

# **Criterion A: Planning**

## **Problem Statement**

Mr. Dilok (Kae) is a tutor who has trouble with the grading of multiple-choice exams since it is a time-consuming and repetitive process that Mr. Kae has to deal with on a daily basis. He often experienced the hassle of misgrading and losing answer sheets.

word count: 45

## **Description of Scenario from the initial interview (see appendix 1)**

Mr. Kae runs a test prep center and provides college counseling services for Thai students who are looking to go to a Thai university. He deals with multiple-choice exams from his students on a daily basis. He currently grades his paper manually and that is problematic as he occasionally misgrades<sup>1</sup> and loses students' papers. He used to ask students to grade their own paper but he doesn't do that anymore as he thinks that it's a waste of time for students to grade their own work.<sup>2</sup>

word count: 86

## **Rationale for the Proposed Product**

I've decided to write a computer program because it allows me to develop responsive and advanced sets of instructions that can be used to form the basis of my program. I've chosen to provide a graphical user interface for this program since students and teachers may find it difficult to interact with the program through a console-based interface. Besides, I've decided to use Netbeans to develop the program as it provides me with a palette of swing components, which makes it easier for me to design the graphical user interface. In addition, I've decided to use Java to develop the program as it works across multiple operating systems, allows me to develop my program in an object-oriented manner, and allows me to implement functionalities from the Java libraries. However, the most crucial reason for using Java is the fact that I, the programmer, am most familiar with it.

word count: 148

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<sup>1</sup>Dilok Buarode, interview by author, Silom, Bangkok, November 17, 2019, transcript question # 5, Appendix 1

<sup>2</sup> Dilok Buarode, interview by author, Silom, Bangkok, November 17, 2019, transcript question # 5, Appendix 1

## Success Criteria

- Usability Features
  - All text fields for input are labeled appropriately and clearly.
  - ComboBox's model updates to reflect the amount of multiple choices needed
  - Search sets of question by name
  - Search sets of question by tag
  - Sort sets of question for
  - Multiple answer choice style
  - Include Thai language
  - Set of questions can be import and export for easy backup solution
- Error/Exception Handling
  - When users didn't put in solution for all of the available questions make an error pop-up
  - When users left the name textfield of set of questions blank make an error pop-up
  - When users are naming their set of questions with a name that has already been used by another set of question make an error pop-up
  - When user is clicking an empty row of the table in the library page make an error pop-up
  - Use JSpinner to limit input range
  - Disable buttons, spinners, and textfield and effectively prevent glitches.
- Functions (Things the program does)
  - Add
    - Set of questions (attributes: name, amount of questions, amount of choices, initial score, answer deduction, correct answer score, notes)
    - Solution for each set of questions' question
    - Results for each set of questions
  - Calculate
    - Users' score for each set of questions
    - Final score for each set of questions
  - Store
    - Set of questions
    - Solutions for each set of questions
    - Results for each set of questions
  - Display
    - All sets of questions are sorted by
      - Name
      - Number of question
    - Solutions
    - Results for each set of questions

- Compare
  - Compare users' answers with solutions for users' score calculation
- Convert
  - Set of questions can be import and export

word count: 0 (bulleted list)

## **Summary of client's feedback on first prototype (See appendix 2)**

My client was mostly dissatisfied with the first prototype as it doesn't have the page where the test-taking experience happens, the answer sheet page. Mr. Kae said that the prototype only contained the page for **creating** sets of questions, the page for **managing** sets of questions, and the page that **displays test results** for each set of questions. He was, however, impressed with the sets of questions. He was also confused by the tabs and buttons as I was using tabs to display how pop-up windows would look like. He was also dissatisfied with timing and choice swap menus as they were unclear to him. He had also pointed out that the result menu should include the name of the test taker and the name of the test session. Number of choices should also be no more than five or six. Open and result tabs ought to be removed. The client added that there should also be an option for displaying solutions at the end of each question.

