty Organization*"
- Misspellings – Google will often suggest correct spellings for misspelled words
- Synonyms – In most cases where a word is incorrectly used in a phrase or sentence, Google search will show results based on the correct synonym
- Translations – The search engine can, in some instances, suggest results for specific words in a different language
- Ignoring words – In some search queries containing extraneous or insignificant words, Google search will simply drop those specific words from the query



A screenshot of suggestions by Google Search when "wikip" is typed

In 2008, Google started to give users **autocompleted search suggestions** in a list below the search bar while typing, originally with the approximate result count previewed for each listed search suggestion.[\[118\]](#)

"I'm Feeling Lucky"

[\[edit\]](#)

"I'm Feeling Lucky" redirects here. For the 2011 book by Douglas Edwards, see *[I'm Feeling Lucky](#)* (book).

Google's homepage includes a button labeled "I'm Feeling Lucky". This feature originally allowed users to type in their search query, click the button and be taken directly to the first result, bypassing the search results page. Clicking it while leaving the search box empty opens Google's archive of [Doodles](#).^[119] With the 2010 announcement of [Google Instant](#), an automatic feature that immediately displays relevant results as users are typing in their query, the "I'm Feeling Lucky" button disappears, requiring that users opt-out of Instant results through search settings to keep using the "I'm Feeling Lucky" functionality.^[120] In 2012, "I'm Feeling Lucky" was changed to serve as an advertisement for Google services; users hover their computer mouse over the button, it spins and shows an emotion ("I'm Feeling Puzzled" or "I'm Feeling Trendy", for instance), and, when clicked, takes users to a Google service related to that emotion.^[121]

[Tom Chavez](#) of "Rapt", a firm helping to determine a website's advertising worth, estimated in 2007 that Google lost \$110 million in revenue per year due to use of the button, which bypasses the advertisements found on the search results page.^[122]

Special interactive features

[\[edit\]](#)

See also: [List of Google Easter eggs](#) § [Embedded tools](#)

Besides the main text-based search-engine function of Google search, it also offers multiple quick, interactive features. These include, but are not limited to:^[123]^[124]^[125]

- Calculator
- Time zone, currency, and unit conversions
- Word translations
- Flight status
- Local film showings
- Weather forecasts
- Population and unemployment rates
- Package tracking
- Word definitions
- Metronome
- Roll a die
- "Do a barrel roll" (search page spins)
- "Askew" (results show up sideways)

"OK Google" conversational search

[\[edit\]](#)

See also: [Google Now](#) and [Google Assistant](#)

During Google's developer conference, [Google I/O](#), in May 2013, the company announced that users on [Google Chrome](#) and [ChromeOS](#) would be able to have the browser initiate an audio-based search by saying "OK Google", with no button presses required. After having the answer

presented, users can follow up with additional, contextual questions; an example include initially asking "OK Google, will it be sunny in Santa Cruz this weekend?", hearing a spoken answer, and reply with "how far is it from here?"^{[126][127]} An update to the Chrome browser with **voice-search** functionality rolled out a week later, though it required a button press on a microphone icon rather than "OK Google" voice activation.^[128] Google released a browser extension for the Chrome browser, named with a **"beta"** tag for unfinished development, shortly thereafter.^[129] In May 2014, the company officially added "OK Google" into the browser itself;^[130] they removed it in October 2015, citing low usage, though the microphone icon for activation remained available.^[131] In May 2016, 20% of search queries on mobile devices were done through voice.^[132]

Operations

[\[edit\]](#)

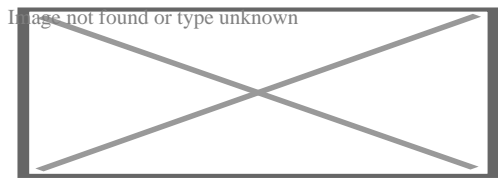
Search products

[\[edit\]](#)

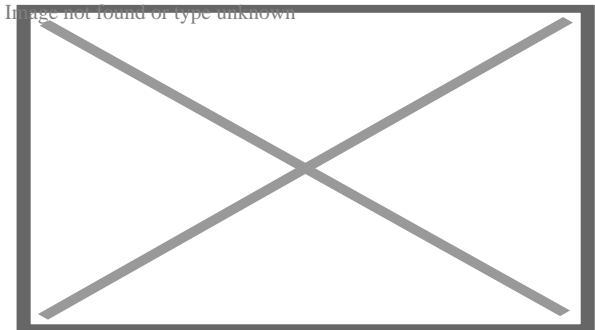
Main article: [List of Google products](#)

"Google Videos" redirects here. For other uses, see [Google Videos \(disambiguation\)](#).

