The *if* Statement

Use the ***if*** statement to specify a block of code to be executed if a condition is true.

Syntax

```
if (condition) {
  // block of code to be executed if the condition is true
}
```

Note that if is in lowercase letters. Uppercase letters (If or IF) will generate an error.

In the example below, we test two values to find out if 20 is greater than 18. If the condition is true, print some text:

Example:

```
if (20 > 18) {
  cout << "20 is greater than 18";
}
```

We can also test variables:

```
int x = 20;
int y = 18;
if (x > y) {
  cout << "x is greater than y";
}
```

In the example above we use two variables, **x** and **y**, to test whether x is greater than y (using the > operator). As x is 20, and y is 18, and we know that 20 is greater than 18, we print to the screen that "x is greater than y".

The *else* Statement

Use the ***else*** statement to specify a block of code to be executed if the condition is false.

Syntax

```
if (condition) {
  // block of code to be executed if the condition is true
} else {
  // block of code to be executed if the condition is false
}
```

Example:

```
int time = 20;
if (time < 18) {
  cout << "Good day.";
} else {
  cout << "Good evening.";
}
// Outputs "Good evening."
```

In the example above, time (20) is greater than 18, so the condition is false. Because of this, we move on to the else condition and print to the screen "Good evening". If the time was less than 18, the program would print "Good day".

The *else if* Statement

Use the ***else if*** statement to specify a new condition if the first condition is false.

Syntax

```
if (condition1) {
  // block of code to be executed if condition1 is true
} else if (condition2) {
  // block of code to be executed if the condition1 is false and condition2 is true
} else {
  // block of code to be executed if the condition1 is false and condition2 is false
}
```

Example

```
int time = 22;
if (time < 10) {
  cout << "Good morning.";
} else if (time < 20) {
```


```
  cout << "Good day.";
} else {
  cout << "Good evening.";
}
// Outputs "Good evening."
```

n the example above, time (22) is greater than 10, so the **first condition** is false. The next condition, in the else if statement, is also false, so we move on to the else condition since **condition1** and **condition2** is both false - and print to the screen "Good evening".

Example: Find out if a number is even or odd

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

int main() {
  int myNum = 5;

  if (myNum % 2 == 0) {
    cout << myNum << " is even.\n";
  } else {
    cout << myNum << " is odd.\n";
  }

  return 0;
}
```

Example: Find out if a person is old enough to vote

```
int main() {
  int myAge = 25;
  int votingAge = 18;

  if (myAge >= votingAge) {
    cout << "Old enough to vote!\n";
  } else {
    cout << "Not old enough to vote.\n";
  }

  return 0;
}
```

Switch Statements

Use the switch statement to select one of many code blocks to be executed.

Syntax

```
switch(expression) {
  case x:
    // code block
    break;
  case y:
    // code block
    break;
  default:
    // code block
}
```

This is how it works:

- The switch expression is evaluated once
- The value of the expression is compared with the values of each case
- If there is a match, the associated block of code is executed
- The break and default keywords are optional

The example below uses the weekday number to calculate the weekday name:

```
int day = 4;
switch (day) {
  case 1:
    cout << "Monday";
    break;
  case 2:
    cout << "Tuesday";
    break;
  case 3:
    cout << "Wednesday";
    break;
  case 4:
    cout << "Thursday";
    break;
```


```
  case 5:
    cout << "Friday";
    break;
  case 6:
    cout << "Saturday";
    break;
  case 7:
    cout << "Sunday";
    break;
}
// Outputs "Thursday" (day 4)
```

When C++ reaches a ***break*** keyword, it breaks out of the switch block. This will stop the execution of more code and case testing inside the block. When a match is found, and the job is done, it's time for a break. There is no need for more testing.

The ***default*** keyword specifies some code to run if there is no case match:

```
int day = 4;
switch (day) {
  case 6:
    cout << "Today is Saturday";
    break;
  case 7:
    cout << "Today is Sunday";
    break;
  default:
    cout << "Looking forward to the Weekend";
}
// Outputs "Looking forward to the Weekend"
```