# C# Programming Reference Sheet

## Built In Data Types & Literals

Integers
Int, short, long
(e.g. 5, 10, 15)
Floating Point Numbers
Float, double
(e.g. 3.14, 2.5555555, 69.69)
Strings and Characters
`String char (e.g. "hello", 'h')`
Boolean
Bool(e.g. true, false)

## Working with Strings

Assignment (giving a string a value)
String Name = "Gamaliel"

Concatenation (joining strings) string name =
"Gamaliel " + "D'mello"

Comparison
`String.Compare(str1, str2)`
Construction from other types:
`String text = age.ToString()`

## Simple Programming Statements

Constant declaration: Public Const **float** PI = 3.14f

Variable declaration: var var_name

Assignment: PI = 3.14

Method call: Console.WriteLine("text")

Sequence of statements – grouped
If …. else

## Declaring Methods

Declare a method with parameters:
Public void Print("text passed as arg")
{…}
Declare a method that returns data:

```
Public int addtwo(var One, var Two)
Return result = One + Two
```

Pass by reference:

```
Public int swap(var One, var Two)
{
      …
`
```

## Structured Programming Statements

If statement
If (comparison using ==, =>, <=, < or >)
Case statement

```
switch (a)
{
      Case 1: //code
      Break;
      Case 2: //code 2
      break;
      Default: //default if neither 1 or 2
      Break;

}
```

While loop
`While (i < 10) {do these steps}`
Repeat loop repeat … until

```
do
{
      //code
} while (condition);
```

For loop
for{i=0 ; i<count ; i++}

## 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 x{ }

Enumerations: enum week{Monday, Tuesday, ETC. }

Structs: struct Employee{
```
  public int EmpId;
  public string FirstName;
  public string LastName;
}
```

## Arrays

Declaration
int die[] = new int[5]

Access: die[2], die[3]

Loop with index i
```
While i<die.length
Die[i]; i++
```
For each loop
```
For each (roll r in die){do this}
```

## Programs and Modules

Creating a program
```
using System;
namespace HelloWorld
{class Hello {static void Main() {
 Console.WriteLine("Hello World!");}}}
```

Using a class from a library
```
Using System;
```

## Other Things

Reading from Terminal: Console.Read

Writing to Terminal: Console.Write

Comments: // (single line) or /* */ (multiline)