**C++ Basics – Beginner’s Instruction Guide**

**✅ 1. What is C++?**

C++ is a general-purpose, high-performance programming language used for system/software development, games, embedded systems, and more.

**✅ 2. Your First C++ Program**

#include <iostream> // Include input-output library

int main() {

std::cout << "Hello, world!" << std::endl; // Print to screen

return 0; // Exit the program

}

**🔹 Explanation:**

* #include <iostream> – Includes the input-output stream library.
* int main() – Entry point of the program.
* std::cout – Standard output stream (prints text).
* return 0; – Ends the program successfully.

**✅ 3. Basic Syntax**

**🔹 Variables**

int age = 25;

float height = 1.75;

char grade = 'A';

bool isStudent = true;

**🔹 Data Types**

| **Type** | **Example** | **Description** |
| --- | --- | --- |
| int | 10 | Integer numbers |
| float | 3.14 | Decimal numbers |
| char | 'A' | Single characters |
| bool | true/false | Boolean (logic) values |
| string | "text" | Text |

**✅ 4. Input and Output**

#include <iostream>

using namespace std;

int main() {

int age;

cout << "Enter your age: ";

cin >> age; // Input from user

cout << "You are " << age << " years old.\n";

return 0;

}

**✅ 5. Control Structures**

**🔹 If-Else**

if (age >= 18) {

cout << "Adult";

} else {

cout << "Minor";

}

**🔹 For Loop**

for (int i = 0; i < 5; i++) {

cout << i << " ";

}

**🔹 While Loop**

int i = 0;

while (i < 5) {

cout << i << " ";

i++;

}

**✅ 6. Functions**

int add(int a, int b) {

return a + b;

}

int main() {

cout << add(3, 5); // Outputs 8

}

**✅ 7. Arrays**

int numbers[3] = {1, 2, 3};

cout << numbers[0]; // Outputs 1