

Transactions

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- Instructions to see “Conflicting Transactions” :

- 1) Open Terminal 1 (cmd 1)
- 2) Open Terminal 2 (cmd 2)
- 3) Write “mysql -u anish -p” in (T - 1) // change to your username
- 4) Write “mysql -u anish -p” in (T - 1) // change to your username
- 5) Password : “ Anish123@ “
- 6) Write “use dbms”

- Conflicting Transaction 1 :

1. First see “user” table and check “amount” of user with “cust_id = 4” ;
2. Then in (T - 1) :
 - a. Write “
START TRANSACTION;
UPDATE user SET amount = amount - 100 WHERE
cust_id = 4; “
 - b. Write “ SELECT amount FROM user WHERE cust_id = 4; “.
 - c. See the “ amount “ of user with “ cust_id = 4 “
3. Then in (T - 2) :
 - a. Write “ SELECT amount FROM user WHERE cust_id = 4 ; “..

** We Will notice that in both T1 and T2, we are seeing different amounts of user with cust_id = 1, we call this conflict as “ WR CONFLICT “.

- Conflicting Transaction 2 :

1. First see “user” table and check “amount” of user with “cust_id = 3” ;
2. Then in (T - 1) :
 - a. Write “
START TRANSACTION;
UPDATE user SET amount = amount - 100 WHERE
cust_id = 3 ; “
 - b. Write “ SELECT amount FROM user WHERE cust_id = 3; “.
 - c. See the “ amount “ of user with “ cust_id = 3 “

3. Then in (T - 2) :
 - a. Write “
START TRANSACTION;
UPDATE user SET amount = amount + 50 WHERE
cust_id = 3; “.
 - b. Wait for a while.....
 - c. Write “ SELECT amount FROM user WHERE cust_id = 3; “.

** We will notice different “amount” in both terminals due to conflict issue, and this conflict is also known as “ **WW CONFLICT** “.

- Non - Conflicting Transaction 1 :

1. First see “user” table and check “amount” of user with “cust_id = 3” ;
2. Then in (T - 1) :
 - a. Write “
START TRANSACTION;
UPDATE user SET amount = amount - 100 WHERE cust_id =
3;
COMMIT ; “
 - b. Write “ SELECT amount FROM user WHERE cust_id = 3; “.

- c. See the “ amount “ of user with “ cust_id = 3 “

Then in (T - 2) :

- a. Write

“

```
START TRANSACTION;  
UPDATE user SET amount = amount + 50 WHERE cust_id = 3;  
COMMIT ;
```

“

- b. Write “ SELECT amount FROM user WHERE cust_id = 3; “.

- c. See the “ amount “ of user with “ cust_id = 3 “

** Notice, that in both the terminal's the amount is same, as we've committed, and we can say, that both the transactions are non-conflicting.

- Non - Conflicting Transaction 2 :

1. Run Query on either terminal : “

```
DELETE FROM admin_mobile WHERE mobile = '1234567890'; “.
```

2. Then in (T - 1) :

- a. Write “

```
START TRANSACTION;  
INSERT INTO admin_mobile (admin_id, mobile) VALUES (1,  
'1234567890');  
COMMIT;
```

“

- b. Write “ SELECT * FROM admin_mobile where admin_id = 1 ; “.

3. Then in (T - 2) :

a. Write

“

```
START TRANSACTION;  
SELECT * FROM admin_mobile WHERE mobile =  
'1234567890';  
COMMIT;
```

“

.

b. Write “ `SELECT * FROM admin_mobile ;` “.

4. Notice, that in both terminals, we see ‘1234567890’ as added in admin with id = 1. And hence, we can say, that its a NON - CONFLICTING transaction.

- Non - Conflicting Transaction 3 :

1. Run :

a. Then in (T - 1) :

b. Write “

```
START TRANSACTION;  
SELECT amount FROM user WHERE cust_id = 3 ;  
COMMIT ; “
```

c. See the “ `amount` “ of user with “ `cust_id = 3` “

2. Then in (T - 2) :

a. Write

“

```
START TRANSACTION;  
SELECT amount FROM user WHERE cust_id = 3;  
COMMIT ;
```

“
.”

b. See the “ amount “ of user with “ cust_id = 3 “

** Notice, that in both the terminal's the amount is same, as we've committed, and we can say, that both the transactions are non-conflicting.

- Non - Conflicting Transaction 4 :

1. See the status of user with id = 1 :

```
SELECT account_status FROM user WHERE cust_id = 1;
```

2. Run Query: “

```
UPDATE user SET account_status = 'working' WHERE cust_id = 1;  
“
```

3. Then in (T-1) :

a. Run Query :

“

```
START TRANSACTION;
```

```
UPDATE user SET account_status = 'blocked' WHERE cust_id  
= 1 ;
```

```
COMMIT ;
```

“

b. SEE account status of user with cust_id = 1;

c. Run :

“

```
SELECT account_status FROM user WHERE cust_id = 1;
```

“

4. Then in (T-2) :

d. Run Query :

“

```
START TRANSACTION ;  
SELECT account_status FROM user WHERE cust_id = 1 ;  
COMMIT ;
```

“

** Notice that, In both terminals, we see the same status. And hence, we can call it as a NON-CONFLICTING transaction.

~ Thank You