# C# Programming Reference Sheet

Built In Data Types & Literals

Integers

Int, Short, Long

(eg: 5, 10, 15)

Floating Point Numbers

decimal, Double, Float

(eg: 3.1, 2.5, 2.1)

Strings and Characters

String, Char (eg: 'Hello', 'H')

Boolean

Bool (eg: True, False)

Working with Strings

Assignment (giving a string a value)

String name = “Fred”;

Concatenation (joining strings)

String name = name + “ Smith”;

Comparison

**if** (name == “Fred Smith”) **{}**

Construction from other types:

varname.ToString();

(int)notintvaluename

Programs and Modules

Creating a program

**Namespace Nameof Program**

**{**

**Content**

**}**

Using a module

**using** System;

**namespace asdf{}**

Custom Types

Records/Class

**Class player {public double length; public string name;}**

**Declaring: player player1 = new player();**

**Assigning: player1.name = “name”;**

Enumerations

**Enum Days {Monday,Tuesday, etc};**

**Days CurDay = Monday;**

Arrays

Declaration

**datatype[] arrayName;**

Access

scores[0] = 10;

Loop

for ( i = 0; i < 10; i++ ){arrayname[i] = i+ 100;}

use a foreach statement to iterate through an array. Foreach(string value in arrayName) {statem}

Other Things

Reading from Terminal

Console.Read() Console.ReadLine()

Writing to Terminal

Console.WriteLine(“asdfghjk”);

Comments

/// single line accepts xml

// text comments

/\* multi line comments\*/

Compiling

In engine visual studio

Declaring Functions & Procedures

Declare a procedure with parameters:

Public **Void Sort(int v1, v2) {}**

Declare a functions:

**Public int print() {}**

Pass by reference:

**Public void** Swap (**ref** int r1){}

**Public void swap (int x, int y) {}**

**Public void swap (out int x) {}**

Simple Programming Statements

Constant declaration

const data\_type constant\_name = value;

Variable declaration

**Data\_type varname;**

Assignment

String name = 'Fred'; int age = 5;

Procedure Call

Sort(p1, p1);

Sequence of statements - grouped

**{ content }**

Structured Programming Statements

If statement

**if** (condition) **{statements}**

case statement

**int value = 5; switch(value)**

**{case 1:statement; break;}**

while loop

**while(conditions)** {statements}

repeat loop

**do {} while(condition)**;

For loop

**for** (int i = 0; a < 20; 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 result**; Return;