C# Programming Reference Sheet

Built In Data Types & Literals

Integers

```
Byte, Short, Int, Long
(eg: 1, 2, 13, 156)
```

Floating Point Numbers

```
Float, Double, Decimal
(eg: 1.7, 7.9, 3.4)
```

Strings and Characters

```
String, Char (eg: "Okay", 'K')
```

Boolean

```
Bool (eg: True, False)
```

Working with Strings

Assignment (giving a string a value)

```
name = "Marella";
```

Concatenation (joining strings)

```
fullName = name + " Morad";
```

Comparison

```
if(name == "Marella"){
}
```

Construction from other types:

```
int age = 21
nickname = name + age.ToString();
```

Simple Programming Statements

Constant declaration

```
const double pi = 3.14
```

Variable declaration

```
Int age; string name;
```

Assignment

```
Age = 21; name = "Marella";
```

Method call

```
Console.WriteLine(name + " " + age)
```

Sequence of statements – grouped

```
{…}
```

Structured Programming Statements

If statement

```
if (member == true) {…} else{…}
```

Case statement

```
switch(){case 1:…; break; case 2:…}
```

While loop

```
while(condition){…}
```

Do While loop

```
do{…} while(condition);
```

For loop

```
for(int i = 0; i <= 4; i++) {…}
```

Declaring Methods

Declare a method with parameters:

```
static void Print(string name){
        Console.WriteLine(name);}
```

Declare a method that returns data:

```
static int Sum(int num1, int num2){
        return num1 + num2;}
```

Pass by reference:

```
Sum(ref num1, ref num2);
```

Boolean Operators and Other Statements

Comparison: equal, less, larger, not equal, less eq

```
==, <, >, !=, <=
```

Boolean: And, Or and Not

```
&&, ||, !
```

Skip an iteration of a loop

```
continue;
```

End a loop early

```
break;
```

End a method:

```
return;
```

Custom Types

Classes

```
public class Custom {}
```

Enumerations

```
enum day {
        Sunday,
        Monday}
```

Structs

```
struct point{
        public int x;
        public int y;}
```

Arrays

Declaration

```
int[] nums = new int[2]{12, 16}
```

Access

```
nums[0] = 5; nums[6] = 9;
```

Loop with index i

```
for(int i = 0; i < nums.Length; i++){
nums[i] = nums[i] * nums[i];}
```

For each loop

```
foreach(int n in index){
Console.WriteLine(nums[n];}
```

Programs and Modules

Creating a program

```
namespace Test
{
        class Program
        {
        //what the program does
        }
}
```

Using a class from a library

```
using System;
using SplashKitSDK;
```

Other Things

Reading from Terminal

```
Console.ReadLine();
```

Writing to Terminal

```
Console.WriteLine("Hello World");
```

Comments

```
//single line comment
/*
        Multiline comment
*/
```