Assignment 2 Milestone 3 – Database Features

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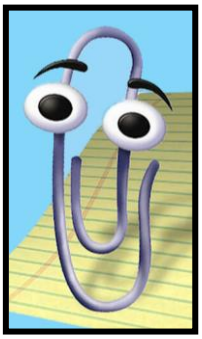

Objective The student will implement various features into the database interface, created in Milestones 1 and 2.

Background – Features

One of the most challenging and creative aspects of programming is in the decisions on the features to include. Features are extras onto the base requirements that provide additional functionality to the program. Note that features included should be appropriate and useful, rather than just thrown into the mix. Just ask Microsoft's Clipper tool!

Basic Requirements

1. Read over the complete list of features appropriate for this assignment. With approval, you may create other features to include.
2. Select three or more of the features to include in the milestone 3 submission. The features on the list was specifically selected for previous labs covered in class.
3. One at a time, implement the three selected features into the program. Program one feature completely before starting on the next.
4. At the top of the program file, provide clear documentation indicating the features selected for completion.
5. Submit your work to the marmoset server.
6. Show your work to the instructor in class.

List of Features

Read over the list of features on the following page. Included in the description is the lab in which the material required is covered. Each feature was selected based on its overall complexity and importance to Object Oriented Programming. The milestone writeup indicates that only three are required, but very good and studious programmers will complete more than required. The gauntlet is thrown – we challenge any student to complete all six of the features listed. (Just like Danny LaRusso in *Karate Kid Part 2*, https://www.youtube.com/watch?v=f8tx_8zkczc)

List of Features

Data Processing Reports

The report requirements only include outputting the stored data. Perform some additional reports that involve data processing, such as totals, average, counts, standard deviation, accounts receivable, etc… It should be an appropriate data processing task for the item.

File I/O and Exceptions (Lectures 5-6)

The current version requires only user input for the data. Implement the capacity to save data to a file and read data from a file.

Inheritance and Polymorphism (Lectures 7-8)

Use an inherited structure for the database item, that can allow for flexible data formats. Use a polymorphic structure within the database, to take advantage of the inheritance structure. If done correctly, polymorphism can be implemented using only a single line of code.

Graphic Interface (Lecture 10)

Replace the text-based interface described in Milestone 2 with a graphic user interface, including buttons, text fields, dialog boxes, etc… Students wishing to complete this option can replace milestone 2 with a graphic interface, and it would count as both milestone 2 and one of the features.

Generics (Lecture 11)

The current version of this assignment uses the Java ArrayList data structure. Instead, create your own version of ArrayList with similar functionality with generics.

Collections (Lecture 15)

Java provides a Collections object to allow for easy sorting and other database needs. Implement various commands from the Collections library into the database.