

Curso C# Fundamentals for Absolute Beginners

Laboratorio de Desarrollo de Software

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```
Console.WriteLine(y);
   Console.ReadLine();
    Console.WriteLine("What's your name? ");
   Console.Write("Type your first name: ");
   string firstName;
    firstName = Console.ReadLine();
   Console.Write("What's your last name? ");
   Console.Write("Type your last name: ");
   string lastName;
   lastName = Console.ReadLine();
   Console.Write("Type your last name: ");
   string myLastName = Console.ReadLine();
    Console.WriteLine("Hello, " + firstName + " " + myLastName);
   Console.ReadLine();
}
```

```
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Decisions
{
    class Program
    {
        class Program
    }
}
```

```
static void Main(string[] args)
            Console.WriteLine("Daniel's Big Giveaway");
            Console.Write("Choose door: 1, 2 or 3: ");
            string value = Console.ReadLine();
            string msg = "";
            if (value == "1")
                msg = "you have won a car";
            else if (value == "2")
                msg = "you won a new boat!";
            else if (value == "3")
                msg = "you won a new cat!";
            else
               msg = "sorry, I didn't understand. ";
               //msg = msg + "You Lose.";
               msg += "You Lose.";
            Console.WriteLine(msg);
            Console.ReadLine();
            Console.WriteLine("Daniel's Big Giveaway");
            Console.Write("Choose a door: 1, 2 or 3: ");
            string userValue = Console.ReadLine();
            //if-else syntax = if value equals 1 then 'boat' else 'strand
of lint'
            string msg = (userValue == "1") ? "boat" : "strand of lint";
            //Console.Write("You won a ");
            //Console.Write(msg);
            //Console.Write(".");
            //Console.ReadLine();
            //string manipulation {} value replaced by msg
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace OperatorsExpressionsStatements
    class Program
    {
        static void Main(string[] args)
            int x, y, a, b;
            //assignment operator
            x = 3;
            y = 2;
            a = 1;
            b = 0;
            //addition operator
            x = 3 + 4;
            //subtraction operator
```

```
x = 10 - 5;
//multiplication operator
x = 3 * 5;
//division operator
x = 10 / 5;
// order of operations using paranthesis
x = (x + y) * (a - b);
//equality operator
if (x == y)
//greator than operatoer
if (x > y)
//less than operator
if (x < y)
//contional AND operator
if ((x > y) \&\& (a > b))
//contional OR operator
if ((x> y) || (a > b))
string message = (x == 1) ? "car" : "Boat";
//Member access and Method invocation
Console.WriteLine("hi");
```

```
}
}
}
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace ForIteration
    class Program
        static void Main(string[] args)
            for (int i = 0; i < 10; i++)
              // Console.WriteLine(i);
              if(i == 7)
                    Console.WriteLine("Found seven!");
                    break;
            for (int myValue = 0; myValue < 12; myValue++)</pre>
                Console.WriteLine(myValue);
            Console.ReadLine();
        }
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace UnderstandingArrays
    class Program
        static void Main(string[] args)
            int number1 = 4;
            int number2 = 8;
            int number3 = 15;
            int number4 = 16;
            int number5 = 23;
            if (number1 == 16)
            else if (number2 == 16)
            else if (number3 == 16)
            //array of 5 indeces
            int[] numbers = new int[5];
            numbers[0] = 4;
            numbers[1] = 8;
            numbers[2] = 15;
```