Google Videos



Screenshot



Google Videos homepage as of 2016

| | |
|---------------------|--|
| Type of site | Video search engine |
| Available in | Multilingual |
| Owner | Google |
| URL | www.google.com/videohp |
| Commercial | Yes |
| Registration | Recommended |
| Launched | August 20, 2012; 12 years ago |

In addition to its tool for searching [web pages](#), Google also provides services for searching images, [Usenet newsgroups](#), news websites, videos (**Google Videos**), [searching by locality](#), maps, and items for sale online. **Google Videos** allows searching the [World Wide Web](#) for video clips.^[133] The service evolved from [Google Video](#), Google's discontinued video hosting service that also allowed to search the web for video clips.^[133]

In 2012, Google has indexed over 30 trillion web pages, and received 100 billion queries per month.^[134] It also [caches](#) much of the content that it [indexes](#). Google operates other tools and services including [Google News](#), [Google Shopping](#), [Google Maps](#), [Google Custom Search](#), [Google Earth](#), [Google Docs](#), [Picasa](#) (discontinued), [Panoramio](#) (discontinued), [YouTube](#), [Google Translate](#), [Google Blog Search](#) and [Google Desktop Search](#) (discontinued^[135]).

There are also products available from Google that are not directly search-related. [Gmail](#), for example, is a [webmail](#) application, but still includes search features; [Google Browser Sync](#) does not offer any search facilities, although it aims to organize your browsing time.

Energy consumption

[\[edit\]](#)

In 2009, Google claimed that a search query requires altogether about 1 [kJ](#) or 0.0003 [kW·h](#),^[136] which is enough to raise the temperature of one liter of water by 0.24 °C. According to green search engine [Ecosia](#), the industry standard for search engines is estimated to be about 0.2 grams of CO₂ emission per search.^[137] Google's 40,000 searches per second translate to 8 kg CO₂ per second or over 252 million kilos of CO₂ per year.^[138]

Google Doodles

[\[edit\]](#)

Main article: [Google Doodle](#)

On certain occasions, the [logo](#) on Google's webpage will change to a special version, known as a "Google Doodle". This is a picture, drawing, animation, or interactive game that includes the logo. It is usually done for a special event or day although not all of them are well known.^[139] Clicking on the Doodle links to a string of Google search results about the topic. The first was a reference to the [Burning Man Festival](#) in 1998,^{[140][141]} and others have been produced for the birthdays of notable people like [Albert Einstein](#), historical events like the interlocking [Lego](#) block's 50th anniversary and holidays like [Valentine's Day](#).^[142] Some Google Doodles have interactivity beyond a simple search, such as the famous "Google Pac-Man" version that appeared on May 21, 2010.

Criticism

[\[edit\]](#)

Privacy

[[edit](#)]

Main article: [Privacy concerns regarding Google](#)

Google has been criticized for placing long-term [cookies](#) on users' machines to store preferences, a tactic which also enables them to track a user's search terms and retain the data for more than a year.^[143]

Since 2012, Google Inc. has globally introduced encrypted connections for most of its clients, to bypass governative blockings of the commercial and IT services.^[144]

Complaints about indexing

[[edit](#)]

In 2003, *The New York Times* complained about Google's [indexing](#), claiming that Google's [caching](#) of content on its site infringed its copyright for the content.^[145] In both *Field v. Google* and *Parker v. Google*, the United States District Court of [Nevada](#) ruled in favor of Google.^{[146][147]}

Child sexual abuse

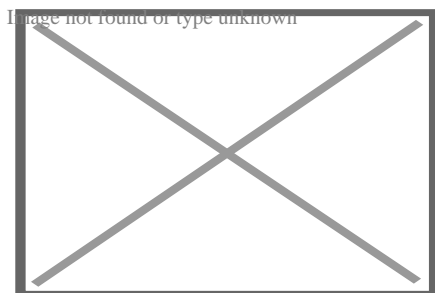
[[edit](#)]

[icon] This section **needs expansion**. You can help by [making an edit request](#)[adding to it](#) . (May 2024)
Image not found or type unknown

A 2019 *New York Times* article on Google Search showed that images of [child sexual abuse](#) had been found on Google and that the company had been reluctant at times to remove them.^[148]

January 2009 malware bug

[[edit](#)]



