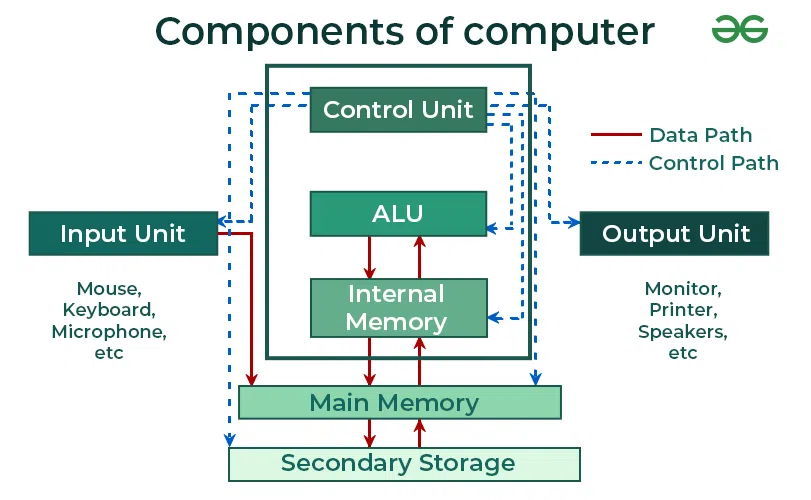
**BASICS OF COMPUTER**

A computer system is a collection of interconnected hardware (physical parts) and software (programs and instructions) that work together to process data and produce information. It consists of components like a [central processing unit (CPU)](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&q=central+processing+unit+%28CPU%29&sa=X&ved=2ahUKEwj684Tok4iQAxVXzTgGHfpkFIMQxccNegQIJxAB&mstk=AUtExfAHpkdQV2i_Lf6mkKbrk-StCMCx6ryImM76HdpI5yUj_Yw-k5vLvj23Cuy_UWc99_Ex7zZWrO8s3rENOvwCfK77Lke3KP6ku_J5GIziO6X20gbCz4tkdFG2823watEixn6hKlWrI536wN5pPcVPJF1WnApE_bl161Em0l9gC_lEykk&csui=3), [memory](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&q=memory&sa=X&ved=2ahUKEwj684Tok4iQAxVXzTgGHfpkFIMQxccNegQIJxAC&mstk=AUtExfAHpkdQV2i_Lf6mkKbrk-StCMCx6ryImM76HdpI5yUj_Yw-k5vLvj23Cuy_UWc99_Ex7zZWrO8s3rENOvwCfK77Lke3KP6ku_J5GIziO6X20gbCz4tkdFG2823watEixn6hKlWrI536wN5pPcVPJF1WnApE_bl161Em0l9gC_lEykk&csui=3), input/output (I/O) devices, and storage, all managed by system software to run application programs for specific user tasks.

# Components of computer system :



A computer system is composed of hardware and software that work together to perform tasks. The key hardware components include the CPU, memory (RAM), storage devices (HDD/SSD), input devices (keyboard, mouse), and output devices (monitor, printer). Software comprises the operating system and applications that run on the hardware.

# Operating System :

An operating system (OS) is the most crucial software on a computer, acting as an intermediary between the user and the hardware. It manages the computer's resources, such as the CPU, memory, and storage, and provides an interface to run applications and interact with the device. Key functions of an OS include process management, memory management, file management, input/output (I/O) handling, and controlling peripheral devices. Popular examples of operating systems are [Microsoft Windows](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&biw=1422&bih=659&q=Microsoft+Windows&sa=X&ved=2ahUKEwib1ZGAloiQAxW_SWwGHdyxJaQQxccNegQIKBAB&mstk=AUtExfBsCHSGvagDv7Jvq0xEWg0Mht6rTF91nFGmmXr1-K5-nlx88ISQ2CWMbskWEBcBlHdbY33NIJGWcXOtvTrssZLK-3Lag6QPsLOZLwSWl7d0rO68yCVpkgSl04T8RIs3Jj-SsMJi5y9dads24HRJAjzKlCzxzmHyJNul20iPaw2gCGcUlVwZmtMXepSiHQPH9vPiclRuJQExxhZZ7LufF62rXA&csui=3), [Linux](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&biw=1422&bih=659&q=Linux&sa=X&ved=2ahUKEwib1ZGAloiQAxW_SWwGHdyxJaQQxccNegQIKBAC&mstk=AUtExfBsCHSGvagDv7Jvq0xEWg0Mht6rTF91nFGmmXr1-K5-nlx88ISQ2CWMbskWEBcBlHdbY33NIJGWcXOtvTrssZLK-3Lag6QPsLOZLwSWl7d0rO68yCVpkgSl04T8RIs3Jj-SsMJi5y9dads24HRJAjzKlCzxzmHyJNul20iPaw2gCGcUlVwZmtMXepSiHQPH9vPiclRuJQExxhZZ7LufF62rXA&csui=3), [macOS](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&biw=1422&bih=659&q=macOS&sa=X&ved=2ahUKEwib1ZGAloiQAxW_SWwGHdyxJaQQxccNegQIKBAD&mstk=AUtExfBsCHSGvagDv7Jvq0xEWg0Mht6rTF91nFGmmXr1-K5-nlx88ISQ2CWMbskWEBcBlHdbY33NIJGWcXOtvTrssZLK-3Lag6QPsLOZLwSWl7d0rO68yCVpkgSl04T8RIs3Jj-SsMJi5y9dads24HRJAjzKlCzxzmHyJNul20iPaw2gCGcUlVwZmtMXepSiHQPH9vPiclRuJQExxhZZ7LufF62rXA&csui=3" \t "_blank), and [Android](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&biw=1422&bih=659&q=Android&sa=X&ved=2ahUKEwib1ZGAloiQAxW_SWwGHdyxJaQQxccNegQIKBAE&mstk=AUtExfBsCHSGvagDv7Jvq0xEWg0Mht6rTF91nFGmmXr1-K5-nlx88ISQ2CWMbskWEBcBlHdbY33NIJGWcXOtvTrssZLK-3Lag6QPsLOZLwSWl7d0rO68yCVpkgSl04T8RIs3Jj-SsMJi5y9dads24HRJAjzKlCzxzmHyJNul20iPaw2gCGcUlVwZmtMXepSiHQPH9vPiclRuJQExxhZZ7LufF62rXA&csui=3).

