

CS 3053

Project – Survey and Analysis

Due Tuesday 2014.02.20 at the beginning of class.

Overview

In this assignment you will conduct a small survey to gather information about the wants and needs of potential users of your collection browser. In class, we had several group exercises to learn about the factors to consider when designing questionnaires to elicit relevant information. Out of class, you will use the techniques that you practiced to plan and carry out a small survey.

Individually, you will compose a set of questions and responses, sketch them, then implement them in an additional window in your application. As a group, you will gather your questions and responses, determine which ones to keep, integrate them into a refined one-page questionnaire, ask people to complete the questionnaire, and analyze their responses.

The individual implementation task in this assignment is likely to require significant time. Get started as soon as possible! Leave enough time for your team to complete the group tasks. You must complete **all** individual tasks before proceeding to group tasks.

Individual Tasks

Individual tasks #2–4 must be completed entirely on your own.

#1: Review the slides on surveys and questionnaire design from class. **Think** about which “factors to consider” are especially important for the success of your team’s browser application.

#2: Based on those factors, **write** five questions to elicit information that you anticipate will be relevant and helpful for designing your application. Decide which response type and allowed responses are most appropriate for each question. To help you learn a variety of Java widgets, your responses **must include**: a set of non-mutually exclusive options (*Values*); a small integer (*Values*), a Likert scale (*Scale*), a set of ranges (*Range*), and a typed answer (*Text*).

#3: Implement a new frame to display questions and enter responses. Start from a copy of your team’s integrated build from the previous assignment. Duplicate your stage2 main() class, call it `Stage3.java`, and uncomment the `createScript()` line for stage3 in `build.gradle`. Whenever you build, the executable `stage3` should appear in `build/install/base/bin`.

Add code to create, lay out, and display a second frame for your scenarios. In the frame, lay out the questions and responses for your five questions vertically. Use `JLabels` for the questions themselves. For the five response types listed in #2, use a set of `JCheckboxes`, a `JSpinner`, a `JSlider`, a set of `JRadioButtons`, and an editable `JTextArea` in a vertical `JScrollPane`, respectively. Read the Java APIs to learn how to specify allowed values for each widget. **Hints:**

- Use a `ButtonModel` to manage each set of checkboxes and radio buttons.
- `JSpinner` shows integers by default but needs a `SpinnerModel` to limit which ones.
- `JSlider` needs minimum and maximum values. Populate a small `Dictionary` then call `setLabelTable()` to map `JSlider` integers into text labels for the Likert scale.
- `JTextArea` has a variety of methods to set number of lines, line wrapping, default text, etc.

Put a “Finish” `JButton` at the bottom to let the user indicate when they’re done. Create simple listeners (`ActionListener`, `ChangeListener`, `CaretListener`) for the response widgets to flag which questions the user has touched. Make it so the button is active only when all five

responses have been edited. Finally, for a much better looking layout, consider visually grouping and separating your widgets by wrapping them in `JPanels` decorated with `Borders`.

When your app starts, show only your new frame. When the user triggers the “Finish” button, print out the questions and the user’s responses to the console in a readable format. Close the frame but **don’t** exit the program.

#4: To demonstrate your implementation, take a screenshot of your new frame showing suitably representative responses. Trim the screenshot and put it in the `Results` subdirectory as `questionnaire.jpg` or `questionnaire.png`. Hit the “Finish” button, copy what is printed to the console into a text file, and put it in the `Results` subdirectory as `responses.txt`.

To **turn in** your individual work, run `gradle clean` to reduce the size of your build. Append your 4x4 to the `project` directory; mine would be `project-weav8417`. Zip the renamed directory. Submit your zip file to the “Individual - Survey & Analysis” assignment in Canvas.

Please remember that the TAs and I are available during our office hours to help you learn the ins and outs of Java and the Swing library of classes. The Booster Session every Friday from 1:30–2:30pm in 226 DEH is an especially good time to get practical help!

Group Tasks

Complete all individual tasks before proceeding to group tasks.

#5: Discuss your individual questions. Assess the relevance and general benefits of each one to designing for your project theme. Rank them and select the top **five**.

#6: For each selected question, assess the correctness and appropriateness of the allowed responses in terms of the bullets on the “Other Things to Consider” slide. Briefly describe at least one way to significantly improve one of the questions, its response type, or allowed values.

#7: Combine your individual questionnaire implementations to display a frame that shows only your selected questions. *This will be **much** easier if you plan ahead and make your individual implementations modular! Consider putting each question-response pair inside its own easily movable `JPanel`.* You will all start from the resulting shared build in the next assignment.

#8: Recruit **three** people to take your questionnaire. These people can be anybody except your HCI teammates. Time how long it takes each participant from when they start until they hit “Finish”. Capture their responses in text files like in task #4. Follow up by asking them which questions (if any) gave them trouble and in what ways.

#9: Report on your discussions, assessments, choices, observations, and conclusions from tasks #5–#8. Write this together. Be objective, clear, detailed, and thorough, yet succinct. *In grading we will look in particular at the understandability and usefulness of selected questions, the appropriateness of allowed responses, the cogency of your analysis of the questionnaire design and survey responses, and the likely overall utility of the questionnaire for discovery.*

Your report should be between 1.0 and 2.0 single-spaced pages of writing. Use regular paragraphs and standard formatting (12 point font, 1 inch margins, etc.) Start the first page with a few lines stating your team number, name/logo, and list of member names. At the end attach a representative screenshot of your combined/refined questionnaire frame followed by the three response text files, and refer to any or all of them in your writeup where appropriate.

To **turn in** your group work, go to the “Group - Survey & Analysis” assignment in Canvas to submit your results as a PDF. Only one team member needs to turn in the group component.