Lab 4 - DML – Insert, Update, Delete, Transactions - Commit, Rollback, Save point

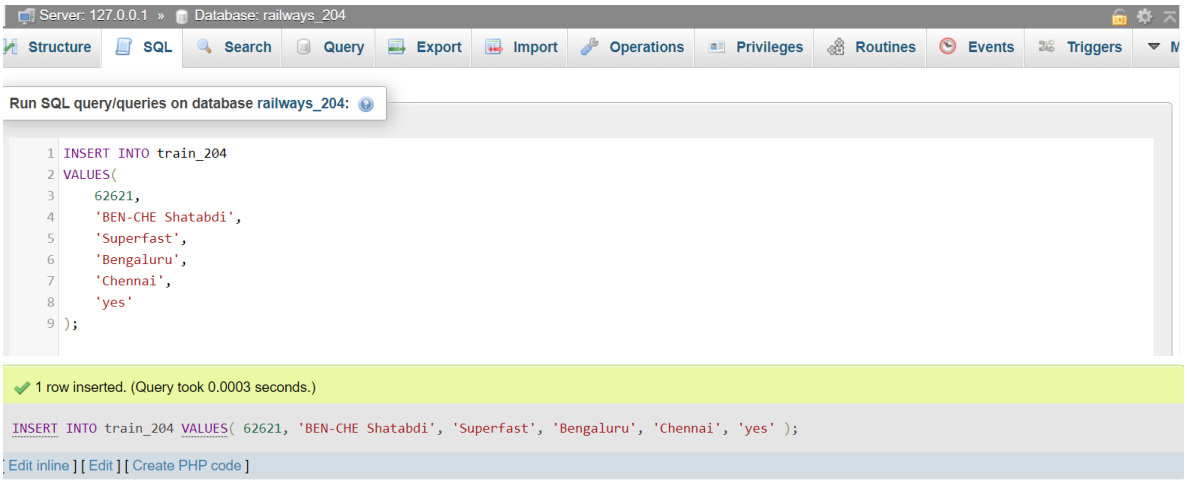
Keerthana Shivakumar

PES1UG20CS204

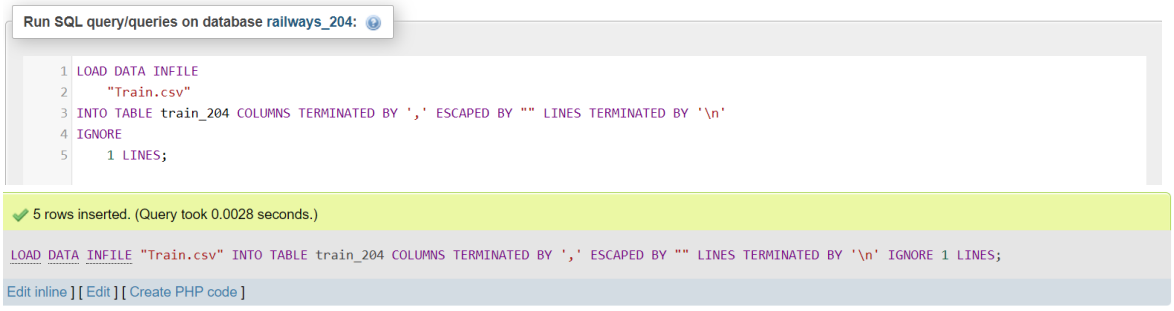
Assignment: Railway Reservation System

Task-I: Use INSERT/SELECT/UPDATE queries for the following tasks:

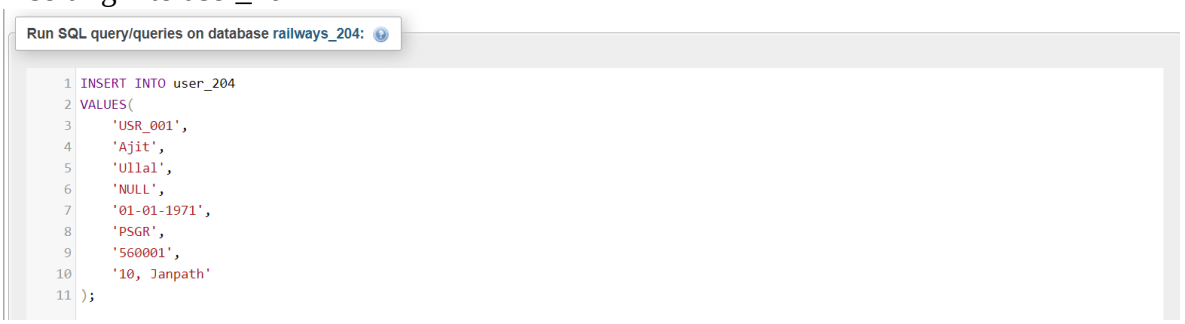
1. Insert the shared data into the respective tables using appropriate insert query.
   - Show the usage of INSERT and LOAD DATA INFILE commands explicitly
   - Inserting into train_204



   - Loading into train_204



   - Inserting into user_204



MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
CREATE TABLE user_phone_204( user_id VARCHAR(255), phone_no VARCHAR(255), PRIMARY KEY(user_id, phone_no), FOREIGN KEY (user_id) REFERENCES user_204(User_ID) );
```

[Edit inline] [Edit] [Create PHP code]

- Loading into user_204

1 row inserted. (Query took 0.0003 seconds.)

