

## Criterion A: Planning

### **The Scenario**

As a member of my school's academic decathlon team, I recognized that we had a lot of practice materials and questions through a third-party service, but did not have a method to effectively use these materials. This was because these practice materials were pdfs, which is difficult to use as we had to use an excessive amount of paper to print the questions out and have to painstakingly grade them by hand. Thus, this was extremely inefficient so we rarely used the materials. I also saw how our coach had to put in hours each week to create kahoots for us, and there were often errors in those kahoots. Thus, a user-friendly program that allowed for easier quizzing would ensure our teams success for the competition. Therefore, I reached out to the academic decathlon coach to code a program that would help streamline these issues. He requested that this program could import pdf files and have a part where all the questions are presented and a portion where missed questions are given. Moreover, he also wanted a function to export the pdf files to an.xlsx file. Evidence of this interaction can be accessed in the appendix. Furthermore, my computer science teacher will act as my advisor.

Word Count: 207

### **Proposed Program**

To solve these issues, I propose a development of a GUI program to effectively quiz members of my team. The most optimal software to accomplish these goals would be Eclipse through its WindowBuilder addon, Apache Poi library, and PdfBox library. This is because the WindowBuilder addon allows me to effectively create a GUI and efficiently add code to add functionality to the program. The Apache Poi will allow me to more easily export data into .xlsx files. Furthermore, the PdfBox library allows me to easily covert pdfs into text. The solution will be created using buttons, combo boxes, tables, and file choosers to allow the user to conveniently import files and use the program. Additionally, the quiz part of the program will allow the user to test their knowledge and provide an explanation to the reason behind the correct answer. Ultimately, this program will streamline our academic decathlon team.

Word Count: 149

**Success Criteria:**

- The program should have the capability to retain scores and frequently missed questions
- The program should have the capability to import tests, and retain previously imported tests
- Error messages appear in the form of a popup when users try to import an invalid format
- The program should be able to export tests to an xlsx format
- The program should allow for general quizzing and focused quizzing
- General quizzing should give random questions in a subject, focused quizzing should give frequently missed questions