

Concordia University
Dept. of Computer Science & Software Engineering
COMP 353 – Databases
Fall 2018
Warm-up Project

Project Description:

Title: A Simple database for a Financial Institution.

Due: September 30, 2018

Mark: 2%

In this course, you will do the warm-up project as well as the main project on the same real-world database application.

The application is to develop a database system for a Bank. The Bank has several branches located in different areas within a city as well as in different cities across Canada. It has a head office in downtown of Montreal. It provides banking, investment, and insurance services for different levels of needs, i.e. personal, business, corporate. All the banking services can be accessible through online and telephone as well. Anyone can be its potential client as soon as he/she opens any kind of account through any outlet. Each client may have different facilities based on different plans/options they choose and he/she will be charged accordingly. There is no accumulated interest rate for checking accounts, but it has only 2.0% interest rate for savings accounts.

Each client may have different credit cards, line of credit of different credit limits and rates based on certain rules and policies. For example, no one will get a credit card unless he/she maintains a satisfactorily level of banking transactions for at least six months, and no one will get a line of credit before one year. Mostly, the initial credit limit for a personal level would be CND 500, but it could vary from client to client. You are welcome to come up with other banking rules and policies.

Your database will be responsible for at least supporting

- The branch (branch_id, location, phone, fax, opening_date, manager_name, etc.)
- The employee (employee_id, title, name, address, start_date, salary, email address, Phone Number, etc.)
- The client (client_id, name, date of birth, joining_date, address, email address, Phone Number, category, etc.)
- The account (account_number, type, option, balance, etc.)
- The services (banking, investment, insurance)
- The interest rate (kind of service, type of account, percentage, etc.)
- The charge plans (option, limit, charge, etc.)

Other tables might be needed to capture all the requirements.

Each branch must have one manager to manage the branch. The bank has one president and one general manager for each service provided by the bank. President of the bank and general managers are located in the head office of the bank. The client can view all of his/her account balances after a successful login and also carry out all his/her banking transactions via online.

Implementation Requirement:

Complete the database design and implement the database, collect appropriate data and store them into the database. The system should support the following queries. Make sure each table in the database has sufficient number of records such that each query results a meaningful and reasonable size of output.

Now answer the following queries of your implemented database:

1. Show all of your tables.
2. List of all branches grouped by city and ordered by oldest branch.
3. List of all clients with DOB between 1990 and 2017.
4. List all clients of a branch who has either a checking or savings account of balance more than CND 10,000.00.
5. List of all clients of a branch who has a line of credit of limit CND 25,000.00 with an interest rate of 7.5% or below.
6. List details of a client named Roberto.
7. List of all clients of 'Cote Des Neiges' branch.
8. List of clients who have at least 1,000,000 CDN dollar in their savings account.
9. List of all the services along with the general manager for each service.
10. Complete details of the president of the bank.

What you should hand in:

You should hand in a report that includes the E/R data model of your database design along with reasonable assumption(s) (if you have any!), script to create and populate the tables (SQL), this must include a list of all relational schemas/tables and attribute(s) within each table with appropriate data types, identify the key attribute(s) for each table, and show the relationship among the tables. You should also hand in a printout of the tuples/records in each table, the script for the SQL queries and the outputs of the queries.

Note: Every document related to your project work must be printed and properly bounded with a cover page indicating your group ID, each member's official names (your "official" name means - no abbreviations or nick names; capitalize the "last" name), Concordia Student ID. Inappropriate submissions will be heavily penalized.