Fall 2022 Lab Final Exam — National Dog Bed Order Application
CSIS 6403 — (150 points) — Mrs. Donna Jackson

The National Dog Bed Company has hired you to create an application that allows dog beds to be purchased. Open the Windows forms project given. There are two forms for this application: Customer Form and Add/Update Order Form. These have been provided for you. The company has given you three files: *DogBedProducts.txt* and *Customer.txt*. These two files are read in only. No writing to these files. The third file, *DogBedOrders.txt*. This file contains the customer information and the dog bed ordered as well as size, price, quantity, sales tax and total order amount. This file is read in and written to.

Files & Data Row Definitions

1. DogBedProduct.txt: DogBedName|Price|QuantityOnHand
2. Customers.txt: CustomerName|Email Address|Phone
3. DogBedOrders.txt:
   CustomerName|EmailAddress|Phone|DogBedName|QuantityBought|Price|Subtotal|SalesTax|OrderTotal

There should be only one DB class that will handle reading and writing to the files. Each file will have its own Reading methods. The DogBedOrders file will have a save method. All of these methods can be in one DB class called DogBedDB.cs.

Each file should have its own class with each data item being a property. In each class you will need a GetDisplayText method that will return a nicely formatted string. Reminder: To know what data to put in the classes look at the data in each file. There should be a total of 5 classes: DogBedProduct, Customers, DogBedOrders, DogBedDB and Validator.

Forms

Customer Form:

- You will need to read in all customers from the customer file and display Customer name in the CustomerName Combobox. When the user selects a customer, fill in the Email and phone number of that customer.
- When the user changes the customer, first clear all controls but the customer combo box and then set the controls to the new customer.
- The CustomerOrders list box will contain any existing orders for the customer you choose. This is a list box so the items are strings. Here is where the GetDisplayText (or override of ToString()) of the objects will be useful.

Buttons:

- The Add New Order Button is adding an order. It will need the customer information sent to it. When it opens the Customer information is displayed in Read Only textboxes.
- The Update Order Button must have an item selected in the listbox. If an item is selected, this should return an error message telling the user to select an order.
- The Delete Order Button must delete the selected item from the listbox. If no item is selected and the delete order button is clicked, there needs to be an error message displayed to the user.
- The Exit button causes the application to stop and close.

Add/Update Dog Bed Order Form:

- When the Add/Update Dog Bed Order Form is opened, the form load event needs to see if this is adding or updating an order.
- The easiest way is to use the object sent to the form.
- If the customer object is sent, then the form is an add. Validate the form name is set to "Add New Dog Bed Order" and the Add Order button text is Add Order.
- If the order object is sent, then the form is an update. Change the form name to "Update Dog Bed Order" and the Add Order button text is "Update Order".
- The names of the dogbed products must be loaded into the combo box before the form is shown.
- There will be a ComboBox for quantity and its values depend on the dogbed products quantity on hand.
- The quantity combo box values will depend on which dog bed is chosen. If no dog bed is chosen, the quantity combo box should be empty. The quantity from the Dog Bed is what is used to populate the quantity combo box. For Example, Dog Bed heated only has a quantity of 5 so the max numbers in the quantity combo box is 5. The Dog Bed Blankets has a quantity of 100 so the combo box would have numbers 1 to 100.

Calculations:

When the dog bed and quantity have been chosen, then the calculations need to be done.

The information comes from the dog bed object chosen. The Order object should have properties for price, quantity chosen, subtotal, sales tax, and final order quantity.

Buttons:

There are 3 buttons: Add Order (Update Order), Clear and Cancel.

Add Order button will send the new order back to the Customer form and display it in the list box.

Update Order button will bring back the changed order to the Customer form and update the changed order in the listbox.

Clear button will clear all fields including the calculations. Combo boxes should have selected index set to -1. Focus should be in the Dog Bed combo box.

Cancel creates a message and sends it back to the Customer form. Message states Customer has canceled order. Then it closes the order form and goes back to the Customer form.

Application should include validation methods for all inputs on both forms. This should be done in the Validator class. Provide appropriate error messages when selections are not made, and incorrect data is entered, or data is missing.

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Make sure to test your application with several different combinations of dog beds and quantities, adding, updating, and deleting to make sure the information is returned correctly and displayed.

Make sure to abide by all coding requirements and that your application performs as the application requirements have said.

Create a zip file named username_LabFinalExam.zip

When the internet is available, upload your zip file to blackboard and submit.

Here is one way to NOT lose points:

1. Add your classes to the project. Then as you add the class place your required comments at the top of the class.
2. Open the code for the forms, make sure to add your required comments.
3. Once the classes have been created, then use the classes in the forms.
4. Use correct naming conventions. I should not see any non-descriptive variables, method names, or objects.
5. If you have time remaining and you have tested your project, then customize your project by changing colors, backgrounds, and fonts.
6. Each change you make retest you application so that your customizations don't cause errors.

If you get errors running your code, **USE YOUR VISUAL STUDIO DEBUGGER**! Place breakpoints in your code and step through the code to see what and why you have the error then correct it.

This is how you would do it on a real job.

Best of luck!