**Criterion A: Planning**

**Defining the Problem**

I often hear many of my friends and students in general complain about the tediousness of homework and classwork. In this current time during the COVID- 19 pandemic, the format of virtual classes provides many new factors and inconveniences for students and teachers alike. With time, this has become an issue that is even more prevalent and affects students’ motivation to learn or complete work. Their ability and effectiveness to learn new things as well as assess themselves on their current knowledge is lowered. In order to specifically identify and evaluate the problem, an interview was conducted with a high school student client at Richard Montgomery High School, Michael Sun.

During the interview, Michael explained that before online classes, his incentive to work along with other students was often lowered because of the repetitiveness of homework. Adding to that, he also wanted to be able to assess his level of knowledge in the subjects he was learning before taking tests or just in his free time in an interesting way. After virtual classes began, it was even more difficult to stay in contact with teachers when Michael had any questions, and since the work was all in an unfamiliar system it was harder to stay motivated. The current system that Michael uses to study and test himself is just looking at work assigned by teachers and reading articles online and books to learn.

In the following interview, Michael said that he would like to have a notecard app in the form of a game, where he can create his own questions and answers for a few main subjects, and then test himself by using those in a game. According to his request, I decided to create a Jeopardy style game that provides these students with a fun and interactive way to study and test their knowledge. There will be four predetermined subjects: Math, English, Science, and CS, and the student will be able to enter four “notecards” for each. Then, the user can navigate to a game window where the Jeopardy format is already set up with four subjects sections, and four questions under each section (user’s notecards). This allows the user to have control over the questions that they want to study and also have fun playing the game to review and practice the material. A local competition between friends is also possible with Jeopardy. This system is a good starting point to engage my clients in learning and reviewing in an interesting way that they would be motivated to use.

**Rationale for proposed Solution**

This program will be coded in Python, as it is a familiar language to me and I am studying it. It provides so much flexibility and clarity in creating the backend of the game with Object Oriented Programming, and the Tkinter package is a great tool for creating a GUI. Based on the progression, it will be very easy to design and format how the various functions are presented, or add and remove things during the process. This system will be accessible through a downloadable application that will be accessible to home computers, and the game can be played offline. This is feasible and there are little to no security, economic, or social implications. There is no important data or personal information to be leaked, and it does not ask for any sensitive information. This will use a small amount of resources and it does not seem to have any probability for security issues as it is fully local at the moment. This system will provide Michael Sun with an engaging and interactive experience to test his knowledge of his own choice.

Success Criteria

* The program should have two buttons/options on the main window: one for creating “notecards”/question-answer pairs, and another for students to play the Jeopardy style game
* The program will have four buttons on the creating notecards tab, each button will correspond with one of the four subjects and lead to a new tab that allows users to create 4 question-answer notecards for the corresponding subject.
* To edit notecards, the user can go to create notecard tab and re-enter the question-answer pair for the notecard intended to changed
* The Jeopardy game functions well and the user is able to access all of the questions they created
* Correct answers will give the user a “correct” message, wrong answers will give user a “wrong “ message.
* The program will be accessible locally both online and offline

Word Count: 607