CS 105 Lab Exam Practice 1

Jackson Eshbaugh

November 12, 2024

Question 1.

Roll Call: The CS department is hosting a picnic (with extra credit for whoever attends). There's one problem: they don't have a way to track attendance for the extra credit. Professor Frank (department) recruited you to build a Processing program to do this task.

1. Create a `Student` class that holds a student's name, age, L-number, major, and minor. Implement a constructor that sets each of these values, and a method that gets each of them.
2. Create an array of `Student` objects to track attendance. Make it 100 elements long—we're not that big of a department).
3. Implement the following:
   (a) `add()`: add a student to the array
   (b) `remove()`: take a student out of the
   (c) `find()`: check if this specific student is in the array (should get extra credit)
   (d) `display()`: display the array in the console (in some logical way).

Question 2.

Text File Checkerboard:

Using the `checkerboard.txt` file (download at `https://tinyurl.com/ay7busxh`), draw a colored checkerboard that takes up the entire screen with the color of each square given in the file.

Sample `checkerboard.txt`:

```
4
255,255,255
250,120,360
80,80,80
1,2,3
```

The first line of `checkerboard.txt` is the total number of boxes to draw. It is guaranteed that this number will be a perfect square. The following lines consist of the colors of all the boxes in the checkerboard. For a `checkerboard.txt` with first line n, create a $\sqrt{n} \times \sqrt{n}$ board using the given colors.

For the sample given above, a correct solution to this problem would produce a 2×2 board with these color values:

```
color(255, 255, 255) | color(250, 120, 360)
color(80, 80, 80) | color(1, 2, 3)
```

Note: The Processing function `sqrt()` may be useful.