CSCI 5408

DATA MANAGEMENT AND  
WAREHOUSING

LAB ASSIGNMENT - 3

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Git Assignment Link : https://git.cs.dal.ca/sukumaran/csci5408\_f23\_b00948977\_balaji\_sukumaran

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**Problem Statement 1: Design a banking application database with the customer’s details (minimal attributes - name, mailing address, permanent address, primary email, primary phone number), account details (minimal attributes – account number, account balance) and account transfer details (minimal attributes - account number, date of transfer, recipient name, status(varchar value waiting/accepted/declined)).**

Created the banking database tables. To simulate transaction environment

Line #1: create table command for customer\_details

Line #2: create table command for account\_details

Line #3: create table command for transfer\_details

Tables created successfully.

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Figure : create statement for customer\_details, account\_details, transfer\_details

Inserted sample data for simulating transactions

Line #3 till #11: Insert statements for customer\_details

Line #13 till #20: Insert statements for account\_details

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Figure : Insert Statement for customer\_details and account\_details

Records in customer\_details table

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Figure : Contents of customer\_details table

Records in account\_details table

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Figure : Contents of account\_details table

**Problem Statement 2: Create a transaction environment where on every account debit, the record in the account details table is updated but not committed. Upon this update, insert a record in the account transfer details table with waiting state.**

Line #4: Setting Autocommit to OFF, to keep the transaction in a limbo state when this query page is executed

Line #6: Start of transaction

Line #8: Debited $200 from John’s account

Line #12: Transferred that $200 to Doe’s account

Line #16: INSERTED into transfer\_details table with a WAITING state indicating this state is not committed

Line #19,20,21: to see the current state of the customer\_details, account\_details and transfer\_details table.

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**Problem Statement 3: Assume that the transaction status gets verified by some X business logic (pure assumption here, no need to implement any logic), the transaction status is changed to either accepted or declined. Based on this status, handle the update balance query.**

**(Hint: Based on the transaction status, either commit or rollback the account details table SQL statements. Try exploring SAVEPOINT).**

Scenario #1: If the backend logic changed it to ACCEPTED then the transaction should COMMIT and if it is REJECTED it should rollback everything that is done in this transaction

Line #23: checks for the state of the transfer\_details record. If it is ACCEPTED then commit, If REJECTED then ROLLBACK

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Scenario #2: If the backend logic changed it to ACCEPTED then the transaction should COMMIT and if it is REJECTED it should rollback up till a SAVEPOINT.

Here in case of in case of ACCEPTED it will commit if not It will rollback to JOHN\_ACC\_UPDATE savepoint. Which means everything from Line #12 rolled back.

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