C# Assignment

DAY 3

CalculatorProgram

Create a class called Calculator which contains methods for arithmetic operations such as Addition, Subtraction ,Multiplication and Division. Division method should return the Quotient and Remainder(hint:use out parameter).

Follow the method signatures as given below:

public int Addition(int a, int b)

public int Subtraction(int a, int b)

public int Multiplication(int a, int b)

public double Division(int a, int b, out double remainder). //The method should return the Quotient and Remainder should be passed through the out parameter.

The methods should return the appropriate result.

Create a class Program with Main Method . Prompt for 2 operands and operator from the user, Call the appropriate method for operation and display the results.

Note:

Don't create any new namespace.

Create classes with pubic access specifier

Sample Input

Enter the operator

+

Enter the operands

12

10

Sample Output

Result of 12 + 10 is 22

Sample Input

Enter the operator

/

Enter the operands

11

2

Sample Output

Result of 11 / 2 is 5

Remainder =1

Sample Input

Enter the operator

&

Enter the operands

12

10

Sample Output

Invalid Operator

Find the Age of a person

Write a C# program that gets a person's date of birth as input and calculates his/her age and display the age. The program should also check whether the person is an adult or child. Display the results as given in the sample output.

Create a class called Person.

1. Populate the Person class with the following private fields. :

- String firstName // stores the first name of the person
- String lastName //stores the last name of the person
- DateTime dob // stores the date of birth of the person

2. Add **read-write** properties for the above three instance fields and store the information

3. Add **read-only** propertiy Adult that return the following computed information:

public String Adult // Check the age ,of the person , and if he is 18 or above return a string "Adult" and if he is below 18 return "Child".

4. Include a Method DisplayDetails

public void DisplayDetails() // Displays the details of the person.

5. Include a method with the below signature that returns the age of the person.

public int GetAge(DateTime dob)

Create objects for person from a class called Program that contains the Main method and display the details from the DisplayDetails method.

Note:

Don't create new namespaces.

Create classes with pubic access specifier.

Follow the naming conventions strictly.

Sample input:

Enter first name

Alice

Enter last name

Moses

Enter date of birth in yyyy/mm/dd/ format

1998/12/23

Sample Output:

First Name: Alice

Last Name: Moses

Age: 19

Adult

Sample input:

Enter first name

Joe

Enter last name

Noel

Enter date of birth in yyyy/mm/dd/ format

2002/10/15

Sample Output:

First Name: Alice

Last Name: Moses

Age: 17

Child

GameInheritance

Reena has to teach a lesson on various sports and games that are played around the world , to her grade 4 students..

To make the class interactive, she decided to call each student and ask them the name of a game they knew ,number of players needed to play the game and about games that are played with a time limit.

Help her by writing a C# Program that prompts the user for the said details and display them on the console.

Create the classes , along with the specified members as mentioned below.

1. class Game // parent class that describes the games properties

Include **Auto-implemented properties** for the game's name and maximum number of players.

Property Name	Description
public string Name	property to store the name of the game.
public int MaxNumPlayers	Maximum number of players included for the game

Method Name	Description
ToString()	Should overrides the Object class's ToString() method and returns a string that contains the nameof the Game, and the number of players as given in the sample output.

2. class GameWithTimeLimit // child class that should inherit class Game

Generate an auto-implemented integer property for Minutes to store the game's time limit in minutes.

Property Name	Description
Public int TimeLimit	store the game's time limit in minutes.

Method Name	Description
ToString()	Should overrides the Object class's ToString() method and returns a string . Should call the base parent class ToString and print the name and number of players . In addition this method should print the time limit for the game. (Refer the sample output.)

3. class Program

Create a class named Program with Main method to instantiate objects for the above mentioned classes and Display the output as given in the sample.

Note:

Do not create any new namespace.

Create classes with public access specifier.

The Main method should be defined in public class Program.

Sample Input:

Enter a game
Cricket
Enter the maximum number of players
11
Enter a game that has time limit
Football
Enter the maximum number of players
11
Enter the time limit in minutes
90

Sample Output:

Maximum number of players for Cricket is 11
Maximum number of players for Football is 11
Time Limit for Football is 90 minutes