```
numbers[3] = 16;
            numbers[4] = 23;
            //numbers[5] = 42;
            Console.WriteLine(numbers[1]);
            Console.WriteLine(numbers.Length);
            Console.ReadLine();
            //int[] numbers = new int[] { 4, 8, 15, 16, 23, 42 };
            //string[] names = new string[] { "Michael", "Robert",
"Alexander", "Frank" };
            for (int i = 0; i < names.Length; i++)</pre>
                Console.WriteLine(names[i]);
            Console.ReadLine();
            foreach(string name in names)
                Console.WriteLine(name);
            Console.ReadLine();
            string zig = "You can get what you want out of life if you
help enough other people get what they want.";
            char[] charArray = zig.ToCharArray();
            Array.Reverse (charArray);
            foreach(char zigchar in charArray)
                Console.Write(zigchar);
```

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

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace _7_HelperMethods
{
    class Program
    {
        static void Main(string[] args)
          {
            }
        }
}
```

```
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Text;
using System.Threading.Tasks;

namespace WhileIteration
{
    class Program
    {
        static void Main(string[] args)
```

```
bool displayMenu = true;
    while (displayMenu)
        displayMenu = MainMenu();
private static bool MainMenu()
    Console.Clear();
    Console.WriteLine("Choose an option: ");
    Console.WriteLine("1) Print Number");
    Console.WriteLine("2) Guessing Game");
    Console.WriteLine("3) Exit");
    string result = Console.ReadLine();
    if (result == "1")
        PrintNumber();
        return true;
    else if (result == "2")
        GuessingGame();
        return true;
    else if (result == "3")
        return false;
    else
        return true;
}
private static void PrintNumber()
```

```
Console.Clear();
            Console.WriteLine("Print number!");
            Console.WriteLine("Type a number: ");
            int result = int.Parse(Console.ReadLine());
            int counter = 1;
            while (counter < result + 1)</pre>
                Console.Write(counter);
                Console.Write(" - ");
                counter++;
            Console.ReadLine();
       private static void GuessingGame()
            Console.Clear();
            Console.WriteLine("Guessing Game");
            Random myRandom = new Random();
            int randonNumber = myRandom.Next(1, 11);
            int guesses = 0;
            bool incorrect = true;
            do
                Console.WriteLine("Guess a number between 1 and 10");
                string result = Console.ReadLine();
                guesses++;
                if (result == randonNumber.ToString())
                    incorrect = false;
                else
                    Console.WriteLine("Wrong!");
            } while (incorrect);
            Console.WriteLine("Correct! it took you {0} guesses.",
guesses);
```

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

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace WorkingWithStrings
    class Program
        static void Main(string[] args)
            //string myString = "My \"so-called\" life";
//quotes
            //string myString = "What if I needa]nnew line?";
                                                                      //new
line
            //string myString = "Go to your C:\\ drive";
//backslsh
            //string myString = @"Go to your C:\ drive";
//blackslash 2
            //string myString = String.Format("{1} = {0}", "First",
"Second");
            //string myString = String.Format("{0:C}", 1234);
            //string myString = String.Format( "{0:N}", 123456789);
            //string myString = String.Format("Percentage: {0:P}", .1234);
            //string myString = String.Format("Phone Number:
\{0: (\#\#\#) - (\#\#\#) - (\#\#\#\#) \text{ ", } 1234567890\};
```

```
//string myString = ("That summer we took three across the
bard ");
            ///myString = myString.Substring(6, 14);
            //myString = myString.ToUpper();
            //myString = myString.Replace(" ", "--");
            //myString = myString.Remove(6, 14);
            myString = String.Format("Length before : {0} -- length after:
{1}",
               myString.Length, myString.Trim().Length);
            StringBuilder myString = new StringBuilder();
            for (int i = 0; i < 100; i++)
                myString.Append("--");
                myString.Append(i);
            Console.WriteLine(myString);
            Console.ReadLine();
        }
```

```
#using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace DatesAndTimes
{
    class Program
```

```
static void Main(string[] args)
{
    DateTime myValue = DateTime.Now;
    //Console.WriteLine(myValue.ToString());
    //Console.WriteLine(myValue.ToShortDateString());
    //Console.WriteLine(myValue.ToShortTimeString());
    //Console.WriteLine(myValue.ToLongDateString());
    //Console.WriteLine(myValue.ToLongTimeString());
    //Console.WriteLine(myValue.AddDays(3).ToLongDateString());
    //Console.WriteLine(myValue.AddHours(3).ToLongTimeString());
    //Console.WriteLine(myValue.AddDays(-3).ToLongDateString());
    //Console.WriteLine(myValue.Month);
    //DateTime myBirthday = new DateTime(2006, 9, 11);
    //Console.WriteLine(myBirthday.ToShortDateString());
    DateTime myBirthday = DateTime.Parse("9/11/2006");
    TimeSpan myAge = DateTime.Now.Subtract(myBirthday);
    Console.WriteLine(myAge.TotalDays);
    Console.ReadLine();
}
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace SimpleClasses
{
    class Program
```