```
INSERT INTO user_204 VALUES( 'USR_001', 'Ajit', 'Ullal', NULL, '01-01-1971', NULL, 'PSGR', '560001', '10, Janpath' );
```

[Edit inline] [Edit] [Create PHP code]

32 rows inserted. (Query took 0.0026 seconds.)

```
LOAD DATA INFILE "Train_User.csv" INTO TABLE user_204 COLUMNS TERMINATED BY ',' OPTIONALLY ENCLOSED BY "" ESCAPED BY "" LINES TERMINATED BY '\n' IGNORE 1 LINES;
```

- Insert into fare table

1 row inserted. (Query took 0.0004 seconds.)

```
INSERT INTO fare_204 VALUES('I Class', 'Superfast', 3.3);
```

- Loading into fare table

8 rows inserted. (Query took 0.0025 seconds.)

```
LOAD DATA INFILE "FareTable.csv" INTO TABLE fare_204 COLUMNS TERMINATED BY ',' OPTIONALLY ENCLOSED BY "" ESCAPED BY "" LINES TERMINATED BY '\n' IGNORE 1 LINES;
```

- Loading into compartment table

20 rows inserted. (Query took 0.0075 seconds.)

```
LOAD DATA INFILE "Compartment.csv" INTO TABLE compartment_204 COLUMNS TERMINATED BY ',' OPTIONALLY ENCLOSED BY "" ESCAPED BY "" LINES TERMINATED BY '\n' IGNORE 1 LINES;
```

[Edit inline] [Edit] [Create PHP code]

- Loaded data into route_info table

44 rows inserted. (Query took 0.0063 seconds.)

```
/*Loading into route_info*/ LOAD DATA INFILE "RouteInfo.csv" INTO TABLE route_info_204 COLUMNS TERMINATED BY ',' OPTIONALLY ENCLOSED BY "" ESCAPED BY "" LINES TERMINATED BY '\n' IGNORE 1 LINES;
```

[Edit inline] [Edit] [Create PHP code]

- Loading into user-phone table

66 rows inserted. (Query took 0.0026 seconds.)

```
/*load data into user-phone*/ LOAD DATA INFILE "User-Phone.csv" INTO TABLE user_phone_204 COLUMNS TERMINATED BY ',' OPTIONALLY ENCLOSED BY "" ESCAPED BY "" LINES TERMINATED BY '\n' IGNORE 1 LINES;
```

[Edit inline] [Edit] [Create PHP code]

- Loading into table ticket as insertion manually

1 row inserted. (Query took 0.0059 seconds.)

```
INSERT INTO ticket_204 VALUES( 'PNR004', 25260, '15-08-2022', 'Mangaluru', 'Chennai', 'ADM_003', '19:15:00', '08:00:00', 'Mail', 'II Class', 'S02' );
```

[Edit inline] [Edit] [Create PHP code]

- Inserting into ticket table

1 row inserted. (Query took 0.0051 seconds.)

```
INSERT INTO ticket_204 VALUES( 'PNR014', 25260, '17 -08 -2022', 'Kannur', 'Palakkad', 'USR_010', '23:15:00', '04:30:00', 'Mail', 'II Class', 'S01' );
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0020 seconds.)

```
INSERT INTO ticket_204 VALUES( 'PNR015', 25260, '05-08-2022', 'Palakkad', 'Chennai', 'USR_012', '04:30:00', '08:00:00', 'Mail', 'II Class', 'S01' );
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0092 seconds.)

```
INSERT INTO ticket_204 VALUES( 'PNR003', 25261, '01-08-2022', 'Chennai', 'Mangaluru', 'ADM_003', '18:00:00', '07:30:00', 'Mail', 'III Class', 'G02'
);
```

[Edit inline] [Edit] [Create PHP code]

- Inserted into payment table

13 rows inserted. (Query took 0.0069 seconds.)

