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# Lab 8

## Java Database Connectivity

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CSE 4308  
DATABASE MANAGEMENT SYSTEMS LAB

OCTOBER 24, 2022

# 1 Scenario

Consider the (partial) schema of a Banking Management System shown in Figure 1:

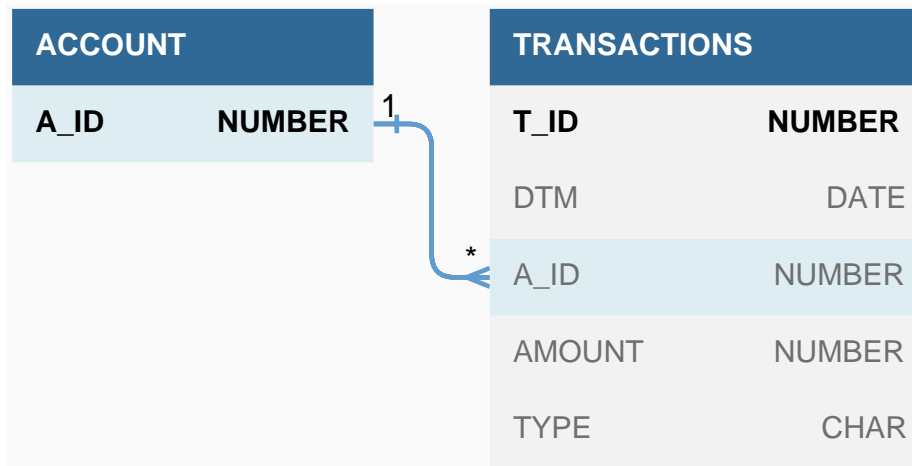


Figure 1: Schema for Lab Task

For simplicity, the ACCOUNT table contains only the account ID. The TRANSACTIONS table contains the information related to each transactions that occurs in the bank. The table stores transaction ID, date of the transaction, account involved in the transaction, the amount transacted, and the type of the transaction. The TYPE column is set to 0 if the money is credited to the account, i.e., the money is added to the account, and 1 if the money is debited from the account, i.e., the money is subtracted from the account. There are 3 types of accounts in the bank:

1. **Commercially Important Person (CIP):** If the person has a balance of more than 1,000,000 and all the transactions that they have made totals more than 5,000,000.
2. **Very Important Person (VIP):** If the person has a balance of more than 500,000 but less than 900,000 and all the transactions that they have made totals more than 2,500,000 but less than 4,500,000.
3. **Ordinary Person (OP):** If the user has a balance less than 100,000 and all the transactions they have made totals less than 1,000,000.

# 2 Environment Setup

All the files mentioned below has been provided in Google Classroom and FTP

1. Download and execute `TableGenerator.cpp`. It will ask you to enter your student ID and create a file named `table.sql`. The SQL file contains the required SQL queries to create and populate the database. The values will be random except for the account numbers that start from 1 up to a random number.
2. Make sure that Oracle Database is installed on your PC. Login to your database (either using Command Prompt or SQL Command Line). Enter "`<directory>\table.sql`". Here, `<directory>` should be replaced by the file path of `table.sql`.
3. Install Java Development Kit (JDK) using `jdk-19_windows-x64_bin.msi`.
4. Create a new Java Project and add `ojdbc14.jar` file as an external JAR file. For Eclipse IDE, the process of adding external JAR file to a project: from the Menu Bar, go to `Project → Properties →`. Then on the opened window, click on `Java Build Path → Classpath`

→ Add External JARs. This will open a File Explorer where you can navigate to the path where `ojdbc14.jar` is located to select and add it to your project. If you are using any other IDE, Google “how to add external JAR files to XYZ IDE” to get help. Replace XYZ with the IDE that you are using.

5. Open `solution.java` file and go through the code to get an idea about what is going on.

### 3 Lab Task

Write a JAVA code to:

1. Count the total number of transactions conducted under account 45.
2. Count the number of debits.
3. List the transactions that occurred in the year 2020.
4. Count the number of CIP, VIP, and OPs. Also show the number of people that do not fall in any of the categories.