```
static void Main(string[] args)
            Car myCar = new Car();
           myCar.Make = "Oldsmobile";
           myCar.Model = "Cutlas supreme";
           myCar.Year = 1986;
           myCar.color = "Silver";
            Console.WriteLine("{0} {1} {2} {3}", myCar.Make, myCar.Model,
myCar.Year, myCar.color);
            decimal value = DetermineMarketValue(myCar);
            //Console.WriteLine("{0:C}", value);
            Console.WriteLine("{0:C}", myCar.DetermineMarketValue());
            Console.ReadLine();
        }
       private static decimal DetermineMarketValue(Car car)
            decimal carValue = 100.0M;
           return carValue;
        }
        class Car
            public string Make { get; set; }
           public string Model { get; set; }
           public int Year { get; set; }
           public string color { get; set; }
            public decimal DetermineMarketValue()
                decimal carValue;
                if (Year > 1990)
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
Namespace ObjectLifeTime
    class Program
    {
        static void Main(string[] args)
            Car myCar = new Car();
            Car.MyMethod();
            myCar.Make = "Oldmobile";
            myCar.Model = "Cutlas Supreme";
            myCar.Year = 1986;
            myCar.Color = "Silver";
            //overloaded constructor used with parameters
            //Car myThirdCar = new Car("Ford", "Escape", 2005, "White");
```

```
Car myOtherCar;
   myOtherCar = myCar;
        myOtherCar.Make,
       myOtherCar.Model,
        myOtherCar.Year,
        myOtherCar.Color);
   myOtherCar.Model = "98";
       myCar.Make,
       myCar.Model,
       myCar.Year,
        myCar.Color);
   myOtherCar = null;
        myOtherCar.Make,
       myOtherCar.Model,
       myOtherCar.Year,
        myOtherCar.Color);
   myCar = null;
    Console.ReadLine();
class Car
    public string Make { get; set; }
   public string Model { get; set; }
```

```
public int Year { get; set; }
            public string Color { get; set; }
            public double OriginalPrice { get; set; }
            public Car()
                // You could load from a configuration file, a database,
etc.
                this.Make = "Nissan";
           public Car(string make, string model, int year, string color)
               Make = make;
               Model = model;
               Year = year;
            public static void MyMethod()
                Console.WriteLine("Called the static MyMethod");
                Console.WriteLine();
    }
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
```

```
namespace ClassesInheritance
   class Program
        static void Main(string[] args)
            car mycar = new car();
           mycar.Make = "BWM";
           mycar.Model = "7451i";
           mycar.Color = "Black";
           mycar.Year = 2005;
           printVehicleDetails(mycar);
            Truck mytruck = new Truck();
           mytruck.Make = "Ford";
           mytruck.Model = "F950";
           mytruck.Year = 2006;
           mytruck.Color = "Black";
            mytruck.TowingCapacity = 1200;
            printVehicleDetails(mytruck);
            Console.ReadLine();
        }
       private static void printVehicleDetails(Vehicle vehicle)
            Console.WriteLine("Here are the vehicle's details: {0}",
vehicle.FormatMe());
        abstract class Vehicle
            public string Make { get; set; }
           public string Model { get; set; }
           public int Year { get; set; }
           public string Color { get; set; }
```

```
public abstract string FormatMe();
        }
       class car : Vehicle
           public override string FormatMe()
                return String.Format("{0} - {1} - {2} - {3}", this.Make,
this.Model, this.Color, this.Year);
        }
       sealed class Truck : Vehicle
        {
           public int TowingCapacity { get; set; }
           public override string FormatMe()
                return String.Format("{0} - {1} - {2} Towing units",
this.Make, this.Model, this.TowingCapacity);
```

```
using System.Collections.Generic;
using System.IO;
using System.Linq;
using System.Text;
using System.Text;
using System.Threading.Tasks;
```

```
using System;
using System.IO;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Net;
namespace AssembliesAndNamespaces
   class Program
    {
        static void Main(string[] args)
//File.WriteAllText(@"C:\Users\Daniel\Downloads\MinigameSettings.txt",
text);
//https://msdn.microsoft.com/en-us/library/fhd1f0sw(v=vs.110).aspx
            WebClient client = new WebClient();
            string reply =
client.DownloadString("Http://msdn.microsoft.com");
```

