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CODE WITH AMIT

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BASICS OF PROGRAMMING

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Computer ?

A computer is a machine that works only when we give it instructions.

It does not think on its own.

Example:

If we tell the computer to add $2 + 3$, it will give 5. But without our instruction, it will do nothing.

Difference between Hardware and Software

Hardware

The **physical parts** of a computer that we can **see and touch**.

Example: Keyboard, Mouse, Monitor, CPU, Printer.

Think of it like the **body** of a human.

Operating System (OS)?

Software

The **programs** or instructions that tell the computer what to do.

We cannot touch **software**, but we can use it.

Example:

MS Word, Google Chrome, Games, WhatsApp. Think of it like the **mind** of a human.

Difference between Hardware and Software

Hardware + Software = Computer works.

Without software, hardware (computer parts) is useless.

Examples of Software

Games → like Candy Crush

WhatsApp → to chat

Think of a TV:

- The TV box is **hardware**.
- The channels and programs you watch are **software**.
- So, hardware is the body, and software is the mind that gives life to the computer.

Operating System (OS)?

An **operating system** is a **special software** that connects us with the computer.

Without **OS**, we cannot use the computer easily.

Example: **Windows, Linux, MacOS, Android.**

When we press a key on keyboard, **hardware** sends signal.

Operating System understands it and shows the letter on screen.

What is language and Program?

Language is a way of talking or communicating with others.

Example: Hindi, English.

Program

A program is a group of instructions.

These **instructions** tell the computer what to do to complete a task.

What is programming language ?

Way to talk to computer.

A programming language is a way to **give instructions** to a computer.

The computer does not understand it directly.

So, the program is converted into **machine language (0s and 1s)** with special software.

Example:

If we want the computer to **add two numbers**, we write a program in **Java, C, or Python**.

The program is then converted into machine language, and the computer shows the result.

Understanding Instructions

Give real time example.

Computers work step by step.

Example: If we want the computer to calculate $2 + 3$, we must give clear steps.

Concepts to explain:

Input (giving data)

Process (calculations)

Output (result shown)

First Steps in Programming

Variables → like a container that stores data.

Example: `x = 5`

Data Types → numbers, text, true/false values.

Operators → `+`, `-`, `*`, `÷`

Control Flow

If-Else → Making decisions.

Example: If it rains, take umbrella.

Loops → Doing something again and again.

Example: Print your name 5 times.

Functions

Small blocks of code that do one job.

Example: A function to add two numbers.

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Writing First Program

Print Hello World text on screen,

Will See you in the next video.

Thankyou