C# Programming Reference Sheet

Built In Data Types & Literals

Integers
Int, short, long (1,4,8,16)

Floating Point Numbers
Float, double, decimal (1.4,2.55,8.43)

Strings and Characters
String, char ("Hello" 'World')

Boolean – (True, False)

Working with Strings

Assignment (giving a string a value)
Name = "John";

Concatenation (joining strings)
```
Name + " Smith"
```
Comparison
```
If (name == "John Smith")
```
Construction from other types:
```
Num = num.ToString();
```

Simple Programming Statements

Constant declaration – const double Pi = 3.145

Variable declaration – type, name; int age

Assignment – variable = name; age = 20;

Method call – Console.WriteLine($"{age}");

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

Structured Programming Statements

If statement
```
If (){}
```
Case statement
```
Switch (day) {case 1: break; case 2: break;}
```

While loop – while () {}

Repeat loop – do {} while ();

For loop – for (int f = 0; f < 10; f++) {}

Declaring Methods

Declare a method with parameters:
Static int Add (int a, int b)
Declare a method that returns data:
Static int Add (int a, int b) {return a + b;}

Pass by reference:
```
Num = 1
squareReference (ref num);
```

Boolean Operators and Other Statements

Comparison: equal, less, larger, not equal, less eq
```
= < > != <= >=
```
Boolean: And, Or and Not
```
&& || !(true)
```
Skip an iteration of a loop
```
Continue;
```
End a loop early
```
Break;
```
End a method:
```
Exit;
```

Custom Types

Classes
```
Public class Message {}
```
Enumerations
```
Enum Colour {blue, green, red}
```
Structs
```
Struct employee
{public string name; public string id;}
```

Arrays

Declaration
```
Int[] ages = new int[10];
```
Access
```
Ages[5] = 20;
```
Loop with index i
```
For(x=0;x>10;x++)
```
For each loop
```
Foreach (int I in age)
```

Programs and Modules

Creating a program
```
Class Main{
Public static void Main(){}
}
```
Using a class from a library
```
Using system;
```

Other Things

Reading from Terminal
```
Console.ReadLine();
```
Writing to Terminal
```
Console.WriteLine();
Console.Write();
```
Comments
```
//
/* …..*/
```