```
INSERT INTO payment_info_204 VALUES( '342344', NULL, '5620000000000000', 'IOB', 'PNR001' ),( '676756', NULL, '7370000000000000', 'CANARA BANK',
'PNR002' ),( '978776', NULL, '1I54978597435874', 'UNION BANK', 'PNR003' ),( '531343', NULL, '8950000000000000', 'SBI', 'PNR004' ),( '978098',
NULL, '9890000000000000', 'INDIAN BANK', 'PNR005' ),( '146445', NULL, '1230000000000000', 'HDFC', 'PNR006' ),( '576768', NULL,
'7560000000000000', 'ICICI', 'PNR007' ),( '746745', NULL, '2550000000000000', 'KOTAK', 'PNR008' ),( '867546', NULL, '4660000000000000', 'UNION
BANK', 'PNR010' ),( '867547', NULL, '7470000000000000', 'SBI', 'PNR011' ),( '243535', NULL, '2440000000000000', 'UNION BANK', 'PNR012' ),(
'354364', [...]
```

[Edit]

- Inserted into ticket passenger

21 rows inserted. (Query took 0.0124 seconds.)

```
/*insert into ticket_passenger*/ INSERT INTO ticket_passenger_204 VALUES( 'F01 -3', 'Saideepak Reddy', ' 27', 'PNR001' ),( 'F01 -4', 'Sheela
Reddy', '25', 'PNR001' ),( 'F02 -11', 'SaiDeepak Reddy', '27', 'PNR002' ),( 'F02 -12', 'Sheela Reddy', '25', 'PNR002' ),( 'G01 -50', 'Anwar
Hussein', '32', 'PNR003' ),( 'G01 -51', 'Karishma Husein', '12', 'PNR003' ),( 'G02 -31', 'Anwar Hussein', '32', 'PNR004' ),( 'G02 -32', 'Karishma
Husein', '12', 'PNR004' ),('S01 -9', 'Ajit Ullal', '31', 'PNR005'),( 'S01 -10', 'Hema Ullal', '27', 'PNR005' ),( 'S01 -11', 'Hima Ullal', '28',
'PNR005' ),( 'S01 -12', 'Asha Ullal', '21', 'PNR005' ),( 'S01 -35', 'Smriti Irani', '40', 'PNR006' ),( 'S01 -14', 'Christon D Souza', '27',
'PNR007' ),( [...]
```

[Edit]

2. Calculate and update age attribute in User Table.

Before update

	User_ID	Firstname	Lastname	age	DOB	user_type	pincode	street_no
Edit Copy Delete	ADM_001	Narendra	Modi	0	1989-04-14	ADMIN	600047	Old Jail Road
Edit Copy Delete	ADM_002	Droupadi	Murmu	0	1990-04-14	ADMIN	640012	High Street
Edit Copy Delete	ADM_003	Manmohan	Singh	0	1991-04-08	ADMIN	575003	Pumpwell Road
Edit Copy Delete	USR_001	Ajit	Ullal	0	1971-01-01	PSGR	560001	10,Janpath
Edit Copy Delete	USR_002	Muhammed	Ali	0	2000-10-09	PSGR	560003	"10 Downing"
Edit Copy Delete	USR_003	Sai Deepak	Reddy	0	1996-12-12	PSGR	600001	"14 Kailsh Marg"
Edit Copy Delete	USR_004	Rudra	Agarwal	0	1996-12-13	PSGR	600042	"5 Lohia Garden"
Edit Copy Delete	USR_005	Rahul	Khanna	0	1997-12-14	PSGR	600067	"1 Pink Street"
Edit Copy Delete	USR_006	Nirmala	Seturaman	0	1998-12-15	PSGR	560105	"3 Blue Avenue"
Edit Copy Delete	USR_007	Smriti	Irani	0	1999-12-16	PSGR	575014	"4 Banyan Avenie"
Edit Copy Delete	USR_008	Ajit	Sethi	0	1966-04-14	PSGR	575001	"6 Poes Garden"
Edit Copy Delete	USR_009	Arjun	Allu	0	1967-04-08	PSGR	575020	"7 Dhamaka street"
Edit Copy Delete	USR_010	Samanta	Prabhu	0	1968-04-14	PSGR	600042	"8 Clone Colony"
Edit Copy Delete	USR_011	Kiran	Bedi	0	1969-04-14	PSGR	560003	"56 Brigade Road"
Edit Copy Delete	USR_012	Rahul	Gandhi	0	1970-04-08	PSGR	475001	Mirza road

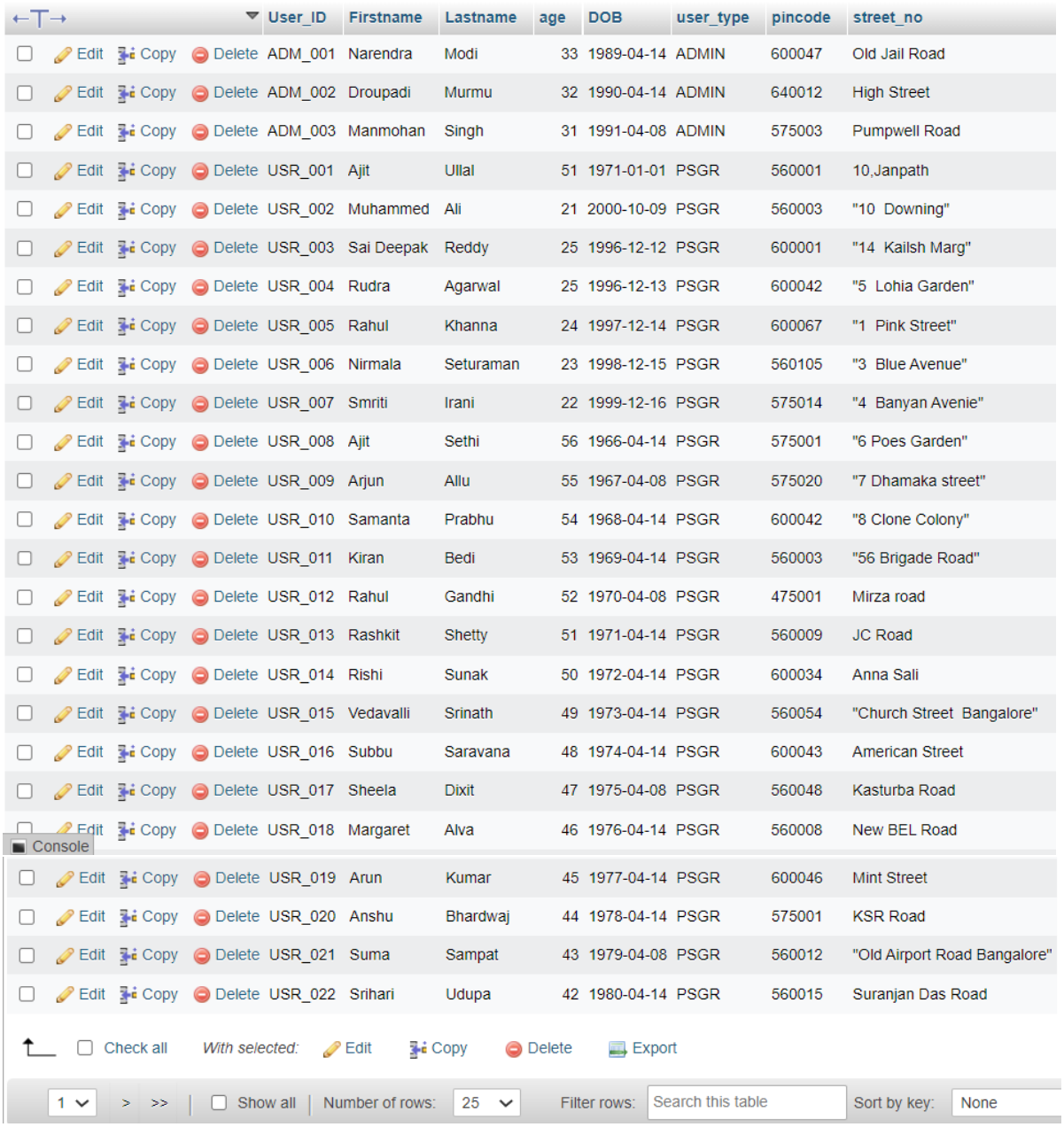
Console

Query

33 rows affected. (Query took 0.0030 seconds.)

