Ekaba Bisong
Programming in C++
University of Calabar

Lesson Note #21
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Selection Statements – if………else

The if statement executes a block of code if and only if its condition is fulfilled. Its syntax is:

if (condition) { statement }

Here, condition is the expression that is being evaluated. If this condition is true, statement is executed. If it is false, statement is not executed (it is simply ignored), and the program continues right after the entire selection statement.

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

int main()
{
    int num = 50;

    if (num < 50)
    {
        cout << "num is less than 50" << endl;
    }
}
```

Selection statements with if can also specify what happens when the condition is not fulfilled, by using the else keyword to introduce an alternative statement. Its syntax is:

if (condition) { statement1 } else { statement2 }

where statement1 is executed in case condition is true, and in case it is not, statement2 is executed.

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

int main()
{
    int num;

    cout <<"Please enter a number: ";
    cin >> num;

    if (num < 50)
    {
        cout << "Number is less than 50" << endl;
    } else {
        cout << "Number is greater than 50" << endl;
    }
}
```

Conditional Operator (?:)
C++ provides the conditional operator (?:), which is closely related to the if…else statement. The conditional operator is C++'s only ternary operator — it takes three operands. The operands, together with the conditional operator, form a conditional expression.

The first operand is a condition, the second operand is the value for the entire conditional expression if the condition is true and the third operand is the value for the entire conditional expression if the condition is false.

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

int main()
{
    int num;

    cout <<"Please enter a number: ";
    cin >> num;

    num < 50 ? cout << "Number is less than 50" :  cout << "Number is greater than 50";

}
```