C# Programming Reference Sheet

Built In Data Types & Literals

Integers

```
Int(signed 32 byte), long(signed 64 byte),
short(signed 16 byte), uint(unsigned 32 byte)
```

Floating Point Numbers

```
double(8bytes, precision ~15-17 digits),
float(4bytes, precision ~6-9 digits),
decimal(16bytes, precision ~28-29 digits)
```

Strings and Characters

```
char (represents a character), string (represents a bunch
of char-characters)
```

Boolean

```
Bool (true or false)
```

Working with Strings

Assignment (giving a string a value)

```
string firstName = "Tolga";
```

Concatenation (joining strings)

```
string fullName = firstName + "Duran";
```

Comparison

```
firstName == fullName, firstName == "Tolga",
"Tolga" != " Duran"
```

Construction from other types:

```
string x = a.ToString(); string
y = Convert.ToString(4);
```

Simple Programming Statements

Constant declaration

```
const int;
```

Variable declaration

```
string message;
```

Assignment

```
message = "Hello";
```

Method call

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

Sequence of statements - grouped

```
{}
```

Structured Programming Statements

If statement

```
If( condition )( then ) else ( then )
```

Case statement

```
switch( variable )(default: break;)
```

While loop

```
while (condition) (do)
```

Repeat loop

```
do ( ) while (condition)
```

For loop

```
For(int i=0;i < 10; i++) ( )
```

Declaring Methods

Declare a method with parameters:

```
public void HelloWorld(string message) ( )
```

Declare a method that returns data:

```
public int Addition(int x, int y) ( )
```

Pass by reference:

```
public void MyFunc(ref int x) (x = 20;)
```

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(string message) ( )
```

Enumerations

```
enum Season (Summer, Autumn, Winer, Spring)
```

Structs

```
struct Car{
        Public string model;
        Public int year;
}
```

Arrays

Declaration

```
String[] words = new string[10];
Message[] messages = new Message[4];
```

Access

```
Words[0]; messages[10];
```

Loop with index i

```
For(int i=0;i<word.length; i++) ( )
```

For each loop

```
foreach (string word in words) ( )
foreach (Message message in messages) ( )
```

Programs and Modules

Creating a program

```
namespace program {
        class mainprogram {


        }
}
```

Using a class from a library

```
#include Swin;
```

Other Things

Reading from Terminal

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

Writing to Terminal

```
Console.WriteLine(" ");
Console.Write("");
```

Comments

```
//
/*
  This is a comment
*/
```