A screenshot of the error of January 31, 2009

Google flags search results with the message "This site may harm your computer" if the site is known to install malicious software in the background or otherwise surreptitiously. For approximately 40 minutes on January 31, 2009, all search results were mistakenly classified as **malware** and could therefore not be clicked; instead a warning message was displayed and the user was required to enter the requested URL manually. The bug was caused by human error.[149][150][151][152] The **URL** of "/" (which expands to all URLs) was mistakenly added to the malware patterns file.[150][151]

Possible misuse of search results

[edit]

In 2007, a group of researchers observed a tendency for users to rely exclusively on Google Search for finding information, writing that "With the Google interface the user gets the impression that the search results imply a kind of totality. ... In fact, one only sees a small part of what one could see if one also integrates other research tools." [153]

In 2011, Google Search query results have been shown by Internet activist **Eli Pariser** to be tailored to users, effectively isolating users in what he defined as a **filter bubble**. Pariser holds algorithms used in search engines such as Google Search responsible for catering "a personal ecosystem of information". [154] Although contrasting views have mitigated the potential threat of "informational dystopia" and questioned the scientific nature of Pariser's claims, [155] filter bubbles have been mentioned to account for the surprising results of the **U.S. presidential election in 2016** alongside **fake news** and **echo chambers**, suggesting that **Facebook** and Google have designed personalized online realities in which "we only see and hear what we like". [156]

FTC fines

[edit]

In 2012, the US **Federal Trade Commission** fined Google **US\$22.5 million** for violating their agreement not to violate the privacy of users of Apple's **Safari web browser**. [157] The FTC was also continuing to investigate if Google's favoring of their own services in their search results violated antitrust regulations. [158]

Payments to Apple

[edit]

In a November 2023 disclosure, during the ongoing antitrust trial against Google, an economics professor at the **University of Chicago** revealed that Google pays Apple 36% of all search advertising revenue generated when users access Google through the Safari browser. This revelation reportedly caused Google's lead attorney to cringe visibly. [citation needed] The revenue generated from Safari users has been kept confidential, but the 36% figure suggests that

it is likely in the tens of billions of dollars.

Both Apple and Google have argued that disclosing the specific terms of their search default agreement would harm their competitive positions. However, the court ruled that the information was relevant to the antitrust case and ordered its disclosure. This revelation has raised concerns about the dominance of Google in the search engine market and the potential anticompetitive effects of its agreements with Apple.[159]

Big data and human bias

[edit]

Google **search engine** robots are programmed to use **algorithms** that understand and predict human **behavior**. The book, *Race After Technology: Abolitionist Tools for the New Jim Code*[160] by **Ruha Benjamin** talks about human **bias** as a behavior that the Google search engine can recognize. In 2016, some users Google searched "three Black teenagers" and images of criminal **mugshots** of young African American teenagers came up. Then, the users searched "three White teenagers" and were presented with photos of smiling, happy teenagers. They also searched for "three Asian teenagers", and very revealing photos of Asian girls and women appeared. Benjamin concluded that these results reflect human **prejudice** and views on different **ethnic groups**. A group of analysts explained the concept of a **racist** computer program: "The idea here is that computers, unlike people, can't be racist but we're increasingly learning that they do in fact take after their makers ... Some experts believe that this problem might stem from the hidden biases in the massive piles of **data** that the algorithms process as they learn to recognize patterns ... reproducing our worst values".[160]

Monopoly ruling

[edit]

On August 5, 2024, Google lost a **lawsuit which started in 2020** in **D.C. Circuit Court**, with Judge **Amit Mehta** finding that the company had an illegal monopoly over Internet search.[161] This monopoly was held to be in violation of Section 2 of the **Sherman Act**. [162] Google has said it will appeal the ruling,[163] though they did propose to loosen search deals with Apple and others requiring them to set Google as the default search engine.[164]

Trademark

[edit]

Main article: **Google (verb)**

As people talk about "googling" rather than searching, the company has taken some steps to defend its trademark, in an effort to prevent it from becoming a **generic trademark**. [165][166] This has led to lawsuits, threats of lawsuits, and the use of euphemisms, such as calling Google Search a **famous web search engine**. [167]

Discontinued features

[\[edit\]](#)

Translate foreign pages

[\[edit\]](#)

Until May 2013, Google Search had offered a feature to [translate search queries into other languages](#). A Google spokesperson told *Search Engine Land* that "Removing features is always tough, but we do think very hard about each decision and its implications for our users. Unfortunately, this feature never saw much pick up".[\[168\]](#)

