| **LAB211 Assignment** | **Type:** | **Long Assignment** |
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| **Code:** | **J1.L.P0002** |
| **LOC:** | **180** |
| **Slot(s):** | **N/A** |

**Title**

User Management – Read and Write File.

**Background**

A construction company needs a user information management program. With basic requirements such as register an account, display user information, update information, .... User information is stored in a text file (user.txt).

**Program Specifications**

Build a user management program. With the following basic functions:

1. Create user account.
2. Check exits user.
3. Search user information by name.
4. Update user:
   1. Update user.
   2. Delete user.
5. Save account to file.
6. Print list user from file.

Others- Quit.

**Features:**

***This system contains the following functions:***

* **Function 1: Create user account - 20 LOC**
* Require to input a user information include username, first name, last name, password, confirm, phone and email.
* Check the valid data with the following conditions:
* Username must be at least five characters and no spaces.
* Username is not allowed to duplicate in the database.
* Password must be at least six characters and no spaces.
* Confirm password must equal password.
* Phone number must contain 10 numbers.
* Email must follow standard email format.
* Create new user.
* Ask to go back the main menu.
* **Function 2: Check exist user– 20 LOC**
  + The system will check the username that stored in the file user.txt.
  + A message “Exist User” should be displayed in the case the userName exists in the user.txt file.
  + Otherwise, message “No User Found!” will display.
* Ask to go back the main menu.
* **Function 3: Search user information by name – 20 LOC**
  + Require enter a search string (a part of first name or last name), return a list user information contain search string.
  + If the list user is null, the notification "Have no any user", else print the list user information order by first name.
* Ask to go back the main menu.
* **Function 4: Update user**
* **Function 4.1: Update user information- 20 LOC**
* Login is required.
* If it does not exist, the notification "Username does not exist". Otherwise, user can edit of the remaining information. If Information is blank, then not change old information
* Show the result of the update: success or fail.
* Ask to go back to the main menu.
* **Function 4.2: Delete user information – 20 LOC**
* Login is required.
* If it does not exist, the notification "Username does not exist". Otherwise, user can delete his account.
* Show the result of the delete: success or fail
* Ask to go back the main menu.
* **Function 5: Save to file - 20 LOC**
  + Write list user’s information to the file (user.txt).
  + Ask to go back the main menu.
* **Function 6: Print all list from file – 20 LOC**
  + Loading list user information from the file into Collection
  + Displaying list user information order by first name.
  + Ask to go back the main menu.
* **Function 7: Create layout – 20 LOC**
  + The program is organized in the form of a function menu.
  + Support function asking if the user wants to continue or not.
* **Function 8: Password encryption – 20 LOC(Ext)**
  + Encrypt password(SHA256) before saving to database.
* 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.