C# Assignment

OpenableInterface

During the birthday party of Brian, The children were asked to pick a folded sheet of paper with handwritten fortunes inside. If the paper is marked with a letter T, a toy treasure box is gifted, and if it contains a letter P, a toy parachute is gifted to the children.

Simulate the scenario using C# classes and interface.

Create an interface named IOpenable. It should contain a single method named OpenSesame with the following signature.

Interface IOpenable

Member type	Identifier Name	
Method	String OpenSesame()	The method contains zero parameter list and returns a string

Create classes named TreasureBox, and Parachute that implements IOpenable.

class TreasureBox // should implement IOpenable

Member type	Identifier Name	Description
Method	String OpenSesame()	method should return a string "Congratulations , Here is your lucky win". (return the string exactly as specified .)

class Parachute // should implement IOpenable

Member type	Identifier Name	Description
Method	String OpenSesame()	method should return a string "Have a thrilling experience flying in air" (return the string exactly as specified .)

class Program // class for the Main method

Member type	Identifier Name	Description
Method	Main	Create instances for Parachute and TreasureBox and call the OpenSesame method to display the fortunes.

Write a program that declares an object for each of the implementing classes and calls its OpenSesame() method . Display the String to the console.

Note:

Don't create any new namespace.

Create classes with public access specifier.

The Main method should be defined in public class Program.

Declare the interface as public

Sample Input

Enter the letter found in the paper

T

Sample Output:

Congratulations, Here is your lucky win

Sample Input

Enter the letter found in the paper

P

Sample Output:

Have a thrilling experience flying in air

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

Extract Book Code - Hands -On

Universal Library wants to extract the book code for the arrangements and easy retrieval .

Write a program to implement this scenario to help them to extract.

Business Rules:

The book code should be length of 18 . else print " Invalid Book Code "

1 – The first 3 position is for Department Code .

2 – The next 4 position is for Publication Years

3 – The next 5 position is for Number of Pages.

4 – The next 6 position is for Book Id

The valid Department code is 101, 102, 103 else print " Invalid Department Code"

The valid Year of Publication is 1900 to 2020 else print " Invalid Year "

The valid Page Number is from 00001 to 99999 else print " Invalid Page Numbers"

The valid Book ID is character followed by numbers else print " Invalid Book ID"

Create a class Program and get the book code as input and implement the above functionalities

Sample Input 1 :

Enter the book code of length 18

101202012345J12345

Sample Output 1:

Department Code : 101

Year of Publication : 2020

Number of Pages : 12345

Book ID : J12345

Sample Input 2 :

Enter the book code of length 18

102201945678G54321

Sample Output 2:

Department Code : 102

Year of Publication : 2019

Number of Pages : 45678

Book ID : G54321

Sample Input 3 :

Enter the book code of length 18

102201945678G

Sample Output 3:

Invalid Book Code

Sample Input 4:

Enter the book code of length 18

104201945678G54321

Sample Output 4:

Invalid Department Code

Year of Publication : 2019

Number of Pages : 45678

Book ID : G54321

Product Details

Scenario

Avenue Mart has purchased products for their company. The supplier has provided the details of the purchased products .The SoftTech wants to generate a report on the purchased product details. Given the product details, write a program to display the product details.

Implementation

Create **Product** class with the following member variables

Data Type	Variable Name
string	_productName
string	_serialNumber
DateTime	_purchaseDate
double	_cost

Create 4 argument constructor with the following argument _productName, _serialNumber, _purchaseDate, _cost and override **ToString()** method. It must return product details in the specified format.

Create **Program** class.

create product object by parsing the input. Add all the product object to the List.

Display all the objects in the list in the specified format given below.

set of product details in comma separated format in the order Product name, Serial Number, Purchase Date, Purchase Cost.

The Purchase date must be in (dd-mm-yyyy) format.

Use **String.Format("{0,-15}{1,-15}{2,-15}{3,-15}", "Product Name", "Serial Number", "Purchase Date", "Purchase Cost")** to format the output.

Sample Output:

Product Name	Serial Number	Purchase Date	Purchase Cost
HairTrimmer	HT123	10-02-2017	800
Steel Box	SB231	11-04-2018	250
Rope	RP240	13-05-2019	100