Instant search

[\[edit\]](#)

Instant search was announced in September 2010 as a feature that [displayed suggested results while the user typed in their search query](#), initially only in select countries or to registered users.[\[169\]](#) The primary advantage of the new system was its ability to save time, with [Marissa Mayer](#), then-vice president of search products and user experience, proclaiming that the feature would save 2–5 seconds per search, elaborating that "That may not seem like a lot at first, but it adds up. With Google Instant, we estimate that we'll save our users 11 hours with each passing second!"[\[170\]](#) Matt Van Wagner of *Search Engine Land* wrote that "Personally, I kind of like Google Instant and I think it represents a natural evolution in the way search works", and also praised Google's efforts in [public relations](#), writing that "With just a press conference and a few well-placed interviews, Google has parlayed this relatively minor speed improvement into an attention-grabbing front-page news story".[\[171\]](#) The upgrade also became notable for the company switching Google Search's underlying technology from [HTML](#) to [AJAX](#).[\[172\]](#)

Instant Search could be disabled via Google's "preferences" menu for those who didn't want its functionality.[\[173\]](#)

The publication *2600: The Hacker Quarterly* compiled a list of words that Google Instant did not show suggested results for, with a Google spokesperson giving the following statement to *Mashable*:[\[174\]](#)

There are several reasons you may not be seeing search queries for a particular topic. Among other things, we apply a narrow set of removal policies for pornography, violence, and hate speech. It's important to note that removing queries from Autocomplete is a hard problem, and not as simple as blacklisting particular terms and phrases.

In search, we get more than one billion searches each day. Because of this, we take an algorithmic approach to removals, and just like our search algorithms, these are imperfect. We will continue to work to improve our approach to removals in Autocomplete, and are listening carefully to feedback from our users.

Our algorithms look not only at specific words, but compound queries based on those words, and across all languages. So, for example, if there's a bad word in Russian, we may remove a compound word including the transliteration of the Russian word into English. We also look at the search results themselves for given queries. So, for example, if the results for a particular query seem pornographic, our algorithms may remove that query from Autocomplete, even if the query itself wouldn't otherwise violate our policies. This system is neither perfect nor instantaneous, and we will continue to work to make it better.

PC Magazine discussed the inconsistency in how some forms of the same topic are allowed; for instance, "lesbian" was blocked, while "gay" was not, and "cocaine" was blocked, while "crack" and "heroin" were not. The report further stated that seemingly normal words were also blocked due to pornographic innuendos, most notably "scat", likely due to having two completely separate contextual meanings, one for music and one for a sexual practice.^[175]

On July 26, 2017, Google removed Instant results, due to a growing number of searches on mobile devices, where interaction with search, as well as screen sizes, differ significantly from a computer.^{[176][177]}

Instant previews^[edit]

"Instant previews" allowed previewing screenshots of search results' web pages without having to open them. The feature was introduced in November 2010 to the desktop website and removed in April 2013 citing low usage.^{[178][179]}

Dedicated encrypted search page

^[edit]

Various search engines provide encrypted Web search facilities. In May 2010 Google rolled out SSL-encrypted web search.^[180] The encrypted search was accessed at encrypted.google.com^[181] However, the web search is encrypted via Transport Layer Security (TLS) by default today, thus every search request should be automatically encrypted if TLS is supported by the web browser.^[182] On its support website, Google announced that the address encrypted.google.com would be turned off April 30, 2018, stating that all Google products and most new browsers use HTTPS connections as the reason for the discontinuation.^[183]

Real-Time Search

[[edit](#)]

Google Real-Time Search was a feature of Google Search in which search results also sometimes included **real-time** information from sources such as **Twitter**, **Facebook**, **blogs**, and news websites.^[184] The feature was introduced on December 7, 2009,^[185] and went offline on July 2, 2011, after the deal with Twitter expired.^[186] Real-Time Search included **Facebook** status updates beginning on February 24, 2010.^[187] A feature similar to Real-Time Search was already available on **Microsoft's Bing search engine**, which showed results from **Twitter** and Facebook.^[188] The interface for the engine showed a live, descending "river" of posts in the main region (which could be paused or resumed), while a **bar chart** metric of the frequency of posts containing a certain search term or hashtag was located on the right hand corner of the page above a list of most frequently reposted posts and outgoing links. **Hashtag** search links were also supported, as were "promoted" tweets hosted by Twitter (located persistently on top of the river) and thumbnails of retweeted image or video links.

