Title

Covid-19 Vaccine Management V2

Background

You are required to develop a program to manage the vaccination process of FPT university students. The vaccination management program must allow administrators to manage student vaccination information. In addition, the program also provides a function for students to view information about the vaccine that they have been vaccinated. To simplify the application building, we give the following business roles:

1. Each student can only inject a **maximum of 2 injections of the vaccine.**
2. The second dose of vaccine must be **given 4 to 12 weeks after the first injection**
3. Two vaccines **must be of the same type**.

Injection information is stored in **the injection.dat file**

The **student.dat file** has stored student information **including studentID and name fields.**

The **vaccine.dat file** has stored vaccine information **including vaccineID and name fields.**

Upgrade version.2, support more functions: information encryption, search by student name, real-time update processing.

Program Specifications

Build a management program. With the following basic functions

0. Build your data structure
1. Show information all students have been injected
2. Add student's vaccine injection information
3. Updating information of students' vaccine injection
4. Delete student vaccine injection information
5. Search for injection information:
    5.1 Search by studentID
    5.2 Search by student name
6. Store data to file
7. **Real time update processing**
8. **Information Encryption**

Others- Quit

Each menu choice should invoke an appropriate function to perform the selected menu item. Your program must display the menu after each task and wait for the user to select another option until the user chooses to quit the program. Each injection information has the properties such that injection id, 1st injection place, 2nd injection place, 1st injection date, 2nd injection date, student ID and vaccine ID. **The lecturer provides an student.dat and vaccine.dat file that contains information about 10 records for each**.

Features:

This system contains the following functions:

Display a menu and ask doctor to select an option.

▪ **Function 5: Search injection**

Create a submenu that allows the doctor to select way to search: search by studentID or student name.

- **F.5.1: Search by student ID – 0 LOC**
- **F.5.1: Search by student name – 100 LOC**
    - Doctor input student name want to search.
    - The system will search in the list, and return all injection information that has student name contain the search string.
    - Show result list: all information of injection.
- **Function 7: Real-time update processing – 100 LOC**
    - Modify the above functions so that when each function is completed, the system must immediately update to the files.

- **Function 8: Information Encryption – 100 LOC**

    Injection information is confidential information, so the data needs to be encrypted before saving it to the file. You are required to encrypt injection information with the MD5 hashing method before saving it to the **injection.dat file.**

The above specifications are only basic information; you must perform a requirements analysis step and build the application according to real requirements.

The lecturer will explain the requirement only once on the first slot of the assignment.