```
using System;
using System.Collections;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace WorkingWithCollections
   class Program
        static void Main(string[] args)
            /* commented out for object initializer below, line 77
            Car car1 = new Car();
            car1.Make = "Oldsmobile";
            car1.Modle = "Cutlas Supreme";
            Car car2 = new Car();
            car2.Make = "Geo";
            car2.Modle = "Prism";
            car2.VIN = "B2";
            Book book1 = new Book();
            book1.Author = "Robert Tabor";
```

```
book1.Title = "Microsoft .NET XML Web Services";
           book1.ISBN = "0=000=00000=0";
            //old style collections
           //ArrayLists are dynamically sized, coolfeatures like sorting,
remove items
           ArrayList myArrayList = new ArrayList();
           myArrayList.Add(car1);
           myArrayList.Add(car2);
           myArrayList.Add(book1);
           myArrayList.Remove(book1);
           foreach (Car car in myArrayList)
               Console.WriteLine(car.Make);
           //Newer style of collections = List<T> - generics where type
<T> customizes generic to specific
           List<Car> myList = new List<Car>();
           myList.Add(car1);
           myList.Add(car2);
           // myList.Add(book1); --won't allow as list is specific to
car datatype
            foreach (Car car in myList)
               Console.WriteLine(car.Make);
```

```
//Dictionary<TKey, TValuel> is a key/value pair list
            Dictionary<string, Car> myDictionary = new Dictionary<string,
Car>();
           myDictionary.Add(car1.VIN, car1);
           myDictionary.Add(car2.VIN, car2);
            Console.WriteLine(myDictionary["B2"].Make);
            //initializing an array w/o using new keyword
            //string[] names = { "Bob", "Steve", "Brian", "Chuck" };
            //object initializer using object initialization syntax
            //No need for constructor
            //comment out car and books above to do stuff below
            Car car1 = new Car() { Make = "BMW", Modle = "750li", VIN =
"C3" };
            Car car2 = new Car() { Make = "Toyota", Modle = "4Runner", VIN
= "D4" };
            //collection initializer
            List<Car> myList = new List<Car>
                new Car {Make = "Oldsmobile", Modle = "Cutless Supreme",
VIN = "A1" \},
                new Car {Make = "Nisan" , Modle = "Altima", VIN = "F6" }
            };
            Console.ReadLine();
        }
        class Car
            public string Make { get; set; }
           public string Modle { get; set; }
           public string VIN { get; set; }
```

```
class Book
{
    public string Title { get; set; }
    public string Author { get; set; }
    public string ISBN { get; set; }
}
}
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace UnderstandingLINQ
   class Program
        //2 styles : query syntax similar to sql; method synstax familiar
to c# devs
        static void Main(string[] args)
            List<Car> myCars = new List<Car>() {
                new Car() { VIN="A1", Make = "BMW", Model= "550i",
StickerPrice=55000, Year=2009},
                new Car() { VIN="B2", Make="Toyota", Model="4Runner",
StickerPrice=35000, Year=2010},
                new Car() { VIN="C3", Make="BMW", Model = "745li",
StickerPrice=75000, Year=2008},
                new Car() { VIN="D4", Make="Ford", Model="Escape",
StickerPrice=25000, Year=2008},
                new Car() { VIN="E5", Make="BMW", Model="55i",
StickerPrice=57000, Year=2010}
            };
```

```
//LINQ Query
           var bmws = from car in myCars
                       where car.Make == "BMW"
                       && car.Year == 2010
                       select car;
           var orderedCars = from car in myCars
                              orderby car. Year descending
                              select car;
           //LINQ method
           //lamba expressions - mini methods
           //var bmws = myCars.Where(p => p.Make == "BMW" && p.Year ==
2010);
            //var orderedCars = myCars.OrderByDescending(p => p.Year);
           var firstBWM = myCars.OrderByDescending(p => p.Year).First(p
=> p.Make == "BMW");
           Console.WriteLine(firstBWM.VIN);
           // Console.WriteLine(myCars.TrueForAll(p => p.Year > 2009));
            //myCars.ForEach(p => p.StickerPrice -= 3000);
            //myCars.ForEach(p => Console.WriteLine("{0} {1:C}", p.VIN,
p.StickerPrice));
            //Console.WriteLine(myCars.Exists(p => p.Model == "745li"));
            //Console.WriteLine(myCars.Sum(p => p.StickerPrice));
```

