Criterion A: Planning

1. Defining the Problem:

My client is Mrs. Rees - the Head of Sixth Form in our school. When smart boards were installed in our school, she faced a problem with operating exams. When an exam is taking place there is a table on the board that has information about current exams (starting time, extra time, etc.) and a timer clock. The issue included improper functionality of having two screens opened simultaneously, once other subjects were added or corrected, the timer would stop working. Sometimes the issue gets too frustrating and the staff has to write the exam outline on the whiteboard which brings confusion, visibility problems and overall inaccuracy to the important procedure that is an exam.
She asked for help from our school's IT department and my CS teacher mentioned that it was a fitting topic for an internal assessment. I took this opportunity to test my skills and decided to do this as my project. I had an interview with Mrs Rees[1]
After our discussion with Mrs. Rees, we discovered that she would like an app or a program that will work on different platforms and computers, be "user-friendly" so any teacher can easily use it, that can "combine the two together". She said it has to be visible to the students at the other end of the auditorium. We agreed there should be a reminder or an alarm that goes off 5 minutes before the exam finishes that lets students know without multiplicity of different timers and distractions.

2. Rationale for Proposed Solution:

I decided to use the python programming language because it has easy and simple syntax that allows room for more manipulation and experimentation as well as importing more various libraries(tkinter, datetime, sqlite). I also tried Java for my program but after trying to practice coding I felt like as a beginner I was more confident at python and would be able to add more functionality. Python is also object-oriented and allows more effective problem solving. It is an interactive language which was essential for my project. Python also has a good base of prewritten libraries and also allows to import more if needed which i thought would be beneficial for my project. Python is a very portable language and is supported by almost every modern computer operating system. It is also easily transferred between computer systems. The script of python is interpreted which makes it slower than Java or C++ but on the contrary it makes it much more user friendly and easier to debug. Besides python I also used a database of sqlite for storing the data. It is portable and has a high speed of operation. It is free and available on most platforms and has manageable access structure as the information is stored in one file.

3. Measures for Success:

- The program should have a starting page with a "start' button and a title
- The program should have a main page with empty table for information input (subject, start time, end time)
- The program should have a button for entering new exam that displays an entry window
- The entry window has to run checks for appropriate information entered and in case display an error message
- The program should have an option to finish each individual exam
- The program should have a button that ends all running exams
- The program should run an automatic alert system (visual sign and sound) 5 minutes before finish for each exam entered
- The program should display a real time clock
- The program should display a real time date

[1] see appendix

- On the main page there should be an entry for centre number
- The program should have an ending page with an “exam is finished” message
- The layout of buttons and entries has to be simple and easy to navigate
- The font of the labels and any other text has to be visible from a distance
- Hold a meeting with a client in the end to make sure the criterias and initial ideas were fulfilled

Word Count for Criterion A: [457 words]