C# Programming Reference Sheet

Built In Data Types& Literals

Integers
int,uint,long,ulong,byte,sbyte,short,ushort
(eg: 7, 10, 21, 22, 100, -120,-322,322)

Floating Point Numbers
Float, Double
(eg: 4, 5.5)

Strings and Characters
String, Char (eg: 'World', 'W')

Boolean
Boolean (eg: True, False)

Working with Strings

Assignment (giving a string a value)
```
Test = "Hello world"
```
Concatenation (joining strings)
```
String Test = "Hello" + "World"
```
Comparison
```
test == test
```
Construction from other types:
```
x = X.ToString();
```

Simple Programming Statements

Constant declaration
```
Private const int days = 7;
```
Variable declaration
```
Int i = 0;
```
Assignment
```
i = 1;
```
Method call <Access Specifier> <Return Type> <Method Name>(Parameter List) {Method Body}

Sequence of statements - grouped
```
{}
```

Structured Programming Statements

If statement
```
if (Correct) {} else …;
```
Case statement
```
Switch (x) {case 1: Console.WriteLine("Case1");
break; case 2: …; break; }
```
While loop
```
While (this is correct) {}
```
Repeat loop
```
do{x+1; x++;} While(x<10);
```
For loop `for (int i = 1; i < 10; i++ ) {}`

Declaring Methods

Declare a method with parameters
```
public int Number(int number1, int number2) {}
```
data
```
public int AddNumbers(int numbet1, int number2)
{ return number1 + number2;}
```
Pass by reference:
```
arg = 4;
squareRef(ref arg);
Console.WriteLine(arg);
```

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 Message
{
}
```
Enumerations
```
enum Season{Spring,Summer,Autum,Spring}
```
Structs
```
struct Coordinate{public int x; public int y;}
```

Arrays

Declaration
```
int[] Numbers;
```
Access
```
Number[0] = 10;
```
Loop with index i
```
for(i=0;i<10;i++){Number[i]=i;}
```
For each loop
```
foreach (int element in fibNumbers){}
```

Programs and Modules

Creating a program
```
class MainClass
{
    public     static void Main()
    {
    }
}
```
Using a class from a library
```
using SwinGameSDK;
public void Draw()
{ SwinGame.FillRectangle(_color,_x,_y,_width,_heig);}
```

Other Things

Reading from Terminal
```
Console.ReadLine()
```
Writing to Terminal
```
Console.WriteLine()
```
Comments
```
// Line Comment
```