Simon Dunkley 1628623

Pass Task 2 - Counter

Related Learning Outcomes

ULO1 – Explain the OO Principles

This exercise demonstrated object encapsulation teaching me about how you can make features either public or private to only exist within the object. C# has a feature called properties to provide access to data within an object. Making an object static makes it a feature of the mainClass.

ULO2 – Use OO Language and Library

Demonstrated class and constructor declaration, the use of conditional statements (e.g. "if"), and assigning values to parameters. The task examines how fields can be used by an object to remember information. We used a Property to get the name and value from the counter and be able to access it outside the object.

ULO3 – Design, Develop and Test using an IDE

The code was developed using Xamarin Studio to build and run the program, as well as integrated debugging features to step and inspect values.

ULO4 – Communicate using UML Diagrams

I learned how to interpret a UML class diagram and write the related code.

ULO5 – Describe Elements of Good OO Design

The exercise demonstrated correct use of C# coding conventions.

Discussion

Encapsulation means to hide aspects within the object (capsule)

You can either make properties, methods and fields public or private so they could be hidden outside the Object but properties allows you to access the fields outside the class. Most Methods are public so you can call them outside the class. In C# you use properties that allow you access to the data from outside the Object (capsule) without actually giving them access to the fields themselves.

2 Counter objects were created in the task.

The relationship between the variables and objects is that the variables are inside of the object and "Counter 1" is referred as Name within the myCounter object.

When myCounter[2and0] was reset the object's value called Count was set to 0 because they refer to the same object.

```
Example public string Name { get {
```

Simon Dunkley 1628623

```
return _name;
}
set
{
    __name = value;
}
```

Screenshots

```
[code running]
                                                                                          X
    Xamarin Studio External Console
  (Counter 2) is {9}
(Counter 1) is {4}
(Counter 1) is {0}
(Counter 2) is {9}
(Counter 1) is {0}
   ress any key to continue . . . _
[use of IDE]
                                                                                                                        П
                                                                                                                                X
  Counter - Program.cs - Xamarin Studio
  File Edit View Search Project Build Run Version Control Tools Window Help
                                  Default
                                                                     Build success...
                                                                                            Q Press 'Control+,' to search
   Solution
                                                                                                                                 û
                                          Program.cs
                                                                           Counter.cs
   Counter

  MainClass ► III Main (string[] args)

                                                                                                                                  Toolbox
                                                 public static void PrintCounters(Counter[] counters)
   ▼ Counter
                                                 {
     ▶ References
                                                     foreach(Counter c in counters)
                                    12
       脂 Packages
                                    13
     ▶ I Properties
                                                                                                                                  Properties
                                    14
                                                          Console.WriteLine ("{" + c.Name + "} is {" + c.Count + "}")
       () Counter.cs
                                    15
                                    16
                                                }
       (†) Program.cs
                                    17
                                    18
                                                public static void Main (string[] args)
                                    19
                                                                                                                                  Document Outline
                                    20
                                                     Counter[] myCounter = new Counter[3];
                                    21
                                    22
                                                     myCounter [0] = new Counter ("Counter 1");
                                                     myCounter [1] = new Counter ("Counter 2");
                                    23
                                                     myCounter [2] = myCounter[0];
                                    25
                                    26
                                                     for (int i = 0; i < 4; i++)
                                    28
                                                                                                                                  Unit Tests
                                    29
                                                          myCounter [0].Increment ();
                                    31
                                                     for (int i = 0; i < 9; i++)
                                    32
                                                          myCounter [1].Increment ();
                                    35
                                    36
                                    37
                                                     MainClass.PrintCounters (myCounter);
                                F# Interactive
                              > Microsoft (R) F# Interactive version 12.0.21005.1
                                                                                                                             0
                              Copyright (c) Microsoft Corporation. All Rights Reserved.
                              For help type #help;;
                                                                         Test Results
                                                                                                    ✓ Tasks
                                                                                         ▲ Errors
                                                                                                               Package Console
```