In January 2011, geolocation links of posts were made available alongside results in Real-Time Search. In addition, posts containing syndicated or attached shortened links were made searchable by the *link:* query option. In July 2011, Real-Time Search became inaccessible, with the Real-Time link in the Google sidebar disappearing and a custom 404 error page generated by Google returned at its former URL. Google originally suggested that the interruption was temporary and related to the launch of **Google+**;^[189] they subsequently announced that it was due to the expiry of a commercial arrangement with Twitter to provide access to tweets.^[190]

See also

[[edit](#)]

 **Internet portal**
Image not found or not known

- **List of search engines by popularity** – Software system for finding relevant information on the Web
- **Timeline of Google Search**
- **Censorship by Google § Google Search**
- **Google (verb)** – Transitive verb, to search using Google
- **Dragonfly (search engine)** – Prototype Internet search engine to comply with Chinese censorship requirements
- **Google bombing** – Practice that causes a webpage to have a high rank in Google
- **Google Panda** – Change to Google's search results ranking algorithm
- **Google Penguin** – Google search engine algorithm update
- **Googlewhack** – Contest to find a Google Search query that returns a single result
- **Halalgoogling** – Islamic search engine blocking haram content
- **Prabhakar Raghavan** – American computer scientist

- Reunion (advertisement) – Google India advertisement for Google Search
- List of search engines
- Comparison of web search engines
- History of Google
- List of Google products

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External links

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- Brain
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- Cloud Platform
- Energy
- Google.org
 - Crisis Response
- Health
- Registry

Active

- Security Operations
- DeepMind
- Fitbit
- ITA Software
- Jigsaw
- Looker
- Mandiant
- Owlchemy Labs

Subsidiaries

- Actifio
- Adscape
- Akwan Information Technologies
- Anvato
- Apigee
- BandPage
- Bitium
- BufferBox
- Crashlytics
- Dodgeball
- DoubleClick
- Dropcam
- Endoxon
- Flutter
- Global IP Solutions
- Green Throttle Games
- GreenBorder
- Gridcentric
- ImageAmerica
- Impermium
- Invite Media
- Kaltix

Defunct

Development

- Accelerated Linear Algebra
- AMP
- *Actions on Google*
- ALTS
- American Fuzzy Lop
- *Android Cloud to Device Messaging*
- Android Debug Bridge
- Android NDK
- Android Runtime
- Android SDK
- Android Studio
- Angular
- *AngularJS*
- Apache Beam
- APIs
- App Engine
- App Inventor
- *App Maker*
- App Runtime for Chrome
- *AppJet*
- Apps Script
- AppSheet
- ARCore
- *Base*
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- Chart API
- Charts
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- Chromium
 - Blink
- Closure Tools
- *Cloud Connect*
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- *Cloud Messaging*
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A–C

Software

- *Aardvark*
- Account
 - Dashboard
 - Takeout
- Ad Manager
- AdMob
- Ads
- AdSense
- *Affiliate Network*
- A ○ Alerts
- *Allo*
- Analytics
- Android Auto
- *Android Beam*
- *Answers*
- *Apture*
- Arts & Culture
- Assistant
- *Attribution*
- Authenticator
- *BebaPay*
- *BeatThatQuote.com*
- *Blog Search*
- Blogger
- *Body*
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- B ○ Books
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- *BumpTop*
- *Buzz*
- Calendar
- Cast
- *Catalogs*
- Chat
- *Checkout*
- Chrome
- *Chrome Apps*
- Chrome Experiments
- C ○ Chrome Remote Desktop

Hardware

Smartphones

Pixel

- Pixel (2016)
- Pixel 2 (2017)
- Pixel 3 (2018)
- Pixel 3a (2019)
- Pixel 4 (2019)
- Pixel 4a (2020)
- Pixel 5 (2020)
- Pixel 5a (2021)
- Pixel 6 (2021)
- Pixel 6a (2022)
- Pixel 7 (2022)
- Pixel 7a (2023)
- Pixel Fold (2023)
- Pixel 8 (2023)
- Pixel 8a (2024)
- Pixel 9 (2024)
- Pixel 9 Pro Fold (2024)

Smartwatches

- Pixel Watch (2022)
- Pixel Watch 2 (2023)
- Pixel Watch 3 (2024)

Tablets

- Pixel C (2015)
- Pixel Slate (2018)
- Pixel Tablet (2023)

