

Homework 1, CSCI 430/530. Fall 2024.

This is an individual assignment.

Due date: Friday Sep 6

Implement the following in Java:

1. Create a data type **Person** with three string fields: **firstName**, **lastname** and **id**. The field **id** is unique to each person. Add accessor methods, a constructor with three parameters, and the **toString()** method.
2. Create a class **MyMain** for the main program. Within the **main()** program, instantiate a linked list (use the Java **LinkedList** class) . Add the following functions(methods) (static methods within the class **MyMain**) that the main program will invoke:
 - **store(<input stream>, <linked list>)** that reads the data for several persons from the input stream and stores the data in the linked list.
 - **display(<output stream>, <linked list>)** that writes the data for all person objects in the linked list, on the output stream, one per line.
 - **find(string sid, <linked list>)** that returns the index of the person object in the linked list, that has the same **id** value as **sid** (return -1 if no such person exists). This can be done as a simple search that goes sequentially through all the objects in the linked list.
 - Create a data file with data for a few person objects.
 - In the main method, call the **store()** and **display()** methods to read the data and display it. Invoke the find method a few times. Compile and test your code.
3. Construct a different version of the above program as follows:
 - (1) create a data type **PersonList** that uses the Java **LinkedList**, and supports the operations from Question 2.
 - (2) instantiate the **PersonList** object in the main program and invoke its methods (as per the appropriate syntax), so that program produces the same output.

Reflection. Which of the two versions (Question 2 or Question 3), in your opinion, represents a more process-centered approach? Which one represents a more data-centered approach?

What additional features, in your opinion, if added to the `LinkedList` class might reduce the coding effort in Question 3? **Justify all your claims.**

Submission: create folders `Hw1Q2` and `Hw1Q3` in your Github repository for this assignment.

Reflection: In the D2L dropbox, upload a word file with all your answers to questions.