C++ IF...ELSE STATEMENT

An **if** statement can be followed by an optional **else** statement, which executes when the boolean expression is false.

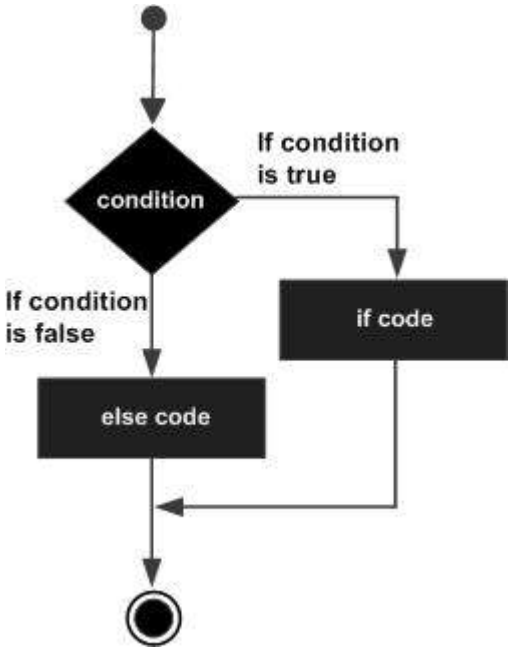
Syntax:

The syntax of an if...else statement in C++ is:

```
if(boolean_expression)
{
   // statement(s) will execute if the boolean expression is true
}
else
{
  // statement(s) will execute if the boolean expression is false
}
```

If the boolean expression evaluates to **true**, then the **if block** of code will be executed, otherwise **else block** of code will be executed.

Flow Diagram:



Example:

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

int main ()
{
   // local variable declaration:
   int a = 100;

   // check the boolean condition
   if( a < 20 )
   {
       // if condition is true then print the following
       cout << "a is less than 20;" << endl;
   }
   else
   {
```

```
        // if condition is false then print the following
        cout << "a is not less than 20;" << endl;
    }
    cout << "value of a is : " << a << endl;

    return 0;
}
```

When the above code is compiled and executed, it produces the following result:

```
a is not less than 20;
value of a is : 100
```

The if...else if...else Statement:

An **if** statement can be followed by an optional **else if...else** statement, which is very usefull to test various conditions using single if...else if statement.

When using if , else if , else statements there are few points to keep in mind.

- An if can have zero or one else's and it must come after any else if's.
- An if can have zero to many else if's and they must come before the else.
- Once an else if succeeds, none of he remaining else if's or else's will be tested.

Syntax:

The syntax of an if...else if...else statement in C++ is:

```
if(boolean_expression 1)
{
   // Executes when the boolean expression 1 is true
}
else if( boolean_expression 2)
{
   // Executes when the boolean expression 2 is true
}
else if( boolean_expression 3)
{
   // Executes when the boolean expression 3 is true
}
else
{
   // executes when the none of the above condition is true.
}
```

Example:

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

int main ()
{
   // local variable declaration:
   int a = 100;

   // check the boolean condition
   if( a == 10 )
   {
       // if condition is true then print the following
       cout << "Value of a is 10" << endl;
   }
   else if( a == 20 )
   {
       // if else if condition is true
       cout << "Value of a is 20" << endl;
```

```
   }
   else if( a == 30 )
   {
       // if else if condition is true
       cout << "Value of a is 30" << endl;
   }
   else
   {
       // if none of the conditions is true
       cout << "Value of a is not matching" << endl;
   }
   cout << "Exact value of a is : " << a << endl;

   return 0;
}
```

When the above code is compiled and executed, it produces the following result:

```
Value of a is not matching
Exact value of a is : 100
```