Laptops

- Chromebook Pixel (2013–2015)
- Pixelbook (2017)
- Pixelbook Go (2019)

Other

- Pixel Buds (2017–present)

Smartphones

- Nexus One (2010)
- Nexus S (2010)
- Galaxy Nexus (2011)
- Nexus 4 (2012)
- Nexus 5 (2013)
- Nexus 6 (2014)
- Nexus 5X (2015)

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Litigation

| | |
|------------------------------|---|
| Advertising | <ul style="list-style-type: none"> ○ <i>Feldman v. Google, Inc.</i> (2007) ○ <i>Rescuecom Corp. v. Google Inc.</i> (2009) ○ <i>Goddard v. Google, Inc.</i> (2009) ○ <i>Rosetta Stone Ltd. v. Google, Inc.</i> (2012) ○ <i>Google, Inc. v. American Blind & Wallpaper Factory, Inc.</i> (2017) ○ Jedi Blue |
| Antitrust | <ul style="list-style-type: none"> ○ European Union (2010–present) ○ <i>United States v. Adobe Systems, Inc., Apple Inc., Google Inc., Intel Corporation, Intuit, Inc., and Pixar</i> (2011) ○ <i>Umar Javeed, Sukarma Thapar, Aaqib Javeed vs. Google LLC and Ors.</i> (2019) ○ <i>United States v. Google LLC</i> (2020) ○ <i>United States v. Google LLC</i> (2023) |
| Intellectual property | <ul style="list-style-type: none"> ○ <i>Perfect 10, Inc. v. Amazon.com, Inc.</i> (2007) ○ <i>Viacom International Inc. v. YouTube, Inc.</i> (2010) ○ <i>Lenz v. Universal Music Corp.</i> (2015) ○ <i>Authors Guild, Inc. v. Google, Inc.</i> (2015) ○ <i>Field v. Google, Inc.</i> (2016) ○ <i>Google LLC v. Oracle America, Inc.</i> (2021) ○ Smartphone patent wars |
| Privacy | <ul style="list-style-type: none"> ○ <i>Rocky Mountain Bank v. Google, Inc.</i> (2009) ○ <i>Hibnick v. Google, Inc.</i> (2010) ○ <i>United States v. Google Inc.</i> (2012) ○ Judgement of the German Federal Court of Justice on Google's autocomplete function (2013) ○ <i>Joffe v. Google, Inc.</i> (2013) ○ <i>Mosley v SARL Google</i> (2013) ○ <i>Google Spain v AEPD and Mario Costeja González</i> (2014) ○ <i>Frank v. Gaos</i> (2019) |
| Other | <ul style="list-style-type: none"> ○ <i>Garcia v. Google, Inc.</i> (2015) ○ <i>Google LLC v Defteros</i> (2020) ○ <i>Epic Games v. Google</i> (2021) ○ <i>Gonzalez v. Google LLC</i> (2022) |

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Concepts


Android

- Booting process
- Custom distributions
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- Recovery mode
- Software development

