

COSC 282 Lab 2.3 GUI for Empirical Testing

This code will serve as the base for some empirical testing over the coming weeks, so it will be worthwhile to take some time to improve it and make it more convenient. This lab will be completed in teams of three.

Enhance Output

Use `PrintWriter` to output the relevant data to a **CSV** (Comma Separate Value) file that can be opened as a spreadsheet. As the name implies, **CSV** files have data elements separated by commas. This will save us the trouble of having to copy and paste constantly. When opened in a spreadsheet, the values separated by commas will appear in subsequent columns.

You should still provide **some** output directly to the user, so that she or he doesn't have to open the **CSV** file just to determine if the program ran successfully.

Enhance Input

Create a GUI that allows the user to set the various parameters.

Begin by deciding what kind of control would be appropriate for each (`JTextField`, `JSlider`, etc.) Make sure that you consider more than one possibility for each. Discuss why one choice would be better than another. One member of the team should take on the task of taking notes of the discussion and writing a summary which will be included in the group's lab report.

Next, each team member should prepare a design (on paper) for a possible layout for the controls. If in the process of designing your layout, you change your mind about the type of control to be used, keep notes of **why** you made the change. Make your layout as detailed as possible – include every embedded `JPanel` or other component you think you will need, specifying the `LayoutManager` needed. These individual layouts will be included in your group lab report, so make them neat and clean.

Once everyone in the group has designed a layout, bring them together and discuss the options, again having a recorder taking notes of the discussion (to include in the lab report). At a minimum, you should select one of the layouts and explain why. Even better – continue to refine your layout by selecting features of more than one layout to combine. You might want to poll other students for their opinions.

Finally, once you've selected your final layout, implement it in Java and test it thoroughly. Each team will present and demonstrate their final product to the entire class.

Your submission will consist of the following:

1. A formal ~~bound~~ PDF format lab report (one per group):
 - a. Cover page with lab number and title, course number, date, names of team members, and their email addresses.
 - b. An overview that summarizes the work completed.
 - c. A breakdown of work contributed by each team member.
 - d. Summary of the discussion on which controls to use.
 - e. The candidate design proposals by each team member.
 - f. Summary of the discussion on GUI designs.
 - g. A listing of file names / Java classes included in the final code base.
 - h. Screenshots of successful runs of the program.

2. Your code (one per group), which should be
 - a. Fully commented
 - i. Include a header comment in every file.
 - ii. Include a class comment for every class.
 - iii. Include @author and @version tags in every class.
 - iv. Include @param and @return as appropriate in all methods.

 - b. Formatted and indented in a consistent manner. If using Eclipse, I recommend using the setting Preferences::Java::Code Style::Formatter:: Eclipse [built-in]. Once that it set, you can keep your code neat by using the command Source::Format regularly.

3. A summary of what you learned doing this lab (one per person).

Submission instructions:

1. The student whose last name is first alphabetically will submit a single zipped archive of the lab report & code for the team.
 - a. After submitting & verifying, this student should send an email to me, cc-ing the other team members, stating that the lab has been submitted.
 - b. The email should also include the archived submission. I will not look at the emailed submission (I will use the one in Sakai); but it will serve as confirmation for the other team members that the correct version of the group's work has been properly submitted on time.

2. Each student will submit his / her individual paragraph.

3. In the 'submission text' box, each student should include two lines:
 - a. "Team members included Adams, Barnes, and Culver" (with your actual names alphabetically, of course ☺)
 - b. "I confirm that this is my full and final submission" – type this ONLY after you have uploaded, then downloaded, then checked the submission.