**CS157A: Spring 2022**

**Project #2: Stored Procedures & SQL/PL (120 Points)**

**Due Date: May 12, 2022**

Description:

You are responsible to write several stored procedures related to the banking application logic in project 1. This project must be implemented using DB2 & SQL/PL.

Project Specification:

Section A: Schema Definitions

The p2\_create.clp file for project 3 contains the 2 create table that must be used.

Section B: User Defined Functions – Two UDFs are created in create.clp for you.

P2.encrypt (pin integer): Must be used in the CUST\_CRT (…) as we only store encrypted PW.

P2.decrypt (pin integer): Must be used in CUST\_LOGIN (…) to decrypt/verify the encrypted PW.

Section C: SQL/PL Stored Procedures:

1. CUST\_CRT (Name, Gender, Age, Pin, ***ID, sqlcode, err\_msg***)

2. CUST\_LOGIN (ID, Pin, ***Valid,*** ***sqlcode, err\_msg***) (Valid = 1 if match, 0 for failure)

3. ACCT\_OPN (ID, Balance, Type, ***Number, sqlcode, err\_msg***)

4. ACCT\_CLS (Number, ***sqlcode, err\_msg***)

5. ACCT\_DEP (Number, Amt, ***sqlcode, err\_msg)***

6. ACCT\_WTH (Number, Amt, ***sqlcode, err\_msg)***

7. ACCT\_TRX (Src\_Acct, Dest\_Acct, Amt, ***sqlcode, err\_msg)***

8. ADD\_INTEREST (Savings\_Rate, Checking\_Rate, ***sqlcode, err\_msg)***

Section D: User Interfaces - Required

1. You can use the same command line interface described in P1. You need to call the STP instead of using JDBC queries from BankingSystem. You will submit p2.java instead of p1.java.
2. You can replace the command line UI with a GUI but needs to call the new STP directly instead (10 Extra credit points).

Section E: Additional Notes:

1. Stored procedures 1-7 logic will be similar to what you’ve already implemented in P1.
2. Implement ACCT\_TRX() by calling ACCT\_WTH() and then ACCT\_DEP()l.
3. ADD\_INTEREST() is a new procedure for all “active” accounts.
4. The **bold** text above means output parameter.
5. Must be able to handle error conditions gracefully with an user defined sqlcode and your own text message (similar to sample output).
6. Must handle error condition gracefully.
7. There are separate Savings and Checking rates (type float – e.g. if 5% interest, then it should be 0.05).
8. Create a file named p2.sql for all your stored procedure definitions.