```
/*2. Calculate and update age attribute in User Table.*/ UPDATE user_204 SET age = DATE_FORMAT( FROM_DAYS(DATEDIFF(NOW(), DOB)), '%Y') + 0;
```

Output



	User_ID	Firstname	Lastname	age	DOB	user_type	pincode	street_no
Edit Copy Delete	ADM_001	Narendra	Modi	33	1989-04-14	ADMIN	600047	Old Jail Road
Edit Copy Delete	ADM_002	Droupadi	Murmu	32	1990-04-14	ADMIN	640012	High Street
Edit Copy Delete	ADM_003	Manmohan	Singh	31	1991-04-08	ADMIN	575003	Pumpwell Road
Edit Copy Delete	USR_001	Ajit	Ullal	51	1971-01-01	PSGR	560001	10,Janpath
Edit Copy Delete	USR_002	Muhammed	Ali	21	2000-10-09	PSGR	560003	"10 Downing"
Edit Copy Delete	USR_003	Sai Deepak	Reddy	25	1996-12-12	PSGR	600001	"14 Kailsh Marg"
Edit Copy Delete	USR_004	Rudra	Agarwal	25	1996-12-13	PSGR	600042	"5 Lohia Garden"
Edit Copy Delete	USR_005	Rahul	Khanna	24	1997-12-14	PSGR	600067	"1 Pink Street"
Edit Copy Delete	USR_006	Nirmala	Seturaman	23	1998-12-15	PSGR	560105	"3 Blue Avenue"
Edit Copy Delete	USR_007	Smriti	Irani	22	1999-12-16	PSGR	575014	"4 Banyan Avenie"
Edit Copy Delete	USR_008	Ajit	Sethi	56	1966-04-14	PSGR	575001	"6 Poes Garden"
Edit Copy Delete	USR_009	Arjun	Allu	55	1967-04-08	PSGR	575020	"7 Dhamaka street"
Edit Copy Delete	USR_010	Samanta	Prabhu	54	1968-04-14	PSGR	600042	"8 Clone Colony"
Edit Copy Delete	USR_011	Kiran	Bedi	53	1969-04-14	PSGR	560003	"56 Brigade Road"
Edit Copy Delete	USR_012	Rahul	Gandhi	52	1970-04-08	PSGR	475001	Mirza road
Edit Copy Delete	USR_013	Rashkit	Shetty	51	1971-04-14	PSGR	560009	JC Road
Edit Copy Delete	USR_014	Rishi	Sunak	50	1972-04-14	PSGR	600034	Anna Sali
Edit Copy Delete	USR_015	Vedavalli	Srinath	49	1973-04-14	PSGR	560054	"Church Street Bangalore"
Edit Copy Delete	USR_016	Subbu	Saravana	48	1974-04-14	PSGR	600043	American Street
Edit Copy Delete	USR_017	Sheela	Dixit	47	1975-04-08	PSGR	560048	Kasturba Road
Edit Copy Delete	USR_018	Margaret	Alva	46	1976-04-14	PSGR	560008	New BEL Road
Edit Copy Delete	USR_019	Arun	Kumar	45	1977-04-14	PSGR	600046	Mint Street
Edit Copy Delete	USR_020	Anshu	Bhardwaj	44	1978-04-14	PSGR	575001	KSR Road
Edit Copy Delete	USR_021	Suma	Sampat	43	1979-04-08	PSGR	560012	"Old Airport Road Bangalore"
Edit Copy Delete	USR_022	Srihari	Udupa	42	1980-04-14	PSGR	560015	Suranjan Das Road

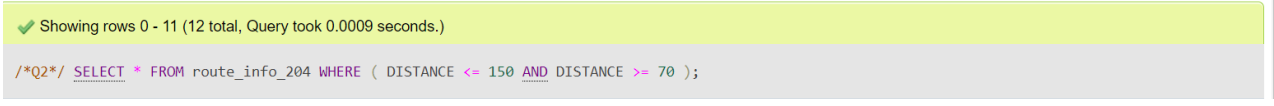
Console

Check all With selected: Edit Copy Delete Export

1 > >> Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

3. Display all the route information whose distance falls in a range from 70 to 150 km.

Query



Showing rows 0 - 11 (12 total, Query took 0.0009 seconds.)