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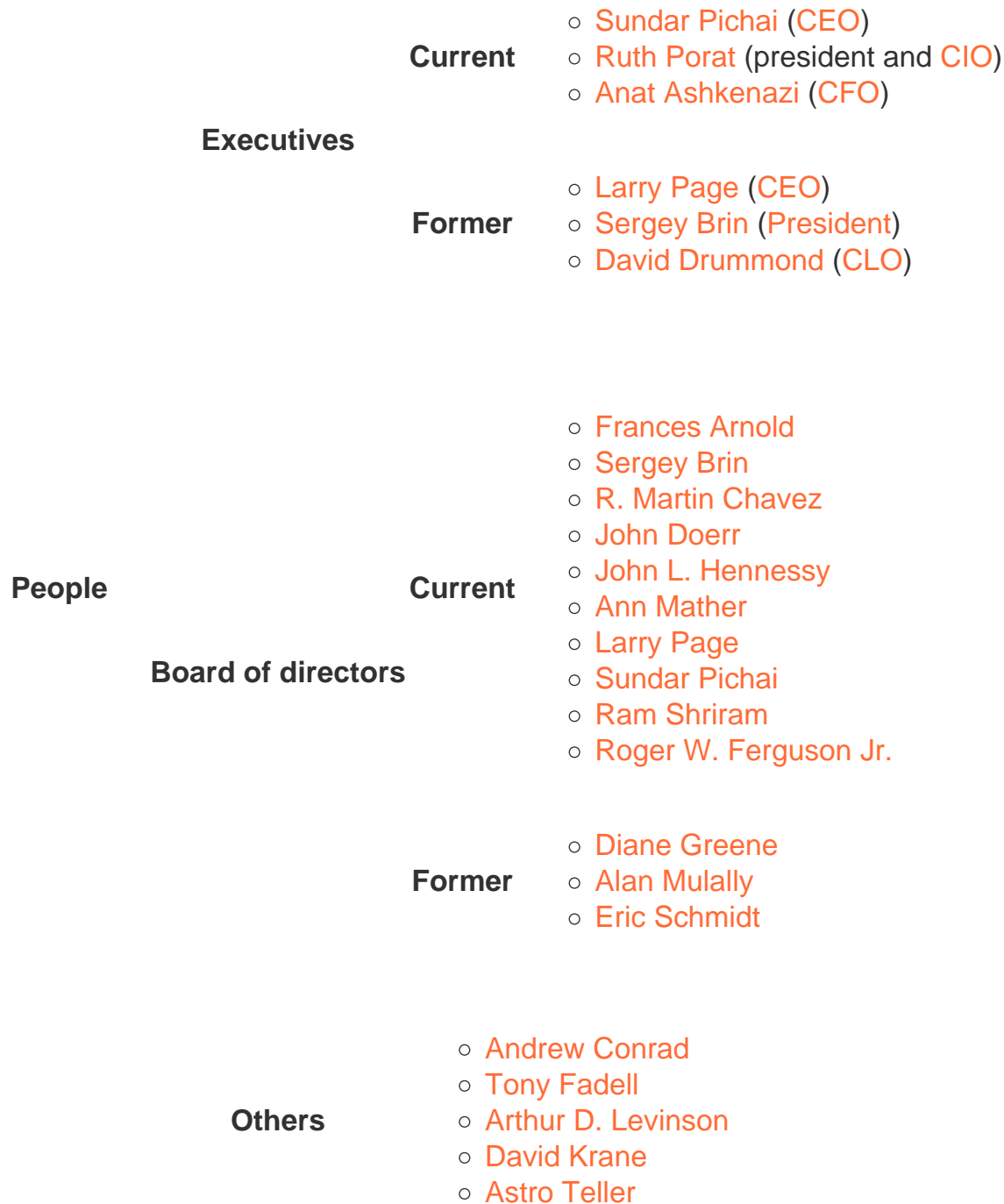
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| Former | <ul style="list-style-type: none"> ○ Boston Dynamics ○ Chronicle Security ○ Jigsaw ○ Loon ○ Makani ○ Meka Robotics ○ Nest Labs ○ Sidewalk Labs <ul style="list-style-type: none"> ○ Toronto ○ Vicarious |



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-  **Internet portal**

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Android

- Android Go
 - Comparison of products

| | | |
|----------------------|---|--|
| Development tools | Official | <ul style="list-style-type: none"> ◦ Android Runtime (ART) ◦ Software development kit (SDK) <ul style="list-style-type: none"> ◦ Android Debug Bridge (ADB) ◦ Fastboot ◦ Android App Bundle ◦ Android application package (APK) ◦ Bionic ◦ Dalvik ◦ Firebase <ul style="list-style-type: none"> ◦ Google Cloud Messaging (GCM) ◦ Firebase Cloud Messaging (FCM) ◦ Google Mobile Services (GMS) ◦ Native development kit (NDK) ◦ Open accessory development kit (OADK) ◦ RenderScript ◦ Skia ◦ AdMob ◦ Material Design ◦ Fonts <ul style="list-style-type: none"> ◦ Droid ◦ Roboto ◦ Noto ◦ Google Developers |
| | Other | <ul style="list-style-type: none"> ◦ OpenBinder ◦ Apache Harmony ◦ OpenJDK ◦ Gradle |
| Software development | Integrated development environments (IDE) | <ul style="list-style-type: none"> ◦ Android Studio <ul style="list-style-type: none"> ◦ IntelliJ IDEA ◦ Eclipse <ul style="list-style-type: none"> ◦ Android Development Tools (ADT) ◦ MIT App Inventor |
| | Languages, databases | <ul style="list-style-type: none"> ◦ Java ◦ Kotlin ◦ XML ◦ C ◦ C++ ◦ SQLite |
| Extended | | <ul style="list-style-type: none"> ◦ Android XR |

