FINAL PROJECT ISEC640 – DATABASE SECURITY

PROPOSAL 1

Winter 2021

**Project Due: April 22nd 2021**

# PROPOSAL 1

Based on your Assignment 4, create a change password GUI based on the same requirements last time but with a **Database component**.

**The program can be written in JAVA or Python or C# or using (JavaScript and HTML/CSS/PHP/AJAX).**

* Database should have minimum two tables – fn\_user table and a fn\_password\_history table. For each user in the user table there should be Five old passwords. The keys and relevant columns needed to be added to these tables (where fn is your first name).
* Create a Change Password GUI for checking the validity of a password.
  + There should be an entry box for user id. User Id should be your email. Check to make sure that this is a valid Email.
  + The user ID you entered should already exist in the database in user table and if not it should say User Id does not exist.
  + There should be an Old Password entry box where you enter the current password and this should match the current password in the user table.
  + When you enter the old password, password should not be visible (…..).
  + There should be a New password entry box where you enter the new password.
  + When you enter the new password, password should not be visible (…..).
  + There should be a Confirm New Password entry box where you should re-enter the password. Here also the password should not be visible.
  + There should be a BUTTON called “Change Password”.
  + GUI is not shown. You can have variations of the GUI in assignment 4 as long as all functionalities are met.
* The new password string entered in the new password box should be the same as the password string entered in the confirm new password box
* The password should not be one of the last five passwords from the password\_history table for this user id including the current (or old) password.
* The password should be at least 10 characters strong.
* The password should contain at least one upper case letter.
* The password should contain at least ***TWO*** lower case letters
* The password should have at least one special character
* The password should have at least one digit.
* The GUI should ask for a new password and then verifies that it meets the stated criteria. If it does it should return message “Password Changed” in the result box. If not it should return a message as to what is wrong with the password and why it is not accepted. Only one reason needs to be displayed based on the order of errors given above.
* If password is accepted the
  + new password should be updated in the user table as the current password
  + new password should be updated in the password history table and replaces the fifth oldest password in the password history table with today’s date.
* All passwords in the database should be encrypted. You can use an existing algorithm to do this. You don’t have to write your own algorithm for this.
* Now describe a SQL injection case that can happen in your code. Attach a document showing what the threat is and specify how you have handled in the code. In the document identify the file(s) where you have put the code to prevent SQL injection.

Expected Deliverables:

Please make sure that I do not have to download anything to run your project. I already can run C# against MySQL, Python with MySQL and HTTP/JS/PHP/AJAX with MySQL

1. All programs. Submit the full project folder.
2. SQL.txt which gives me details of all tables and the population of the tables with data.
3. Readme.txt which tells me as to how to run your Program.