```
foreach (var car in orderedCars)
                Console.WriteLine("{0} {1}", car.Year, car.Model,
car.VIN);
            Console.WriteLine(myCars.GetType());
            var orderedCars = myCars.OrderByDescending(p => p.Year);
            Console.WriteLine(orderedCars.GetType());
            var bmws = myCars.Where(p => p.Make == "BMW" && p.Year ==
2010);
           Console.WriteLine(bmws.GetType());
           var newCars = from car in myCars
                       where car.Make == "BMW"
                       select new { car.Make, car.Model }; //projection =
selection new datatypes to project at runtime
            Console.WriteLine(newCars.GetType());
            Console.ReadLine();
        }
    }
   class Car
    {
       public string VIN { get; set; }
       public string Make { get; set; }
       public string Model { get; set; }
       public int Year { get; set; }
       public double StickerPrice { get; set; }
    }
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace EnumsAndSwitch
    class Program
        static void Main(string[] args)
            List<Todo> todos = new List<Todo>()
                new Todo { Description = "Task 1", EstimatedHours = 6,
Status = Status.Completed },
                new Todo { Description = "Task 2", EstimatedHours = 2,
Status = Status.InProgress },
                new Todo { Description = "Task 3", EstimatedHours = 8,
Status = Status.NotStarted },
                new Todo { Description = "Task 4", EstimatedHours = 12,
Status = Status.Deleted },
                new Todo { Description = "Task 5", EstimatedHours = 6,
Status = Status.InProgress },
                new Todo { Description = "Task 6", EstimatedHours = 2,
Status = Status.NotStarted },
                new Todo { Description = "Task 7", EstimatedHours = 14,
Status = Status.NotStarted },
                new Todo { Description = "Task 8", EstimatedHours = 8,
Status = Status.Completed },
                new Todo { Description = "Task 9", EstimatedHours = 8,
Status = Status.InProgress },
                new Todo { Description = "Task 10", EstimatedHours = 8,
Status = Status.Completed },
                new Todo { Description = "Task 11", EstimatedHours = 4,
Status = Status.NotStarted },
```

```
new Todo { Description = "Task 12", EstimatedHours = 10,
Status = Status.Completed },
                new Todo { Description = "Task 13", EstimatedHours = 12,
Status = Status.Deleted },
                new Todo { Description = "Task 14", EstimatedHours = 6,
Status = Status.Completed }
            };
            PrintAssessment(todos);
            Console.ReadLine();
        }
       private static void PrintAssessment(List<Todo> todos)
        {
            foreach (var todo in todos)
                switch (todo.Status)
                    case Status.NotStarted:
                        Console.ForegroundColor = ConsoleColor.Red;
                        break;
                    case Status.InProgress:
                        Console.ForegroundColor = ConsoleColor.Green;
                        break:
                    case Status.OnHold:
                        Console.ForegroundColor = ConsoleColor.DarkRed;
                        break;
                    case Status.Completed:
                        Console.ForegroundColor = ConsoleColor.Blue;
                        break;
                    case Status.Deleted:
                        Console.ForegroundColor = ConsoleColor.Yellow;
                        break;
                    default:
                        break;
                Console.WriteLine(todo.Description);
```

```
}
}
class Todo
{
    public string Description { get; set; }
    public int EstimatedHours { get; set; }
    public Status Status { get; set; }
}
enum Status
{
    NotStarted,
    InProgress,
    OnHold,
    Completed,
    Deleted
}
```

```
Console.WriteLine(content);
            catch(FileNotFoundException ex)
                Console.WriteLine("There was a problem!");
                Console.WriteLine("Make sure the file name is named
correctly: MinigameSettings.txt");
            catch (DirectoryNotFoundException ex)
                Console.WriteLine("There was a problem!");
                Console.WriteLine(@"Make sure the directory c:\Users\...
exists");
            catch (Exception ex)
                Console.WriteLine("There was a problem!");
                Console.WriteLine(ex.Message);
            finally
                Console.WriteLine("Closing the app now...");
            Console.ReadLine();
```