Also submit labs 22, 23		Assignment 6 Extra Credit	A201/505 Object Oriented Programming (VB .Net) Image Browser Classes, Array of Objects, Relational Databases	H. Hakimzadeh 20 points Due Thursday Dec. 17 (11:59pm) Also submit labs 22, 23
----------------------------	--	------------------------------	---	---

## Problem specification:

Develop a windows based *ImageBrowser* application. The goal of this program is to read some information about an item (in this case a car) from a database and display/browse that information on screen. The information should be read from a table.

The information to be read are: Make, Model, Year, Price, and Image (the file name) of the car. This information is stored in a relational database in a table called car.

The interface for the program should look similar to the figure below:

Form1			<u>-0×</u>
State of the second	Make:	Honda	
	Model:	Accord	
and the second	Year	2008	
	Price:	21500	
Prev Next		1	Exit
		-	

For this program you need to develop a CAR class similar to the one discuss in our lecture. You also need to review a number of labs that deal with reading information from a database, creating arrays, and creating classes.

The first thing to do is to add some additional properties to your CAR class. Specifically, you need to add the price and the name of the image file to your class. Then you need to add a couple of new methods to the class. These are SetCarInfo() and GetCarInfo(). Note that these procedures are designed to copy data in-to and out-of the class variables.

Public Class CAR					
' Private Data					
Private make As String					
Private model As String					
Private year As Integer					
Private price As Double					
Private imageFileName As	Private imageFileName As String				
' Public Methods	' Public Methods				
Public SetCarInfo(theMake, theModel, theYear, thePrice, theImage)					
		' This procedure will copy its parameters			
		into the corresponding class variables.			
Public GetCarInfo(theMake,	ublic GetCarInfo(theMake, theModel, theYear, thePrice, theImage)				
' This procedure		' This procedure will copy the class			
		variables in to its parameter list and			
		return it to the user. (Note that the			
		parameters should be passed by			
		reference.)			
Public PrintCarInfo()	' Display the make, model and class.	year of the car. This is for debugging the			

End Class

Once the above class is created and properly tested. Your program should create an array of car objects. For example an array 10 cars. (Zero to nine, or larger if you wish)

DIM CarCollection(9) AS CAR

For Index = 0 To CarCollection.GetUpperBound(0) CarCollection(Index) = New CAR ' Dynamically allocate the CAR objects for the CarCollection Array Next Index

Your program should then open the database and read the car information from the database and load it into the array of cars. In other words, you should extract the (make, model, year, price and image file name) and place that information in an object (element) of our CarCollection array. For example the first car should be inserted in the first element of our CarCollection which happens to be CarCollection(0).

By now you have probably figured out the reason for creating the new SetCarInfo() procedure. This procedure is used to send the information that was extracted from the input file to the CAR object. So, your code will look something like:

CarCollection(0).SetCarInfo(make, model, year, price, image)

Once all the data is read and copied into the array elements, your program should display the information for the first car on the GUI, and then wait for the user to press the "Next" or "Prev" buttons. When these button are pressed you simply get the appropriate car information "**GetCarInfo()**" for the next or previous car from your CarCollection array and update the screen with proper information (make, model, year, price) as well as proper image file. The image file should be loaded into the picturebox.

Good luck and have fun.

I am available for consultation

Public Class CAR ' Private Data Private make As String Private model As String Private year As Integer Private price As Double Private imageFileName As String

> ' Public Methods ' This procedure will copy its parameters into the corresponding class variables. Public Sub SetCarInfo(ByVal The\_Make As String, ByVal The\_Model As String, \_ ByVal The\_Year As Integer, ByVal The\_Price As Double, \_ ByVal The\_Image\_File\_Name As String)

make = The\_Make model = The\_Model year = The\_Year price = The\_Price imageFileName = The\_Image\_File\_Name

End Sub

' This procedure will print the make, model and year and the image file name for the car. Public Sub PrintCarInfo() Console.WriteLine(make) Console.WriteLine(model) Console.WriteLine(year) Console.WriteLine(price) Console.WriteLine(imageFileName) End Sub

**End Class** 

## NOTE:

In order to create an array of 100 CARs, we must first Dimension the array of 100 references to CAR objects, then we must dynamically allocate a CAR object for each element of the array. The code below shows how this is done.

Dim CarCollection(100) As CAR

'Array of CAR objects (Note each car object must be instantiated later on in the Form\_Load event handler)

Here is how you instantiate each array element (CAR object):

```
Dim Index As Integer
For Index = 0 To CarCollection.GetUpperBound(0)
CarCollection(Index) = New CAR ' Dynamically allocate the CAR objects for the CarCollection Array
Next Index
```

NOTE:

Make sure to review the lecture and labs related to relational databases before you begin this program.