C# Programming Reference Sheet

Built In Data Types & Literals

Integers
```
int
```
Floating Point Numbers
```
float, double
```
Strings and Characters
```
string, char
```
Boolean
```
bool
```

Working with Strings

Assignment (giving a string a value)
```
string str = "hello"
```
Concatenation (joining strings)
```
str = "hello" + "world";
```
Comparison
```
String.Compare(string1,string2, true)
```
Construction from other types:
```
int.ToString;
Convert.ToString(i);
```

Simple Programming Statements

Constant declaration
```
const float PI = 3.14;
```
Variable declaration
```
int integer;
```
Assignment
```
Integer = 10;
```
Method call
```
Class.Method;
```
Sequence of statements - grouped
```
{…}
```

Structured Programming Statements

If statement If (i < a){…}else{…}

Case statement
```
switch (i)
case 1: a = 0;
            break;
case 2: a = 1;
            break;
default: a = 2;
```
While loop While (a > 3){…}

Repeat loop do {…} while (I <>0)

For loop for (i = 0; I<10; i++) {…}

Declaring Methods

Declare a method with parameters:
```
void Method(string int)
```
Declare a method that returns data:
```
int Method()
```
Pass by reference:
```
string Method(ref int a)
```

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 function/procedure:
```
return;
```

Custom Types

Classes
```
class ClassName
```
Enumerations
```
enum Enumeration
```
Structs
```
struct StructName
```

Arrays

Declaration
```
int[] a;
```
Access
```
a[0]
```
Loop with index i
```
for (int i = 0; i < a.length; i++)
{…}
```
For each loop
```
A[i]
```

Programs and Modules

Creating a program
```
class MainClass
```
Using a class from a library
```
ClassName a = new ClassName();
```

Other Things

Reading from Terminal
```
Console.ReadLine, Console.Read
```
Writing to Terminal
```
Console.WriteLine, Console.Write
```
Comments
```
///<comment>
///write comment here
///</comment>
```