

Problem Solving and Programming in Business

Final Project

Integrate everything you've done all semester into a **masterpiece of Windows development**. Write a fully-functional, extremely well tested Windows application that allows the user to do the following:

- Add / Edit / Delete (Cyber) pet data in a database you develop.
 - Use the data form wizard to start. Feel free (and encouraged) to customize it to your liking and creative impulses.
- Put all of the pets into a list where you can
 - Search for a single item in the list. If found, display
 - the position of the target item in the list
 - the values immediately before and immediately after the target
 - check for duplicates anywhere in the list
 - sort the items in the list
- Create pet objects read from the database.
 - This means implementing a CyberPet class hierarchy. Make it at least three levels deep.
- Exercise the pets to demonstrate their attributes and methods at each level of the class hierarchy. This means
 - creating various instances of each class and subclass
 - assigning their properties concrete values from the database
 - calling their methods to produce output that demonstrates their functionality for each class and subclass

Include your full application framework. I want to see a great menu system (with hotkeys), a status bar, an about box that you are proud of, help on help, a feedback form, a survey form, a system information form, the Tic-Tac-Toe game, and anything else you can do to make this as user-friendly an application as you can.

Thoroughly test your application. Watch out for “off by one” errors and always test the limits. It's much more important to me that the features you do implement are well tested and totally bulletproof than whether or not you implement all of the features. In other words, quality is worth more than quantity.

Be sure to use your best programming practices (which by now you ought to be doing by default). These include but are certainly not limited to:

- Descriptive control and variable identifiers
- Informative and meaningful comments
- Careful setting of the tab order
- Keeping to the “zero, one, infinity” principle
- Aesthetic visual design
- Keeping the code “behind” the buttons to a minimum

... and everything else we've talked about.