Have you ever wondered how your favorite apps like **Instagram, YouTube**, or even your **calculator** work behind the scenes? Today, you're going to take the first step towards understanding how software is actually made.

Think about this — your **mobile phone, smartwatch, ATM,** even the **microwave** at home… all of them are controlled by code. But what is this 'code'? Today, we'll begin learning the language that helps control machines — C Programming.

Day 0: C Programming - Introduction & Setup

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1. What is Programming?

- Definition: A way to instruct the computer to perform specific tasks.

- Sub-topics:

- - Computers understand only binary (0s and 1s).

- - Programming languages help humans give instructions in a readable form.

- - Real-life analogy: Programming is like giving a recipe to a cook.

2. What is C and Where is it Used?

- Definition: C is a general-purpose, procedural programming language developed in the 1970s.

- Sub-topics:

- - Features: Fast, low-level memory access, structured language.

- - Where it's used:

- - Operating systems (UNIX/Linux)

- - Embedded systems

- - Microcontrollers

- - System-level programming

3. Structure of a Basic C Program

```c
#include<stdio.h>

int main() {
    printf("Hello, World!\n");
    return 0;

}
```

- Sub-topics:

- #include<stdio.h>: for input-output functions

- int main(): Entry point

- printf(): Print statement

- return 0;

4. IDE Setup

- You can teach Turbo C, Code::Blocks, or VS Code + GCC.

- Turbo C:

- - Traditional choice, simple for beginners

- Code::Blocks:

- - Clean UI, built-in compiler

- VS Code + GCC:

- - Modern and flexible

- - Install VS Code, GCC

- - Setup environment variables

- - Install C/C++ extensions

5. Write and Run First Program

```c
#include<stdio.h>

int main() {

    printf("Hello Larry Batch!\n");

    return 0;

}
```

- Demonstrate:

- - Save .c file

- - Compile and run

- - Show common syntax errors

Hands-on Practice

- - Print your name using printf()

- - Print Welcome message

- - Create a syntax error and explain how to fix it

Goals for the Day

- - Understand what programming and C are

- - Compile and run basic programs

- - Understand program structure

- - Get familiar with an IDE