# C++ Input and Output (I/O) Explained

#### Introduction

In C++, input and output operations are performed using the standard input (cin) and output (cout) streams provided by the <iostream> library. This document explains the basic usage of cin and cout with an example program.

### Understanding cin and cout

- cout (Character Output): Used to display output on the screen.
- cin (Character Input): Used to take input from the user.
- << (Insertion Operator): Used with cout to print data.
- >> (Extraction Operator): Used with cin to take input.

# **Example Program**

```
#include<iostream>
using namespace std;

int main() {
   int a; // Declaring variable a
   int b; // Declaring variable b

   cout << "Enter the value of a and b: "; // Asking user for input
   cin >> a >> b; // Taking input from the user

   cout << "The sum of a and b is: " << a + b; // Printing the sum
   return 0;
}</pre>
```

# **Explanation of the Code**

- 1. #include<iostream> This library is required for input and output operations.
- 2. **using namespace std;** This allows us to use cout and cin without writing std::cout or std::cin.

- 3. **int a, b;** Declares two integer variables.
- 4. **cout << "Enter the value of a and b: "**; Displays a message asking for user input.
- 5. **cin >> a >> b;** Takes two integer inputs from the user and stores them in a and b.
- 6. **cout << "The sum of a and b is: " << a + b;** Displays the sum of a and b.
- 7. **return 0;** Indicates successful program execution.

## Common Mistakes in C++ I/O

- 1. **Forgetting #include<iostream>** This will cause cin and cout to be undefined.
- 2. **Missing using namespace std;** Requires std::cout and std::cin instead of cout and cin.
- 3. **Incorrect usage of insertion (<<) operator** Example:
- 4. cout << "The sum of a and b is:<<a+b; // X Incorrect

#### Corrected version:

cout << "The sum of a and b is: " << a + b; // ✓ Correct

# **Output Example**

### Input:

Enter the value of a and b: 5 10

# Output:

The sum of a and b is: 15

This concludes the basic explanation of input and output in C++.