

Lab4 (50 points)**Due 4/1/2023**

Submit your solutions to canvas. For programming assignments do not send the entire project. All that is needed are the files ending in .java. Each class will have to be defined in its own separate .java file. All driver code should be put in one .java file. **Please make sure your name is included** at the top of each .java file. Please put all files into one zip file and submit the zip file to canvas.

Goal: Practice reading and writing files. Practice implementing `Comparable` interface and `Comparator` interface. Refer to the `FileReadWriteEx.java` example on canvas for outputting to a file.

Problem 1

This lab is an extension of lab3. You can start by bringing your code from lab3 into a new project called lab4. In lab3 you read the data from a file, processed it using a `HashMap`, and displayed the data for each person out to the console screen. In this lab after you display the data out to the console screen you will make a `List` from your `HashMap`. Then you will use a `JOptionPane.showInputDialog` panel to prompt the user for an output file name. You will output the person `List` three time to the output file. The first time the output will display the `PersonP2 List` in sorted order according to `id`. The second time your program will display the `List` out to the file it will be sorted according to `name`. The last time your program outputs the `List` to the file it will be sorted by the number of transactions.

Problem 2

Write a Java program that generates a html web page for yourself. An example of your program executing might look like this:

```
Enter your name: Joe Schmoe
Describe yourself: I am a computer science major, a member
of the ACM club, and I hope to work in Silicon Valley when
I graduate.
```

Your program should then output a file named `index.html`. The html file should look like this:

```
<html>
<head>
</head>
<body>
  <center>
    <h1>Joe Schmoe</h1>
  </center>
  <hr />
  I am a computer science major, a member of the ACM club
  and I hope to work in Silicon Valley when I graduate.
  <hr />
</body>
</html>
```

You should now be able to left double click on your web page, and it will be displayed in your default web browser. The other option is to right click and choose “Open with,” and choose the web browser of your choice. **Make sure to include the `index.html` file** that your program generates in the zip file that you submit to canvas. For example:

