



The Islamia University of Bahawalpur Pakistan



# Introduction to Computer

Computer System Architecture

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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# **Computer Software Hardware & User Interface**

# Computer Software

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- **Software:** Software refers to the programs and operating instructions that tell hardware what to do. It is intangible and runs on hardware.
- **Types:**
- **System Software:** Operates and manages hardware (e.g., Operating Systems like Windows, Linux, macOS).
- **Application Software:** Helps users perform tasks (e.g., word processors, games, browsers).
- **Middleware:** Acts as a bridge between system software and application software.
- **Examples:** Microsoft Word, Photoshop, Google Chrome, Flutter SDK.

# Softwares





# Hardware

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- **Hardware:** The physical parts of computer system that we can touch & feel are known as computer hardware.
- **Types:**
- **Input Devices:** Used to send data to a computer (e.g., keyboard, mouse, microphone).
- **Output Devices:** Display or produce results from the computer (e.g., monitor, printer, speakers).
- **Storage Devices:** Store data (e.g., hard drives, SSDs, USB drives).
- **Processing Units:** Process data (e.g., CPU, GPU).
- **Networking Components:** Facilitate connectivity (e.g., routers, network adapters).
- **Examples:** Motherboard, RAM, hard drives, cameras.

# Computer Hardware

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# User Interface

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- **User Interface:** Allows users to interact with the computer, including the physical devices (keyboard, mouse) and the operating system interface (desktop, windows 6 ,7,8,10,11,Linux,Unix).
- **Types:**
- **Graphical User Interface (GUI):** Involves visual elements like windows, icons, buttons (e.g., Windows OS, mobile apps).
- **Command-Line Interface (CLI):** Text-based, requiring typed commands (e.g., Terminal, Command Prompt).



# Command Line & Graphical User Interface

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## Command Line Interface

```
cmd Command Prompt - flutter doctor
Microsoft Windows [Version 10.0.19045.5131]
(c) Microsoft Corporation. All rights reserved.

C:\Users\NoorMustafa>flutter doctor

A new version of Flutter is available!
To update to the latest version, run "flutter upgrade".

Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 3.24.4, on Microsoft Windows [Version 10.0.19045.5131], locale en-US)
[✓] Windows Version (Installed version of Windows is version 10 or higher)
[✓] Android toolchain - develop for Android devices (Android SDK version 35.0.0)
[✓] Chrome - develop for the web
[✗] Visual Studio - develop Windows apps
    X Visual Studio not installed; this is necessary to develop Windows apps.
      Download at https://visualstudio.microsoft.com/downloads/.
      Please install the "Desktop development with C++" workload, including all of its default components
[✓] Android Studio (version 2024.1)
[✓] VS Code (version 1.95.2)
[✓] Connected device (3 available)
[✓] Network resources

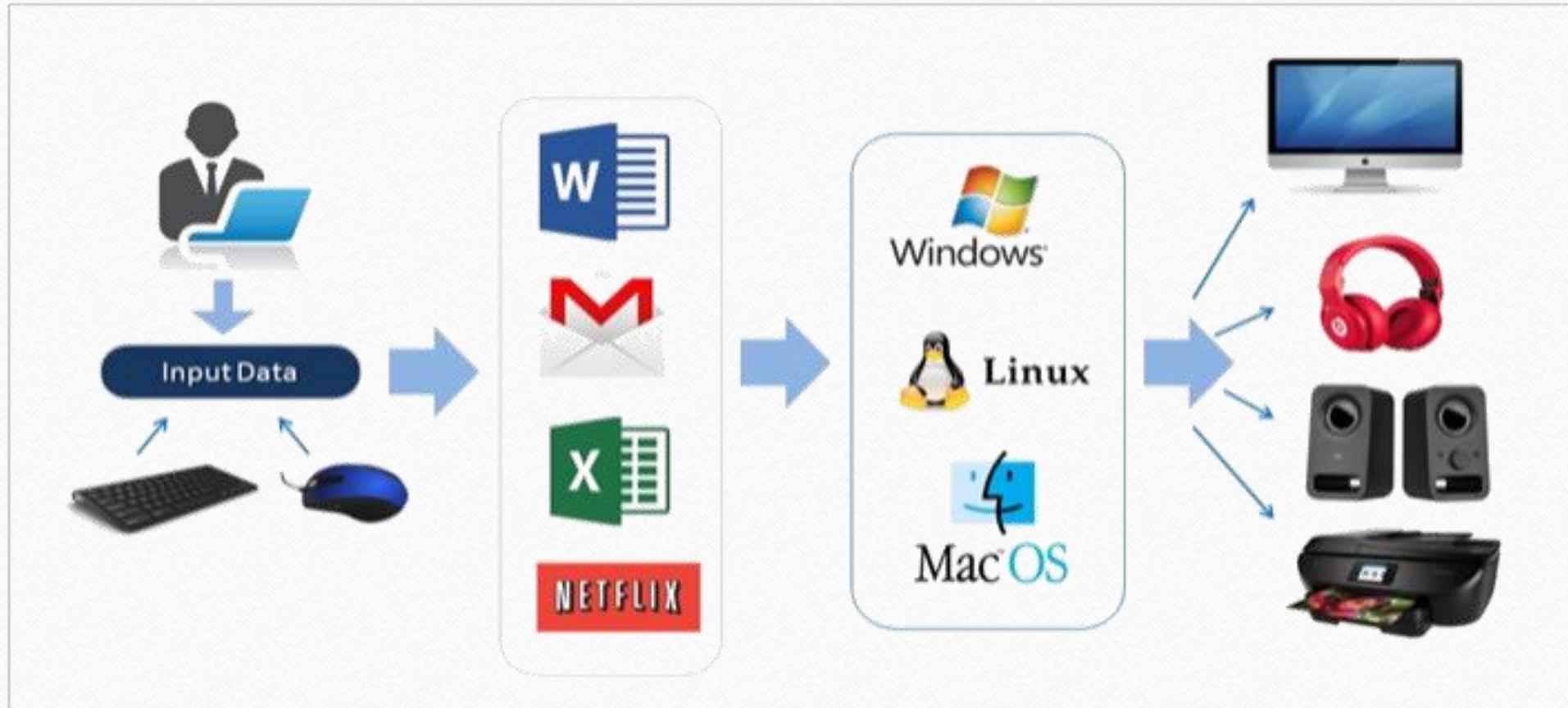
! Doctor found issues in 1 category.

C:\Users\NoorMustafa>
```

## Graphical User Interface



## Introduction To Computer System



User → Input → Application Software → Operating System → Output



