



CST 283

Programming Assignment 3

Winter 2020
Instructor: T. Klingler

Objective

This program provides an opportunity to practice manipulating array-based lists of objects.

Overview & Instructions

Define a context that requires storing a collection of related data. Ultimately, you will implement this entity in the form of a class. Your attributes can be numbers and/or strings. Include at least four attributes with one as the key that defines the object uniquely.

Create a text file to contain the data for at least 10 of these objects. Data for one object should occupy one line of the file. You may keep your file simple with minimal white space or comma delimiters separating each of the attributes.

Create driver program that includes an array of objects (no use of the Java `ArrayList` class, please). Your program should be an interactive list manager. It should be driven by a simple menu that offers the user to manage the elements of the list (stored as the array of objects). Your interface should be driven by a formal frame-based GUI that includes text fields, text areas, buttons, etc. Button clicks could prompt for the various list actions, but you are free to design your own (user-friendly) interface within these constraints. As part of this, your program should include the following features:

- Read information from input file
- Add a new element
- Delete an existing element (using the key to search and delete)
- Sort ascending relative to one field of data
- Sort descending relative to a different field of data
- Randomize the list
- Write the information back to the file in the same format

Design your application using guidelines to maximize modularity, reusability, and maintainability.

Deliverables

Deliver the following to the online course management system **Assignment** dropbox:

- **Upload** your source code (.java) files
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Notice

This is an individual assignment. You must complete this assignment on your own. You may not discuss your work in detail with anyone except the instructor. You may not acquire from any source (e.g., another student or an internet site), a partial or complete solution to a problem or project that has been assigned. You may not show another student your solution to an assignment. You may not have another person (current student, former student, tutor, friend, anyone) "walk you through" how to solve the assignment.
