**CS107.3 Object Oriented Programming with C#**

**Practical**

**Logo

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**Question 01**

**Task 1.** Create a C# Console application to covert user given Kilo Meter(Km) Value to Meter (m) value. Take a separate Class call “ConvertValues” and inside the class create a method call kilometerTOmeter. (No return type No Parameter Method). And display the answer within the method. Then create an object in main Class (program class) and call the method.

**Task 2.** Modify the same user defined method to method which accept a parameter value. That parameter value is the user given Km value. (No return type with parameter method). Display the answer by using the class object.

**Task 3.** Modify the same user defined method to method which accept a parameter and return the answer at the end of the method. You should return the calculated Meter value at the end of the method. (With return type with parameter method). Display the answer by using class object.

**Question 02.**

Create a C# Console application to find the area and the circumference of a circle.

User should insert the radius value to the program. Program should contain a separate class call “***FindValues***”. Inside the separate class add two methods call ***findArea*** and ***findCircumference***. Both these methods are methods which takes parameters. As the parameter you should pass the radius value. By using above two methods find the area and circumference of the circle and ***return the answer from both methods***. Create a class object in main class and call both methods and display the answers.

**Question 03.**

Enter 1 for Addition

Enter 2 for Subtraction

Enter 3 For Multiplication

Enter 4 for Division

Enter Your Choice : 3

Enter Number 1: 25

Enter Number 2: 2

Your Answer is : 50

Figure 01

Create the above mentioned console application and display it to the user. If user need to do an Addition user need to insert 1 as the choice. For subtraction it should be 2 etc.

Your program should contain a separate class call “CalculateValues” and inside the class you should add ***four methods*** which perform ***four arithmetic operations***. All the methods should ***take two parameters*** which are user inserted numbers.

And at the end of the method ***return the answer out of the method***.

In main class if user want to do an addition call only the addition method in separate class.

If user want to do a subtraction call only the subtraction method in separate class. Etc.

And display the final answer as shown in the figure 01.

**Question 04.**

Add a separate class file to Console application program and create a method call ***private void sayHello( ).***

Inside the method display *hello world.*

In main class create a class object and try to access the sayHello( ) method by using the class object.

Can you access the method? Explain why?

**Arrays**

**Question 05**

Declare a Single dimensional array with 10 elements. Input the values to the array and find the followings;

1. Minimum value
2. Maximum value
3. Average value
4. Reverse order of values

**Hint – use a method which in separate class. And call the method from main the method.**

**Question 06 Take time to think and complete the question…**

Create a Console application with two classes (Main class + another class).

Inside the main class take a user input which is the size of the array.

Pass the user inserted size as a parameter to the added class method.

Inside the method create an **integer array** based on passed value from main method.

Then take user inputs for the created array inside the separate class.

Every user input value should be followed by value 0 inside the array.

Eg Assume array size is 9 and it should as follows

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| U.Input | 0 | U.Input | 0 | U.Input | 0 | U.Input | 0 | U.Input |

Now print all the values inside the array.

**Question 07**

Declare two single dimensional array with the size given by the user and find , display the followings;

* Scalar Sum (Adding values of each element of an array)
* Vector Sum (Adding values of each relative elements of an array and store them in third array)
* Vector Product (Multiply values of each relative elements of an array and store them in third array)
* Scalar Product (Multiply values of each relative elements of an array and store them in third array. After placing the values in third array add all the values)

**Question 08**

Create a Console application with two added classes called “Animal” and “Dog”.

‘Dog’ is the derived class (Child) of ‘Animal Class’ (Base Class).

Inside the ‘Animal Class’ Create a method which for ‘Dog’ Class.

Inside the method print “I am an Animal”.

Inside the “Dog Class” Create a method and display “I have four legs”.

Inside the main method create relevant class object and Display as follows.

“I am an animal I have four legs”.

**Question 09**

Create a Console application has six classes (including program.cs [main class]).

Name your classes as GetNumbers.cs, Summation.cs, Substraction.cs, Multiplication.cs & Division.cs

GetNumbers.cs is the base class of above-mentioned classes. Except program.cs.

Inside GetNumbers.cs class take user input (Two numbers ) and make them available for Summation.cs, Substraction.cs, Multiplication.cs & Division.cs classes. (Use inheritance).

Inside above classes do the respective arithmetic operations and return answers.

Display answers inside program.cs class.

**Question 10**

Change the above code by getting user inputs from main class (Program.cs) and set values inside GetNumbers.cs class.