```
/*Q2*/ SELECT * FROM route_info_204 WHERE ( DISTANCE <= 150 AND DISTANCE >= 70 );
```

Output

	from_station_no	to_station_no	from_station_name	to_station_name	DISTANCE	Train_No
Edit Copy Delete	1	2	Mangaluru	Kannur	131	25260
Edit Copy Delete	1	2	Chennai	Palakkad	130	25261
Edit Copy Delete	1	2	Bengaluru	Mysore	139	58451
Edit Copy Delete	1	2	Chennai	Sholingur	90	62620
Edit Copy Delete	1	2	Bengaluru	Bangarpet	71	62621
Edit Copy Delete	1	3	Chennai	Katpadi	129	62620
Edit Copy Delete	3	4	Kannur	Mangaluru	131	25261
Edit Copy Delete	3	4	Mysore	Bengaluru	139	58450
Edit Copy Delete	3	5	Katpadi	Chennai	130	62621
Edit Copy Delete	4	4	Palakkad	Chennai	130	25260
Edit Copy Delete	4	5	Bangarpet	Bengaluru	71	62620
Edit Copy Delete	4	5	Sholingur	Chennai	90	62621

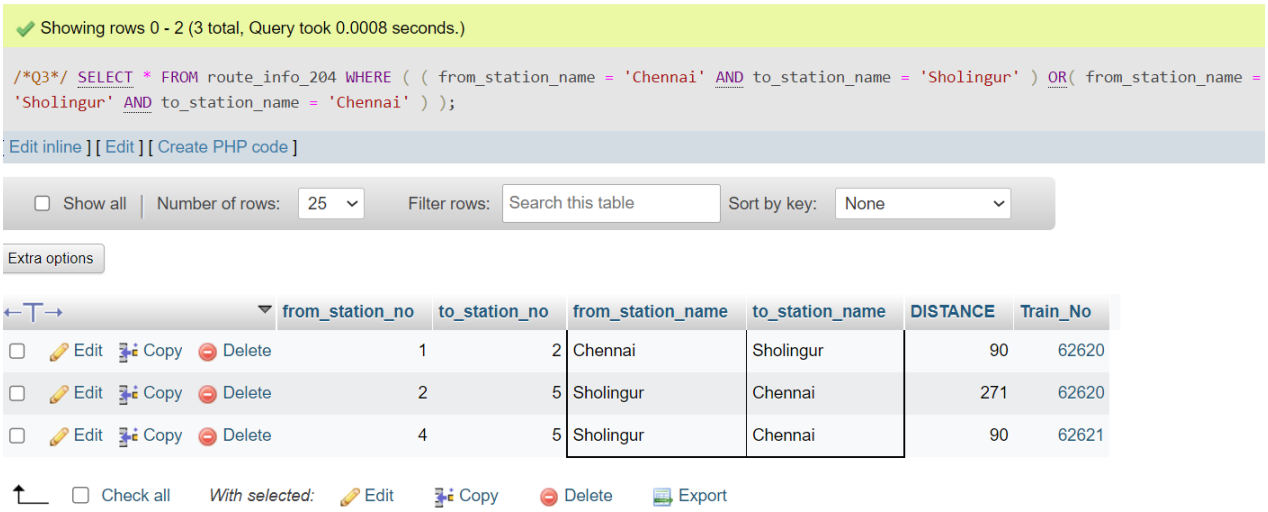
4. Display the train route information which are run between Chennai and Sholingur

Query

Run SQL query/queries on database railways_204:

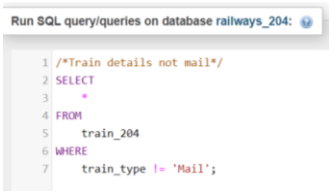
```sql
/*Q3*/
SELECT
    *
FROM
    route_info_204
WHERE
    (
        (
            from_station_name = 'Chennai' AND to_station_name = 'Sholingur'
        ) OR(
            from_station_name = 'Sholingur' AND to_station_name = 'Chennai'
        )
    )
```

Output

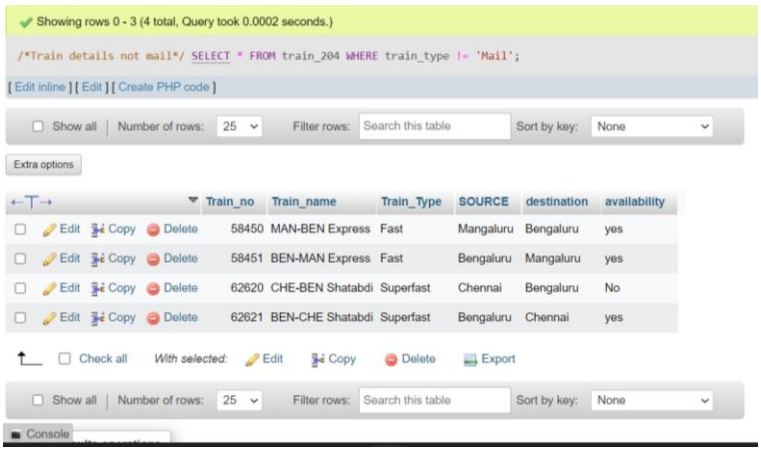


5. Display the train details whose type is not mail.

Query



Output



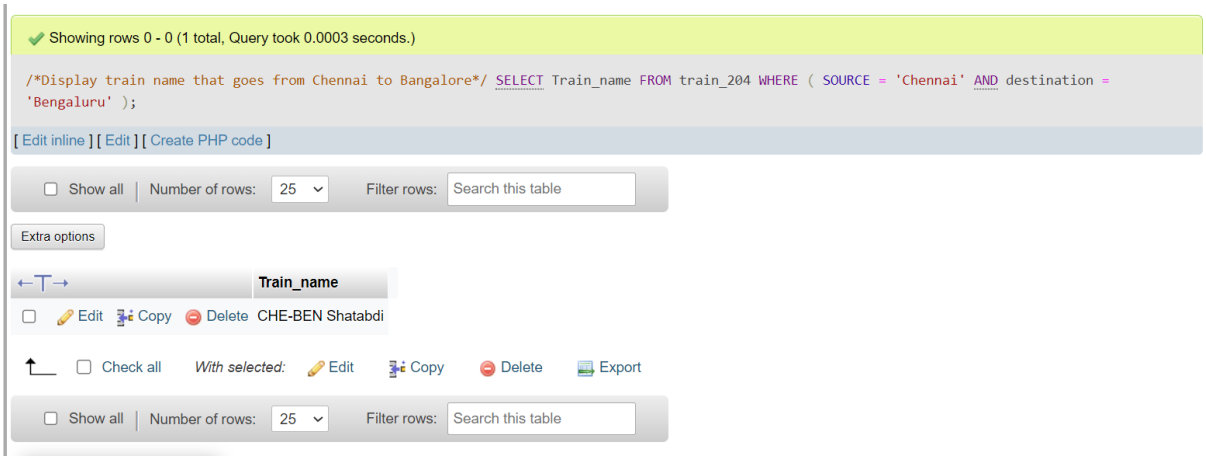
6. Display the train name which goes to Chennai from Bangalore.

Query

Run SQL query/queries on database railways_204:

