Lab 11 — Programming Practice (Week 12)

`ArrayList` and Generics

Workshop Exercises

These are just for practice, and will not be assessed.

1. Write a Java program that allows users to enter and edit a list of your friends' names. The program should have a main loop that prints out the full current list of names, one per line, with each name preceded by its numeric position in the list, and prompts them for what they want to do. Give them the following options:

   - Enter names, adding them to the end of the current list. In this mode, the program keeps reading names, one per line, until the user enters a blank line.
   - Delete a name. This prompts for the position number of the name to delete.
   - Quit.

   The list of names should start out empty.

   Hint: this is a job for the `ArrayList` class.

Homework

These will also not be assessed.

2. Extend the program above to provide a command to move a name to a different position in the list.

3. Extend the program above to support the concept of an "insertion point", a point between two list entries (or before the first or after the last) where newly added names are placed. Add a command to your main loop to allow the user to set the insertion point, and make sure to show the insertion point when showing the list of names.

   For this part, you should create your own class, similar to `ArrayList`, that supports the concept of an insertion point. Since the idea of a list with an insertion point is flexible (it could be useful for lists of *anything*, not just strings), make this new class generic. Feel free to use the `ArrayList` class in your implementation.