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Data Management, Warehousing and Analytics

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Lab Assignment 3

Gitlab Repository link:

https://git.cs.dal.ca/singh16/csci5408_s23_b00948857_jaskaran_singh.git

Lab Assignment 3

1.

- For first question, a database named '**Bank**' has been created with tables Customer, Account_details and Account_transfer_details.
- **Customer** table has id as primary key .
- **Account_details** table has account_number as primary key and customer id as foreign key referencing customer table.
- **Account_transfer_details** table has id as primary key for each transaction and account_number as foreign key referencing account_details table.

SQL Queries for the above database is present in CSCI5408_S23_LAB3_B00948857_scripts.sql file

2.

- As mentioned in question, autocommit has been turned off with **SET autocommit = 0;**
- After this, a record has been inserted for a customer in **Customer** and **Account_details** tables.

| | 8 | 12:11:34 | INSERT INTO Customer values (200, 'jas', '309, Halifax', 'B34GEG', 'jas@gfgg.com', 763442... | 1 row(s) affected | 0.016 sec |
| | 9 | 12:11:34 | INSERT INTO Account_details values (1234567890, 666.78, 200) | 1 row(s) affected | 0.000 sec |

Figure: Records inserted in Customer and Account_details tables.

- Now, two records have been inserted in the **Account_transfer_details** table for two transactions with status as 'pending'.

| | 52 | 14:11:13 | INSERT INTO Account_transfer_details values (12, 1234567890, current_timestamp(), 'mich... | 1 row(s) affected | 0.015 sec |
| | 53 | 14:11:13 | INSERT INTO Account_transfer_details values (13, 1234567890, current_timestamp(), 'mich... | 1 row(s) affected | 0.016 sec |

Figure: Records inserted in Account_transfer_details table with **'pending'** state.

3.

- Now, a stored procedure has been created with name '**transaction_status_handling'** with parameters **transfer_id** for transaction id in account_transfer_details, **new_status** for status in account_transfer_details, **account_number_provided** for account number in account_details and **transaction_amount** for transaction amount in account_transfer_details.

Figure: Stored procedure '**transaction_status_handling'** created

- A savepoint named '**previous_account_balance**' has been created to rollback if transaction gets 'rejected'.
- After inserting breakpoint, **Account_details** table has been deducted transaction_amount with the update statement.
- If the new status is "accepted," Account_transfer_details's status is updated as "accepted" and the transaction is committed.
- If the new status is "declined," Account_transfer_details's status is updated as "declined" and the transaction is rolled back to the savepoint **previous_account_balance**, undoing the previous update on the Account _details table's account_balance.
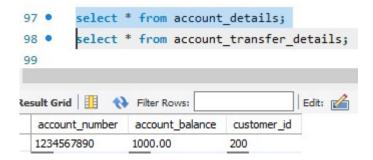- Now, the stored procedure can be called according to the trasaction status.

```
97 •    select * from account_details;
98 •    select * from account_transfer_details;
99
```

account_number	account_balance	customer_id
1234567890	1000.00	200

Figure: Initial balance before the trasaction in account_details table.

```
96
97 •    select * from account_details;
98 •    select * from account_transfer_details;
```

id	account_number	date_of_transfer	recipient_name	status
12	1234567890	2023-06-24 15:05:16	michael	waiting
13	1234567890	2023-06-24 15:05:16	john	waiting

Figure: Transactions in account_transfer_details table with '**waiting**' status.

Case 1: If transaction is declined

```
   )
7 ●    select * from account_details;
8 ●    select * from account_transfer_details;
   )
```

account_number	account_balance	customer_id
1234567890	1000.00	200
NULL	NULL	NULL

Figure: Balance after the trasaction is '**declined'** in account_details table.

```
97 ●    select * from account_details;
98 ●    select * from account_transfer_details;
```

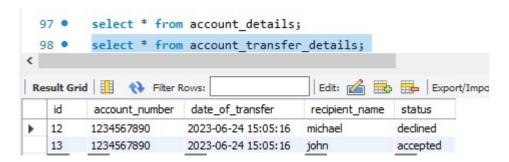| id	account_number	date_of_transfer	recipient_name	status
12	1234567890	2023-06-24 15:05:16	michael	declined
13	1234567890	2023-06-24 15:05:16	john	accepted

Figure: Transaction in account_transfer_details table with '**declined'** status.

Case 2: If transaction is accepted

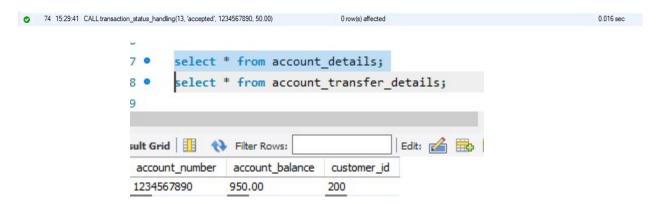74 15:29:41 CALL transaction_status_handling(13, 'accepted', 1234567890, 50.00)   0 row(s) affected   0.016 sec

```
7 •   select * from account_details;
8 •   select * from account_transfer_details;
9
```

account_number	account_balance	customer_id
1234567890	950.00	200

Figure: Balance after the transaction is '**accepted'** in account_details table.

```
97 •   select * from account_details;
98 •   select * from account_transfer_details;
```

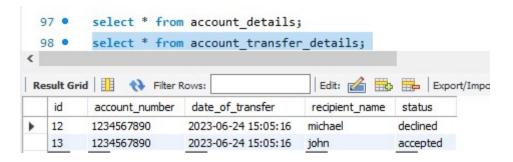| id	account_number	date_of_transfer	recipient_name	status
12	1234567890	2023-06-24 15:05:16	michael	declined
13	1234567890	2023-06-24 15:05:16	john	accepted

Figure: Transaction in account_transfer_details table with '**accepted**' status.