```sql
/*Display train name that goes from Chennai to Bangalore*/
SELECT
    Train_name
FROM
    train_204
WHERE
    (
        SOURCE = 'Chennai' AND destination = 'Bengaluru'
    );
```

Output



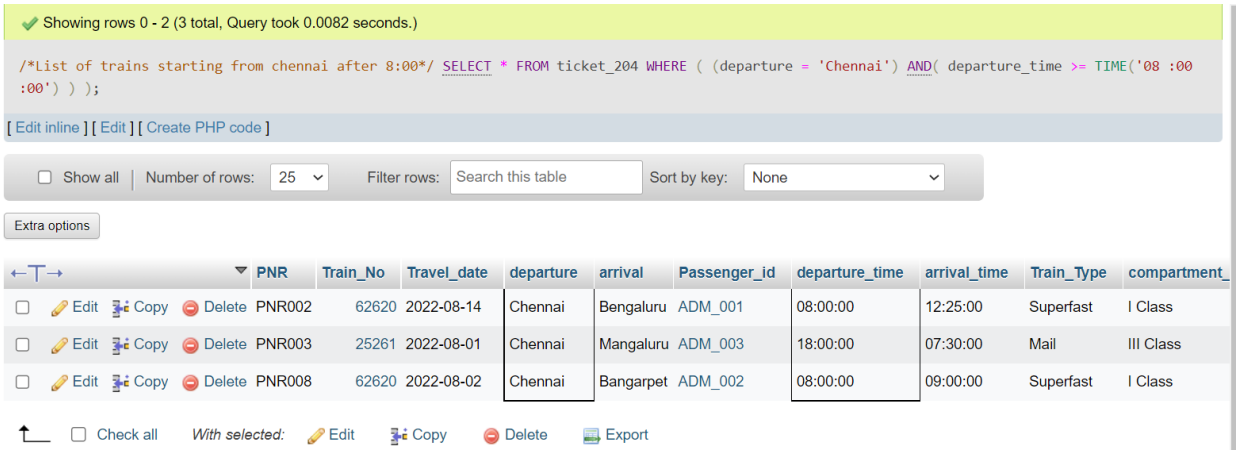
7. Display the list of trains starting from Chennai after 8:00.

Query

Run SQL query/queries on database railways_204:

