Data Types

string	2 bytes/char
bool	
char	2 bytes
byte	1 byte
short	2 bytes
int	4 bytes
long	8 bytes
float	4 bytes
double	8 bytes
decimal	16 bytes

Float: Can hold up to seven significant digits of accuracy

Double: Can hold 15 or 16 significant digits of accuracy

Decimal: Has a greater precision and a smaller range. Suitable for financial and monetary calculations

Displaying Variable Values

```
using System;
public class Displa ySo meMoney
[
            public static void
Main()
          {
                                  -
double someMoney = 39.45;
                                  -
Con sol e.W rit eLi ne( som eMo -
ney);
          }
[
```

Operators

+	Addition	-	Subtraction
*	Multiplication	/	Division
%	Remainder		

Suffixes

Put an F after a number to make it a float
 float pocketchange = 4.87F;
Put a D after it to make it a double (default)
 float pocketchange = 4.87D;
Put an M (money) after it to make it a decimal
 float pocketchange = 4.87M;
Scientific notation
 Includes an E (for exponent)

Methods

Define it – takes 4 steps
 Declaration (or method header, or signature)
 {
  Code (method body)
   Return value;
 }
Call it (invoke it)

Method declarations

Method with no return value, and passes no parameters
public static **void** DisplayHelloText()
 DisplayHelloText();
Method with no return value, and passes one parameter
public static **void** DisplaySalesTax(double *pAmt*)
 DisplaySalesTax(1243.00);
Method with no return value, and passes two parameters
public static **void** DisplaySalesTax(double *pAmt*, double *ptaxRate*)
 DisplaySalesTax (1243.00, .09);
Method that returns a value, and passes two parameters

Method declarations (cont)

public static **double** DisplaySalesTax-(double *pAmt*, double *ptaxRate*)
 Amount = DisplaySalesTax (1243.00, .09);
 return *Answer*;

(if no return, then **void**, else, return type, e.g. integer32, string, double, etc)

Convert Methods

ToBool-ean()	to an equivalent Boolean value	ToInt16()	to a 1 signe integ
ToByte()	to an 8-bit unsigned integer	ToInt32()	to a 3 signe integ
ToChar()	to a Unicode character	ToInt64()	to a 6 signe integ
ToDeci-mal()	to a decimal number	ToString()	to its equiv Strin repre ation
ToDouble()	to a double-precision floating--point number	ToUInt16()	to a 1 unsig integ

Arrays Functions

Array.Sort(arra-yName)	Arranges array items in ascending order
Array.Length	Length of the array
Array.Revers-e(arrayName)	Reverses the order of items in an array

Arrays Functions (cont)

Array.BinarySea-rch(ArrayName, value)	Finds a requested value in a sorted array

Do not use BinarySearch() under these circumstances

If your array items are not arranged in ascending order

If your array holds duplicate values and you want to find all of them

If you want to find a range match rather than an exact match

Array

Assigning values to array elements
```
double[] sales = new double [20];
sales[0] = 2100.00;
sales[1] = 3256.06;
```
Printing an element value
```
Consol e.W rit eLi ne( sal es[1]);
```
**for loop to search a Parallel Array
```
for (int i = 0; i < nameAr ray.Le ngth; i+
+)
{
 if (nameA rray[i] == dwarfName)
 {
 do something
 }
}
```

Multidimensional Arrays

One-dimen-sional or single-dimen-sional array	Picture as a column of values. Elements can be accessed using a single subscript
Multidime-nsional arrays	Require multiple subscripts to access the array elements

Conditional Operators

Conditional AND operator
-Determines whether two expressions are both true
-Written as two ampersands (&&)
-You must include a complete Boolean expression on **each side** of the operator
Written as `If (age >= 0 && age < 12 0)`

Conditional OR operator
Used when you want some action to occur even if only one of two conditions is true
Written as `if (a == 1 || b+c > 3)`

Loops

if stataments
```
if (statement)
{
  do something
}
```
while loop
```
while (statement)
{
  do something
}//end loop
```
-Definite loop or counted loop
Loop for which the number of iterations is predetermined
-Indefinite loop
Value of a loop control variable is not altered by arithmetic, but instead, is altered by user input (ask user a question inside the loop, exit based on a particular answer)
do-while loop
```
do
{
  do something in the loop
}
```

Loops (cont)

```
while (statement)
```
for loop
When using a for statement, you can indicate in one place:
Starting value for the loop control variable
Test condition that controls loop entry
Expression that alters the loop control variable
```
for (statement)
do something
```

DateTime and TimeSpan

DateTime(yr, mo,day)	currdt.AddDays(1)
DateTime(yr, mo,day, hr, min, sec)	currdt.Subtract-Days(1)
DateTime.Parse("-1/1/2015")	TimeSpan(hrs,mi-n,sec)
DateTime.Now	TimeSpan.Fro-mSeconds(120)

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Page 2 of 2.