

Setting Up Environment

3. Describe the steps to install a C compiler (e.g., GCC) and set up an Integrated Development Environment (IDE) like DevC++, VS Code, or CodeBlocks.

→ Install GCC Compiler:

Windows : Download and install MinGW from the official site and add C:\MinGW\bin to your system PATH to access GCC.

Linux: Open Terminal and install with `sudo apt install gcc`.

macOS: Install Xcode Command Line Tools using `xcode select --install` in Terminal.

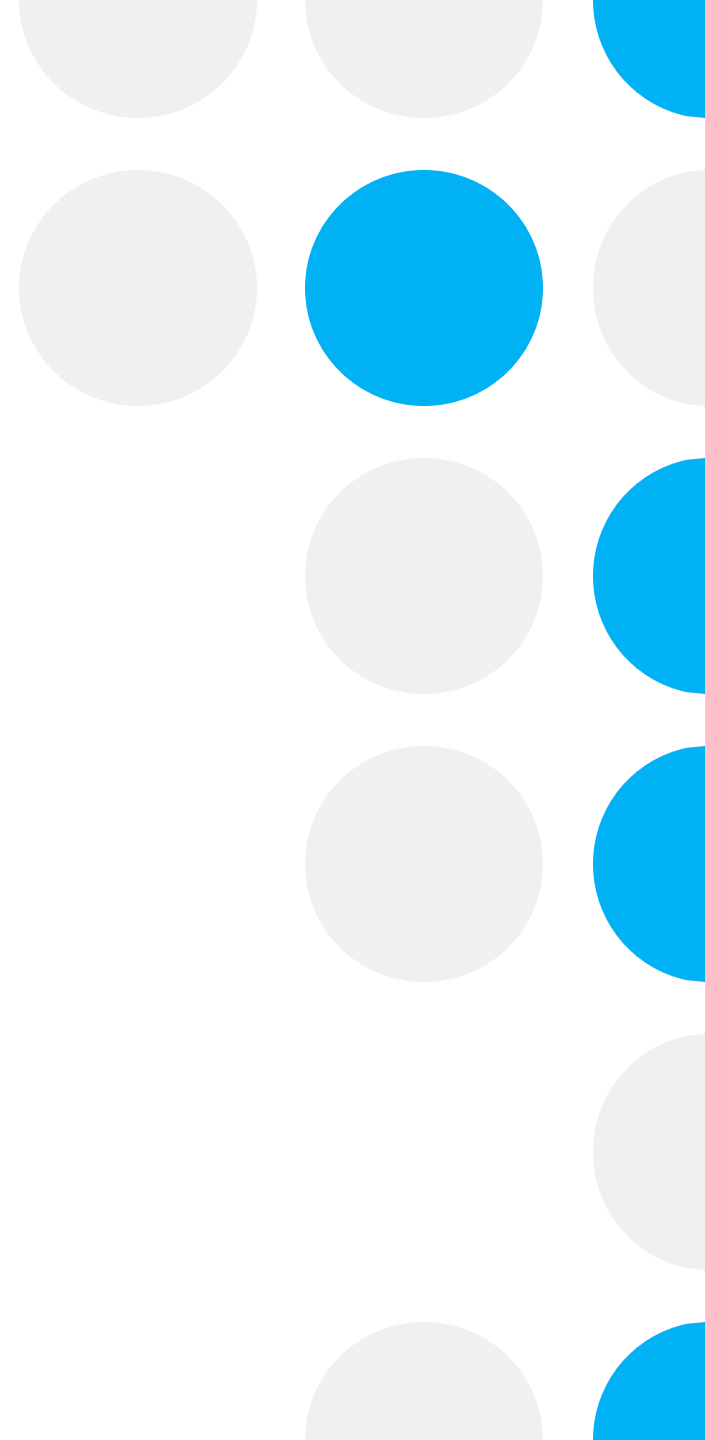
→ **Setting Up an IDE:**

DevC++: Download from SourceForge, install, and set GCC as the default compiler in Tools > Compiler Options.

VS Code: Download from the official site, install the C/C++ extension by Microsoft, and verify GCC in the integrated terminal.

Code::Blocks: Download the version with MinGW included, install, and ensure GCC is detected under Settings > Compiler.

→ This setup allows you to compile and run C programs easily.



4. Install a C compiler on your system and configure the IDE. Write your first program to print "Hello, World!" and run it.

→ basic C program structure consists of several key components:

→ **Headers:** These are library files included at the beginning, using `#include`. For example, `#include` provides functions like `printf()` and `scanf()`.

→ `#include <stdio.h>`

→ **Main Function:** The `main()` function is the entry point where execution starts. Every C program must have a `main()` function.

→ `int main(){`

→ `// Code here`

→ `return 0;`

→ `}`

→ **Comments:** Comments are notes in the code that are ignored by the compiler. Single-line comments use `//`, and multi-line comments are enclosed by `/* ... */`

→ `// This is a single-line comment`

→ `/* This is a multi-line comment */`

→ **Data Types and Variables:** C has various data types (int, float, char, etc.) used to declare variables that store data.

→ `int age = 25; // Integer variable`

→ `float height = 5.9; // Float variable`

→ `char initial = 'A'; // Character variable`

→ **Example of Code**

→ `#include <stdio.h>`

→ `int main() {`

→ `int age = 25; // Variable to store age`

→ `float height = 5.9; // Variable for height`

→ `char initial = 'A'; // Initial letter`

→ `printf("Age: %d\n", age); // Print age`

→ `printf("Height: %.1f\n", height); // Print height`

→ `printf("Initial: %c\n", initial); // Print initial`

→ `return 0;`

→ `}`