```sql
/*List of trains starting from chennai after 8:00*/
SELECT
    *
FROM
    ticket_204
WHERE
    (
        (departure = 'Chennai') AND(
            departure_time >= TIME('08 :00 :00')
        )
    );
```

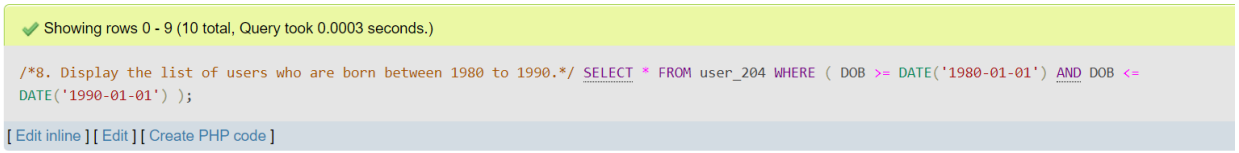
Output



	PNR	Train_No	Travel_date	departure	arrival	Passenger_id	departure_time	arrival_time	Train_Type	compartment_
Edit Copy Delete	PNR002	62620	2022-08-14	Chennai	Bengaluru	ADM_001	08:00:00	12:25:00	Superfast	I Class
Edit Copy Delete	PNR003	25261	2022-08-01	Chennai	Mangaluru	ADM_003	18:00:00	07:30:00	Mail	III Class
Edit Copy Delete	PNR008	62620	2022-08-02	Chennai	Bangarpet	ADM_002	08:00:00	09:00:00	Superfast	I Class

8. Display the list of users who are born between 1980 to 1990.

Query



Output

	User_ID	Firstname	Lastname	age	DOB	user_type	pincode	street_no
Edit Copy Delete	ADM_001	Narendra	Modi	0	1989-04-14	ADMIN	600047	Old Jail Road
Edit Copy Delete	USR_022	Srihari	Udupa	0	1980-04-14	PSGR	560015	Suranjan Das Road
Edit Copy Delete	USR_023	Satish	Kotian	0	1981-04-14	PSGR	600044	T Nagar
Edit Copy Delete	USR_024	Shradha	Nayar	0	1982-04-08	PSGR	560006	M G Road, Bangalore
Edit Copy Delete	USR_025	Manisha	Solanki	0	1983-04-08	PSGR	575030	M G Road
Edit Copy Delete	USR_026	Bharti	Devgan	0	1984-04-14	PSGR	560059	NAL Wind Tunnel Road
Edit Copy Delete	USR_027	Roopa	Ram	0	1985-04-14	PSGR	575023	Bunder Road
Edit Copy Delete	USR_028	Pallavi	Ram	0	1986-04-08	PSGR	560044	Lavelle Road
Edit Copy Delete	USR_029	Ravi	Naik	0	1987-04-14	PSGR	600045	Thiru V ka Salai
Edit Copy Delete	USR_030	Virat	Murthy	0	1988-04-14	PSGR	575011	Bejai New Road

9. Display the train users whose name starts with the letter ‘S’

Query

Run SQL query/queries on database railways_204:

