

What is a computer?

A **computer** is a [digital electronic machine](#) that can be programmed to [carry out sequences of arithmetic](#) or [logical operations \(computation\)](#) automatically. Modern computers can perform generic sets of operations known as [programs](#). These programs enable computers to perform a wide range of tasks. A **computer system** is a "complete" computer that includes the [hardware](#), [operating system](#) (main [software](#)), and [peripheral](#) equipment needed and used for "full" operation. This term may also refer to a group of computers that are linked and function together, such as a [computer network](#) or [computer cluster](#).

A broad range of [industrial](#) and [consumer products](#) use computers as [control systems](#). Simple special-purpose devices like [microwave ovens](#) and [remote controls](#) are included, as are factory devices like [industrial robots](#) and [computer-aided design](#), as well as general-purpose devices like [personal computers](#) and [mobile devices](#) like [smartphones](#). Computers power the [Internet](#), which links billions of other computers and users.

Early computers were meant to be used only for calculations. Simple manual instruments like the [abacus](#) have aided people in doing calculations since ancient times. Early in the [Industrial Revolution](#), some mechanical devices were built to automate long tedious tasks, such as guiding patterns for [looms](#). More sophisticated electrical [machines](#) did specialized [analog](#) calculations in the early 20th century. The first [digital](#) electronic calculating machines were developed during [World War II](#). The first [semiconductor transistors](#) in the late 1940s were followed by the [silicon](#)-based [MOSFET](#) (MOS transistor) and [monolithic integrated circuit](#) (IC) chip technologies in the late 1950s, leading to the [microprocessor](#) and the [microcomputer revolution](#) in the 1970s. The speed, power and versatility of computers have been increasing dramatically ever since then, with [transistor counts](#) increasing at a rapid pace (as predicted by [Moore's law](#)), leading to the [Digital Revolution](#) during the late 20th to early 21st centuries.

Conventionally, a modern computer consists of at least one [processing element](#), typically a [central processing unit](#) (CPU) in the form of a [microprocessor](#), along with some type of [computer memory](#), typically [semiconductor memory](#) chips. The processing element carries out arithmetic and logical operations, and a sequencing and control unit can change the order of operations in response to stored [information](#). [Peripheral](#) devices include input devices (keyboards, mice, [joystick](#), etc.), output devices (monitor screens, [printers](#), etc.), and input/output devices that perform both functions (e.g., the 2000s-era [touchscreen](#)). Peripheral devices allow information to be retrieved from an external source and they enable the result of operations to be saved and retrieved.