# Introduction to Major Operating Systems :

**Windows OS**



**Developer:** Microsoft.

**Key Features:** Known for its user-friendly interface and wide compatibility with hardware and software. It is the most widely used OS for personal computers.

**Common Uses:** Business environments, gaming, and general personal computing.

[**macOS**](https://www.google.com/search?sca_esv=ea1d5f3fa4ef2f46&rlz=1C1CHBD_enIN1075IN1076&cs=0&q=macOS&sa=X&ved=2ahUKEwiMlcz1loiQAxUnUGcHHd6wOYcQxccNegQIXBAC&mstk=AUtExfB3153a_q1kBOsScDat1lRhYuAo4hPeHuIjbMkP3t9UxZZNcCcqq_63qIECKjUKPAwW2TnO5hFJY03toAQFKCCA7od_XHOJgRdDmnH40Kjeg0Csn7A-grzPj2K6MDOQZzIa0BA7cunzPNXH3sPkTHxN0ffAKbm7xzR0XYsDUxBuW9PBByg6ucbPR3uCJ0HXRP3WeHd3NlOkSJnZ6XuWf2AL-g&csui=3)

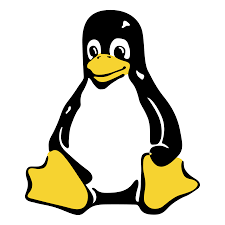


**Developer:** Apple.

**Key Features:** Exclusively used on Apple's Macintosh computers, it's recognized for its sleek design and strong integration with other Apple products.

**Common Uses:** Creative industries (design, video editing), professional environments, and personal computing.

**Linux**



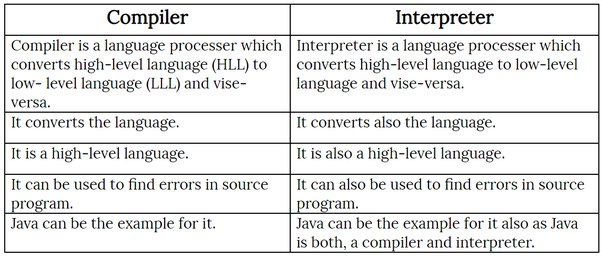
**Developer:** Community-driven and open-source.

**Key Features:** A free, open-source operating system that is highly customizable and secure.

**Common Uses:** Servers, data centers, development, and for tech enthusiasts who prefer a flexible system.

# Compiler and Interpreter :

Compilers and interpreters are both used to translate code from a high-level programming language into a low-level language that a computer can understand.



# Concepts of languages in C program:

**Machine-level language** - It'salso known as machine code, is the lowest level of programming language, directly understood by a computer's CPU. It consists of binary digits (0s and 1s) representing instructions and data. This language is inherently difficult for humans to read and write due to its lack of structure and reliance on binary code.

**Assembly level language** -

Assembly level language is a low-level programming language that serves as a symbolic representation of machine code. It provides a more human-readable form of instructions that a computer's processor can execute directly.

**High level language** -

High-level programming languages are designed to be easy for humans to read, write, and understand, offering a high level of abstraction from the computer's hardware.

# Concepts of Hardware:

Computer hardware refers to the physical components of a computer system that you can touch and see.

# Central Processing Unit (CPU): The "brain" of the computer, responsible for executing instructions.

# Random Access Memory (RAM): Temporary storage for data the CPU is actively using.

# Keyboard: For text input.

# Mouse: For navigation and control.

# Microphone: For audio input.

# Processing: The execution of instructions by the CPU.

# Storage: The ability to store data for later use.

# Monitor: Displays visual information.

# Printer: For printing documents.

# Speakers: For audio output.