## C# Programming – Conditionals

**Conditionals**

Conditionals are used to make a decision to execute some code and ignore other code, depending upon a test expression.

**If Statements**

The **if statement** checks whether the test expression, inside the parenthesis, is **true** or **false**. If the test expression returns **true**, any and all code inside the body of the **if statement** is executed. If the test expression returns **false**, the body of the **if statement** is ignored.

1. **if** (test expression) {
3. //statements here will be executed if test expression is true
5. }

Here’s an example:

1. print("Is this input the number 5?");
3. **if**( input == 5 ){
4. print("yes");
5. }

In this example the commands within the **if statement** will be executed only when an input of 5 is used.

If an input of 18 is used the output would be:

1. Is this input the number 5?

And an input of 5 would yield the output:

1. Is this input the number 5?
2. yes

We can also use a logical operator to test multiple conditionals at the same time.

1. **if** (test\_expression\_1 && test\_expression\_2) {
2. //statements to be executed if both test expressions are true
3. }
5. **if** (test\_expression\_1 || test\_expression\_2) {
6. //statements to be executed if either test expressions are true
7. }
9. **if**(!test\_expression\_1){
10. //statements to be executed if test expression 1 is false
11. }

**Else Statements**

The **else statement** checks if the test expression of the previous **if statement** is **true** or **false**. If the test expression returns **false**, any and all code inside the body of the **else statement** is executed. An **else statement** is used to execute some statement/s when the test expression is **true** and execute some other statement/s if the test expression is **false**.

1. **if** (test expression) {
2. //statements to be executed if test expression is true
3. }
5. **else** {
6. //statements to be executed if test expression is false
7. }

Here’s the same example from earlier. But with an **else statement** to catch any input that is not the integer 5:

1. print("Is this input the number 5?");
3. **if**( input == 5 ){
4. print("yes");
5. }
6. **else**{
7. print("no");
8. }

Now if an input of 18 is used the output would be:

1. Is this input the number 5?
2. no

**Else If Statements**

**Else If statements** check another test expression, if the previous **if/else if statement** returned **false**. Multiple **else if statements** can be used in a row, each testing a different test expression. **Else if statements** can be followed by an **else statement**, which will be executed if all the **else if statements** return **false**. Due to the nature of **if/else if/else statements**, only one statement will be executed. Once an **if/else if statement** returns **true**, then all the following **else if/else statements** are skipped, as they are not executed.

1. **if** (test\_expression\_1){
2. //statements to be executed if test\_expression\_1 is true
3. }
4. **else** **if**(test\_expression\_2) {
5. //statements to be executed if test\_expression\_1 is false and 2 is true
6. }
7. **else** {
8. //statements to be executed if all test expressions are false
9. }