Programming Fundamentals:

Intro of C++

First code

What needs to write a simple code that prints Hello World on Screen?

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- Libraries
- Scope
- Main Function
- Print Function
- Returning value

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- Scope
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Library: Libraries are predefined files of codes that are required for the specified task and functionalities.

Scope: Scope defines the area where the items are accessible.

Main Function: Required in every C++ program the code starts its execution from the main Function.

Returning Value: it returns a value at the end of the main program; therefore, we make sure that our program runs correctly.

First code

What needs to write a simple code that prints Hello World on Screen?

```
#include <iostream>

int main() {
  std::cout << “Hello, World!” << std::endl;
  return 0;
}
```

Console:

```
Hello, World!

Process finished with exit code 0
```

First code

```cpp
#include <iostream> // Including a library

using namespace std; // Defining a scope

// dedining main function
int main() {
  cout << “Hello, World!” << endl; // Printing
  return 0; // Returning Zero
}
```

```
Hello, World!

Process finished with exit code 0
```

First code

What more needs to write a simple code that prints the value of a variable on the Screen?

Variables

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- Variable Declaration
  - Variable DataType
- Variable Assignment
- Displaying the Variable’s value

Variables

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- Variable Declaration
  - Variable DataType
- Variable Assignment
- Displaying the Variable’s value

Variable: A Variable has a defined name with a changeable value.
Variable Declaration: Variable name and its **Datatypes** are defined before assigning any value to it.
DataType: In computer science Datatype is defined that specifying which type of value can be stored in the variable.
Variable Assignment: Process of assigning a value to a variable.
Displaying The Variable’s Value: Using the printing function `Cout` We can display the value of a defined variable.

Data Type

Data Type	Meaning	Size (in Bytes)
int	Integer	2 or 4
float	Floating-point	4
double	Double Floating-point	8
char	Character	1
wchar_t	Wide Character	2
bool	Boolean	1
void	Empty	0

Variable Declaration

What more needs to write a simple code that prints the value of a variable on the Screen?

```cpp
#include <iostream>

using namespace std;

int main() {
    int var; // Defining variable with datatype of int
    var = 10; // Assigning value to variable var
    cout << var << endl;
    return 0;
}
```

```
10

Process finished with exit code 0
```

Variable Declaration

What more needs to write a simple code that prints the value of a variable on the Screen?

```
#include <iostream>

using namespace std;

int main() {
    int var;
    var = 10;
    cout << “The value of var is: ” << var << endl;
    return 0;
}
```

```
The Value of var is: 10

Process finished with exit code 0
```

Variable Declaration

Write a code to Add two numbers and print the addition.

```
#include <iostream>

using namespace std;

int main() {
    int num1;
    int num2;
    int sum;
    num1 = 2;
    num2 = 3;
    sum = num1 + num2; // Arithmetic operation
    cout << “The sum is: ” << sum << endl;
    return 0;
}
```

```
The sum is: 5

Process finished with exit code 0
```

Variable Declaration

Write a code to Add two numbers and print the addition.

```
#include <iostream>

using namespace std;

int main() {
    int num1;
    int num2;
    int sum;
    num1 = 2;
    num2 = 3;
    sum = num1 + num2;
    cout<<“The sum of ”<<num1<<“ and ”<<num2<<“ is: ”<<sum<<endl;
    return 0;
}
```

```
The sum of 2 and 3 is: 5

Process finished with exit code 0
```

Fetching Input

Write a code to get two numbers from intput and print the sum.

Fetching Input

Write a code to get two numbers from intput and print the sum.

```
#include <iostream>

using namespace std;

int main() {
    int num1, num2, sum;
    cin>>num1;
    cin>>num2;
    sum = num1 + num2;
    cout<<“The sum of ”<<num1<<“ and ”<<num2<<“ is: ”<<sum<<endl;
    return 0;
}
```

```
2
3
The sum of 2 and 3 is: 5

Process finished with exit code 0
```

Fetching Input

Write a code to get two numbers from intput and print the sum.

```
#include <iostream>

using namespace std;

int main() {
    int num1, num2, sum;
    cout<<“Enter the First Number”<<endl;
    cin>>num1;
    cout<<“Enter the Second Number”<<endl;
    cin>>num2;
    sum = num1 + num2;
    cout<<“The sum of ”<<num1<<“ and ”<<num2<<“ is: ”<<sum<<endl;
    return 0;
}
```

```
Enter the First Number
2
Enter the Second Number
3
The sum of 2 and 3 is: 5

Process finished with exit code 0
```