word count: 168

The annotated prototype has been added (See appendix 3)

total word  
count: 447

# Appendix 1: Initial interview



Crit\_A\_Appendix\_1\_Interview\_1.pdf

# Appendix 2: Prototype interview



Crit\_A\_Appendix\_2\_Interview\_2.pdf

## Appendix 3: Client's Annotations on the prototype's screenshots

File Edit Help

Library Open Create/Edit Result

Sgt of As Name

Question Name

Date Taken

Total Time Spent

Average Time Spent Per Each Question

Score

test taker

Session name

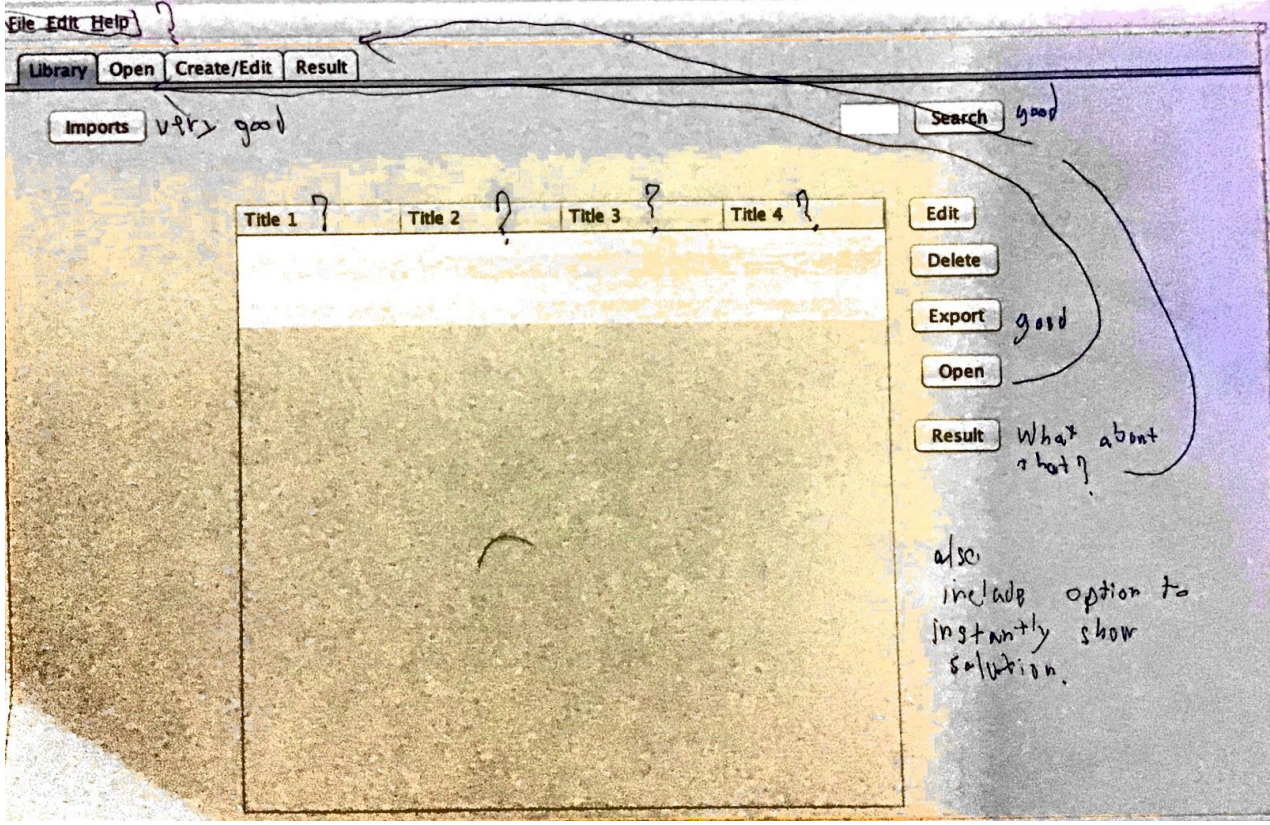
File Edit Help

Library Open Create/Edit Result

test taker

User

Exam condition  yes



both edit and create?

make this more clear

Name

Types of Timed Condition  Entirety  Individual  None

Number of Questions

Amount of Time  min./hour/second?

five should be max ← Number of Choices (you often 7)

Choices Style  a., b., c., d., ...  1., 2., 3., 4., ...

good

Do you want to swap choices?  Yes

make this clearer

Render

Initial Score

I like

Correct Answer Score

these

Question	Solution

Add / Save

Incorrect Answer Deduction

as some test deduct points for incorrect answer

Reset

Tags

organized by topics and subjects

why blank?

Want to see actual answer sheet not just edit/lib./result

excellent this page