

INTRODUCTION TO PROGRAMMING USING C#

Lecture 3: Conditions and loops

CONTENTS:

- **if statement.**
- **else statement.**
- **Mathematics operations.**
- **while loop.**
- **for loop.**
- **Breaking the loop.**

IF STATEMENT

```
if (Condition) DoSomething();
```

```
// or
```

```
if (Condition)  
    DoSomething();
```

IF STATEMENT

```
if (Condition)
{
    DoSomething();
    DoSomethingElse();
    //...
}
```

ELSE STATEMENT

```
if (Condition) DoSomething(); else DoSomethingElse();
```

```
// or
```

```
if (Condition)
{
    DoSomething();
    //...
}
else
{
    DoSomethingElse();
    //...
}
```

CONDITIONS

Any expression that return Boolean value (true or false)

```
if (x == y) DoSomething();
```

```
if (x > y) DoSomething();
```

```
if (x < y) DoSomething();
```

```
if (x >= y) DoSomething();
```

```
if (x <= y) DoSomething();
```

```
if (x != y) DoSomething();
```

LOGICAL OPERATORS

- **&&** **and**
- **||** **or**
- **!** **not**

```
if (x > y && 7 < 5) DoSomething();
```

```
if ((x > 5 && y > 10) || y <= 50) DoSomething()
```

MATHEMATICS OPERATIONS

```
total = y + 5;
```

```
total = x - 5;
```

```
total = 5 * 6;
```

```
total = 25 / 5;
```

```
total = y ^ 2;
```


MATHEMATICS OPERATIONS

```
total = Math.PI; //3.14
```

```
total = Math.Abs(-5);
```

```
total = Math.Pow(y, y);
```

```
total = Math.Sin(30);
```

```
total = Math.Cos(30);
```

```
total = Math.Tan(30);
```

```
total = Math.Round(10.2345, 2);
```

WHILE LOOP

```
while (Condition) DoSomething();
```

```
// or
```

```
while (Condition)
{
    DoSomething();
    //...
}
```

FOR LOOP

```
for (int counter = 0; Condition; counter = counter + 1) DoSomething();  
  
// or  
  
for (int counter = 0; Condition; counter = counter + 1)  
{  
    DoSomething();  
    //...  
}
```

BREAKING THE LOOP

```
while (true)
{
    if (Condition) continue;
    //...
    if (Condition) break;
}
```

NEXT

- **Functions**