Releases

- Cupcake (1.5)
- Donut (1.6)
- Eclair (2.0–2.1)
- Froyo (2.2)
- Gingerbread (2.3)
- Honeycomb (3.x)
- Ice Cream Sandwich (4.0)
- Jelly Bean (4.1–4.3)
- KitKat (4.4)
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Derivatives

- Android Automotive
- Android Things
- TV
 - devices
- Android XR
- Wear OS

Devices

Pixel

- C
- Pixel & Pixel XL
- 2 & 2 XL
- 3 & 3 XL
 - 3a & 3a XL
- 4 & 4 XL
 - 4a & 4a (5G)
- 5
 - 5a
- 6 & 6 Pro
 - 6a
- 7 & 7 Pro
 - 7a
- Fold
- Tablet
- 8 & 8 Pro
 - 8a
- 9, 9 Pro & 9 Pro XL
 - 9 Pro Fold

Nexus

- One
- S
- Galaxy Nexus
- 4
- 10
- Q
- 5
 - 5X
- 6
 - 6P
- 7
 - 2012
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- 9
- Player

Play edition

- HTC One (M7)
- HTC One (M8)
- LG G Pad 8.3
- Moto G
- Samsung Galaxy S4
- Sony Xperia Z Ultra

- Android One
- other smartphones

Custom distributions

- AliOS
- Android-x86
 - Remix OS
- AOKP
- Baidu Yi
- Barnes & Noble Nook
- CalyxOS
- ColorOS
 - realme UI
- CopperheadOS
- EMUI
 - Magic UI
- Fire OS
- Flyme OS
- GrapheneOS
- Xiaomi HyperOS
 - MIUI
 - MIUI for Poco
- LeWa OS
- LineageOS
 - /e/
 - CrDroid
 - CyanogenMod
 - DivestOS
 - iodéOS
 - Kali NetHunter
- LiteOS
- Meta Horizon OS
- MicroG
- Nokia X software platform
- OmniROM
- OPhone
- OxygenOS
- PixelExperience
- Pixel UI
- Replicant
- Resurrection Remix OS
- SlimRoms
- TCL UI
- Ubuntu for Android
- XobotOS
- ZUI

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| Booting and recovery | <ul style="list-style-type: none">◦ Booting process◦ Recovery mode<ul style="list-style-type: none">◦ TWRP◦ ClockworkMod◦ Fastboot |
| APIs | <ul style="list-style-type: none">◦ Google Maps◦ Google Play Services<ul style="list-style-type: none">◦ SafetyNet◦ Google Search |
| Alternative UIs | <ul style="list-style-type: none">◦ Asus ZenFone◦ Cherry OS◦ ColorOS◦ EMUI◦ Funtouch OS◦ Flyme OS◦ HiOS◦ Hive UI (XOLO Hive)◦ HTC Sense◦ LG UX<ul style="list-style-type: none">◦ Optimus UI◦ Motoblur◦ One UI◦ Origin OS<ul style="list-style-type: none">◦ Experience◦ TouchWiz◦ OxygenOS◦ Pixel UI◦ XOS◦ Xperia UI |
| Rooting | <ul style="list-style-type: none">◦ SuperSU◦ Magisk◦ Kingo Root |
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What should I expect from SEO agencies in Sydney?

SEO agencies in Sydney typically offer comprehensive services such as keyword research, technical audits, on-page and off-page optimization, content creation, and performance tracking. Their goal is to increase your site's search engine rankings and drive more targeted traffic to your website.

Why is keyword research important for SEO?

Keyword research helps identify the terms and phrases that potential customers are using to search for products or services. By targeting these keywords in your content, you can improve your visibility in search engine results, attract more qualified leads, and drive higher conversion rates.

What sets SEO specialists in Sydney apart?

SEO specialists in Sydney often have deep expertise in the local market. They understand the competitive landscape, know which keywords resonate with Sydney-based audiences, and are skilled at optimizing websites to rank well in local search results.

What is SEO?

SEO, or search engine optimisation, is the practice of improving a website's visibility on search engines like Google. It involves optimizing various elements of a site such as keywords, content, meta tags, and technical structure to help it rank higher in search results.

How can a digital agency in Sydney help with SEO?

A digital agency in Sydney can offer a comprehensive approach, combining SEO with other marketing strategies like social media, PPC, and content marketing. By integrating these services, they help you achieve a stronger online presence and better ROI.

What does SEO mean for my business?

SEO, or search engine optimisation, means improving your website's structure, content, and overall performance to rank higher in search results. This leads to more organic traffic, increased brand visibility, and better conversion rates, ultimately supporting your business's growth.

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