

Internet

The internet is a vast network that connects millions of computers and devices worldwide, enabling communication, information sharing, and online services. It operates using various protocols, such as HTTP and TCP/IP, to facilitate data exchange across different platforms.

Browser

A web browser, on the other hand, is a software application that allows users to access and navigate the internet. Browsers interpret and display web pages written in HTML, CSS, and JavaScript. Common web browsers include Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari.



Computer network

A computer network is a system that connects multiple computers and devices to share resources and communicate. Networks can be classified based on their size and purpose:

Types of Networks

- **Local Area Network (LAN):** Covers a small area like a home, office, or school.
- **Wide Area Network (WAN):** Spans large geographical areas, often connecting multiple LANs.
- **Wireless Network:** Uses radio waves instead of physical cables for connectivity.
- **Metropolitan Area Network (MAN):** Larger than a LAN but smaller than a WAN, often used in cities.

Key Components

- **Nodes:** Devices like computers, printers, and routers connected within the network.
- **Switches & Hubs:** Manage data traffic within a LAN.
- **Routers:** Direct data between networks and connect to the internet.
- **Protocols:** Rules governing communication, such as TCP/IP, HTTP, and FTP.

Connecting to internet

Connecting to the internet involves linking your device to a network that provides access to online resources. Here are the main ways to connect:



1. Wired Connection

- Uses **Ethernet cables** to connect directly to a modem or router.
- Provides stable and fast internet, ideal for gaming and streaming.

2. Wireless Connection (Wi-Fi)

- Devices connect to a **Wi-Fi router** using radio waves.
- Convenient for mobile devices, though speed can vary based on distance and interference.

3. Mobile Data (Cellular Network)

- Uses **3G, 4G, or 5G** networks via a mobile carrier.
- Allows internet access on smartphones and tablets without Wi-Fi.

4. Satellite Connection

- Relies on satellites to provide internet access in remote areas.
- Often slower due to signal transmission distances.

Steps to Connect via Wi-Fi:

1. **Turn on Wi-Fi** on your device.
2. **Select a network** from the available list.
3. **Enter the password** (if required).
4. **Wait for connection confirmation** and start browsing!

World wide web

The **World Wide Web (WWW)** is a system that enables access to digital information over the internet. It was invented by **Tim Berners-Lee** in 1989 and revolutionized how people interact with data online.

Key Components of the Web

- **Web Pages:** Digital documents written in **HTML**, styled with **CSS**, and enhanced with **JavaScript**.

- **Web Browsers:** Programs like **Chrome, Edge, and Firefox** that allow users to navigate websites.
- **Hyperlinks:** Clickable links that connect web pages across different websites.
- **Web Servers:** Computers that store and deliver web pages to users.
- **URLs (Uniform Resource Locators):** Unique addresses used to locate web pages (e.g., <https://www.microsoft.com>).

How It Works

1. Users enter a **URL** into a web browser.
2. The browser sends a request to the corresponding **web server**.
3. The server responds by delivering the requested **web page**.
4. The browser renders the content for the user to view and interact with.

Web Browser

A **web browser** is a software application that allows users to access, retrieve, and display content on the World Wide Web. It acts as an intermediary between users and web servers, rendering websites that are built with **HTML, CSS, and JavaScript**.



Key Functions of a Web Browser

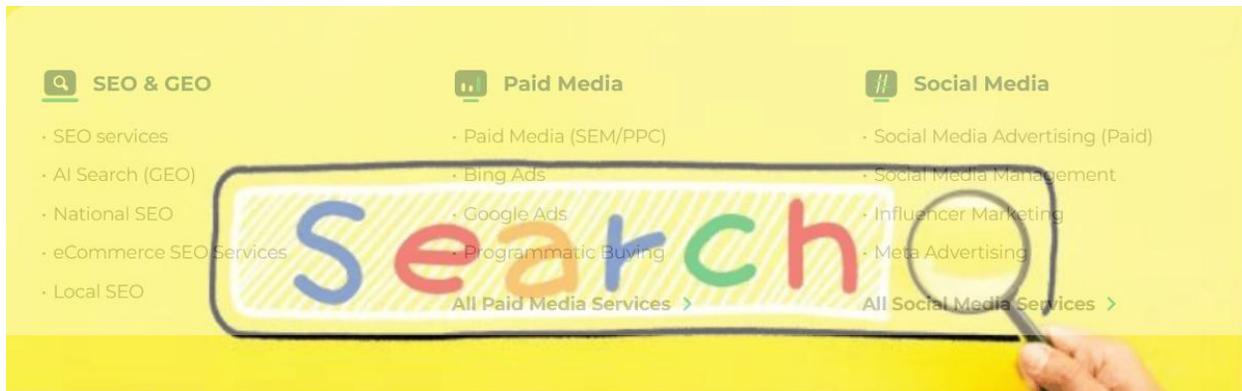
- **Interprets HTML & CSS:** Displays website content in a readable and interactive format.
- **Supports JavaScript:** Enables dynamic elements like animations and user interactions.
- **Handles URLs:** Uses addresses like `https://www.microsoft.com` to locate web pages.
- **Maintains Cache & Cookies:** Stores temporary data to improve browsing efficiency.
- **Ensures Security:** Implements features like **HTTPS, pop-up blockers, and private browsing**.

Popular Web Browsers

- **Google Chrome:** Fast and widely used, supports extensive extensions.
- **Mozilla Firefox:** Open-source and privacy-focused.
- **Microsoft Edge:** Integrated with Windows and optimized for performance.
- **Safari:** Designed for Apple devices, offering seamless user experience.
- **Opera:** Known for built-in ad-blocking and VPN features.

Search engine

A **search engine** is a software system designed to help users find information on the internet by retrieving relevant web pages based on keywords or queries. It scans billions of web pages, indexes them, and ranks results based on relevance.



Do You Know The Most Common Search Engines?

How Search Engines Work

1. **Crawling:** Search engines use automated programs called **web crawlers** to scan websites and gather data.
2. **Indexing:** The collected data is stored in a massive database, allowing quick access to relevant information.
3. **Ranking:** Algorithms analyze content, keywords, and links to determine the most relevant results for a user's query.

Popular Search Engines

- **Google:** The most widely used, known for its accurate results and AI-driven search ranking.
- **Bing:** Microsoft's search engine, offering high-quality image and video searches.
- **Yahoo:** A longstanding search engine with integrated news and email features.
- **DuckDuckGo:** Focuses on privacy, avoiding personalized data tracking.