

# C++ Programming – Basic Notes (Easy for Everyone)

## What is C++?

C++ is a computer programming language.

A programming language is used to give instructions to a computer.

Using C++, we can tell the computer to: \* Calculate numbers \* Store information \* Show output on screen \* Make software, games, and apps

## Why Learn C++?

C++ is one of the most popular and powerful languages.

### Benefits of C++:

- Easy to start with basic programs
- Very fast language
- Used in many fields
- Good base for learning other languages

## Uses of C++

- Software development (Windows software, tools)
- Game development
- Mobile and desktop applications
- Embedded systems (machines, robots)
- Scientific and mathematical programs

## How C++ Program Works

1. Write code in C++
2. Computer reads it
3. Computer performs the task
4. Get output

## Basic Structure of a C++ Program

1. Header files
2. Main function
3. Statements (instructions)

## Header File

```
#include <iostream>
```

\* Includes basic tools for input/output

## main() Function

```
int main()  
{  
}
```

\* Starting point of every C++ program

## Statements (Instructions)

```
cout << "Hello World";
```

\* Prints text on screen

## Complete First Program

```
#include <iostream>  
using namespace std;  
  
int main()  
{  
    cout << "Hello World";  
    return 0;  
}
```

## Comments in C++

### Single-line comment:

```
// This is a comment
```

## Multi-line comment:

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

## Variables

A variable is a box that stores data.

```
int age = 20;
```

\* `int` → type of data \* `age` → name of variable \* `20` → value

## Data Types

Data Type	Used For	Example
int	Whole numbers	10, 25
float	Decimal numbers	2.5, 3.14
char	Single letter	'A'
string	Words or sentences	"Hello"

## Input from User

```
int x;  
cin >> x;
```

\* Takes input from user

## Output on Screen

```
cout << x;
```

\* Shows value on screen

## Semicolon (;)

- Every C++ instruction ends with ;
- Without ; → error

## Common Beginner Mistakes

- Forgetting semicolon ;
- Writing code outside main()
- Misspelling keywords
- Forgetting header file