CIS 3309 – Shoe Store Inventory Management

The goal of this assignment is to give you some experience building applications that use the MVC Design Pattern, creating and using classes, work with arrays/collections, and work with text files.

You will create a program that allows employees of a shoe store to manage their inventory of shoes that are offered for sale. The program will also allow the employee to add new shoes to the inventory, view shoes in the inventory, and perform searches. The program will not need to implement any sale operations.

1. Create a new shoe form:
   1. The new shoe form needs controls to allow the user to enter information regarding a shoe that will be sold in the store. This form will add a new show to the collection of shoes managed by the application.
   2. Add form controls for the user to enter the shoe’s category (basketball, dress, cross-trainer, etc…), gender (male, female, unisex), price, description, manufacturer, and an image.
   3. Add a drop-down box or radio button group to allow the user to select a shoe category and gender.
   4. Include a set of images to allow the user to select an image to represent a shoe. The form should use a drop-down box to allow the user to select an image to assign to a shoe.
   5. Add a button to allow the user to store the shoe. The store operation will involve creating an object that represents a shoe with the form data and store the shoe in a collection managed by the program
   6. Add a button to allow the user to view shoes in the system’s inventory. This button should redirect the user to a form that contains search tools and controls that display the shoes and information for the shoes.
2. Implement the MVC Design Pattern:
   1. Create classes to represent the necessary components for this program. You will need to create an instance of these classes and use them in the Form’s class. When you write these classes, keep in mind that the classes should be written so that it can be used in any other program regardless of the user interface. This means you shouldn’t rely on GUI controls in these classes. The methods of these classes are passed any inputs the methods of the classes that require them and deliver any output that the GUI will display on its own.
3. Create a shoe display form:
   1. This form will allow a user to view shoes and their information. The shoes that are displayed will come from the collection of shoes managed by this application.
   2. Allow the user to view all shoes. The program must display each shoe and all the information for each shoe.
   3. The form must contain a search tool that allows the user to select a shoe category and gender, find all shoes that match the criteria, and display the shoes along with their information.
   4. Include at least one more search of your choosing, which can allow the user to search for shoes based on a manufacturer, price, etc... The search should find all shoes that match and display the shoes along with their information.
4. Save & Restore the shoe inventory:
   1. When the program exits, the program must save the collection of shoes to a text file. You will need to save enough data to recreate the shoes and the shoe collection the next time the program runs.
   2. When the program starts, the program must use the previously save text file to create all the shoe collection and all the shoes. If the text file doesn’t exist, then you should create an empty collection.
   3. You should find the appropriate form events to save and restore the collection.
5. You need to properly name all your controls, variables, the class, and all other elements regarding this project. See the lecture slides on Coding Style. Also, you need to put thought into the user interface design, so it can be used by anyone with little effort. This means that there should be clear instructions on how to use the application.

**Due:**See the assignment posting on Canvas.  
  
**Submission:**You need to zip the root folder for your solution into a single zip file and submit the assignment in Canvas. To submit the assignment, you need to click the Assignment’s Title “Lab 3” to view the submission form and upload the zip file.

**Make sure you close Visual Studio before zipping the solution. Otherwise, necessary files that are in use will not be included in the zipped file, and we won’t be able to grade your assignment.**

Please be sure to save your work periodically as you proceed and also back it up. You may want to store a copy in a separate place. If you are going to zip an application in order to store it, BE SURE TO FIRST CLOSE Visual Studio; otherwise, the zip file will not contain all the necessary files.