CS Mock IA - Criterion A

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1 The scenario

We have had a meeting with our client, Ms Richardson is a computer science teacher at Saigon South International School. Our school has a system of houses where students are divided into various groups of people in order to compete against each other for "house points". There are numerous ways for a house to earn points e.g. teachers giving out points. In order for teachers to give out points, there must be a justified reason. However, Ms Richardson finds some teachers giving out points rather too generously and thus makes her suspicious of them being unfair. She wants a program in which she can enter points and get a report out of it. She also wants the ranking of each teacher who gives out the point i.e. who gives out the most points. She also wants to be able to reset the points after one year so that the program can be reused.

2 Solution

The proposed solution is an application where the house points are to be entered by Ms Richardson. The application has a GUI where she can enter the house points, get the report and reset the house points. The points that are entered are stored in a database and the report is pulled straight from it through some queries.

3 Rationale

To store the points, we decided to use a relational database rather than an online spreadsheet. Databases were chosen for the following reason:

- Data can be protected with referential integrity via relations between tables.

- Databases provide stable structures. Using a database will allow us to control user restrictions, thus ensuring data consistency.
- Databases can be programmed to display summary reports, as requested by the client.

The front-end application would be written in python. Python was chosen for the following reason:

- A high-level programming language with great readability, allowing for easier maintenance.
- Has an easy way to link with a database (see above).
- Highly popular language, meaning there are a lot of people who can help maintain the language when we, the creators, are unavailable

To display the application, we will use TkInter for the following reason:

- Provides a simple yet effective method to display, allowing more time to be focused on developing the database and the algorithms.
- Compatible with Python (see above).

4 Success criteria

- The main display of the program should have five buttons:
    1. add an entry (allow the client to add an entry, and saves entries into the database)
    2. display entries (ranked by most points given out in past 1-2 weeks)
    3. display total house points / total points in all entries
    4. the reset button should remove all entries
    5. exit (end all processes and closes the window)
- The program should allow the client to input house points entries, display current entries, and view total house points multiple times.
- New entries inputted by a user must be stored in the database, so when a user opens program all added entries are saved.

- When inputting the program should display a list of teacher's name, what house the point is given too, amount of points, and the date inputted.

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