```
/*9.    Display the train users whose name starts with the letter ‘S’*/
SELECT
    user_id,
    firstname,
    lastname
FROM
    user_204
WHERE
    firstname LIKE 'S%';
```

Output

	user_id	firstname	lastname
Edit Copy Delete	USR_003	Sai Deepak	Reddy
Edit Copy Delete	USR_007	Smriti	Irani
Edit Copy Delete	USR_010	Samanta	Prabhu
Edit Copy Delete	USR_016	Subbu	Saravana
Edit Copy Delete	USR_017	Sheela	Dixit
Edit Copy Delete	USR_021	Suma	Sampat
Edit Copy Delete	USR_022	Srihari	Udupa
Edit Copy Delete	USR_023	Satish	Kotian
Edit Copy Delete	USR_024	Shradha	Nayar

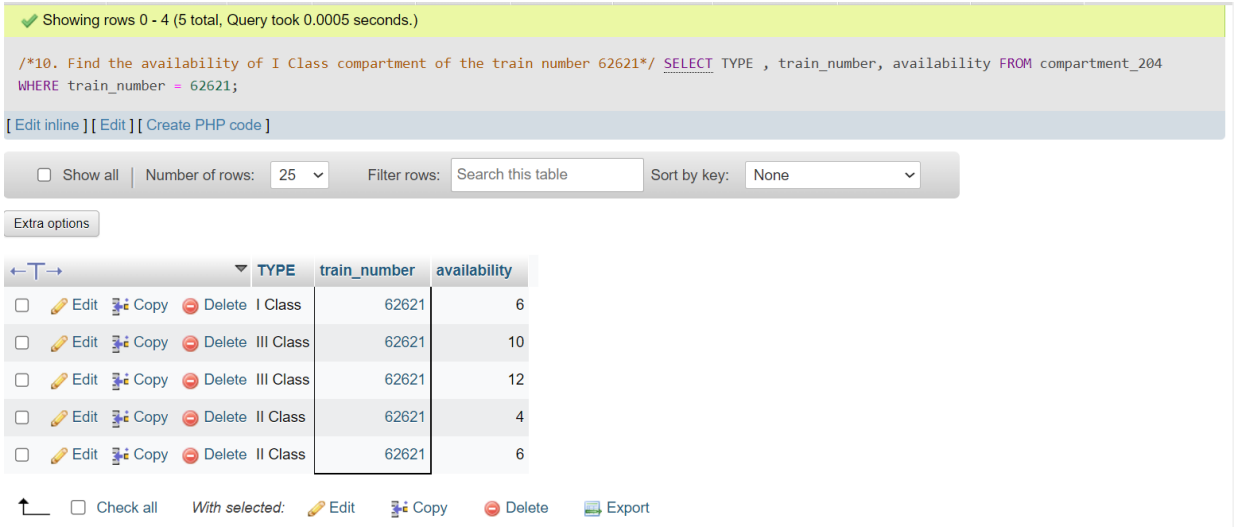
10. Find the availability of I Class compartment of the train number 62621

Query

Run SQL query/queries on database railways_204:

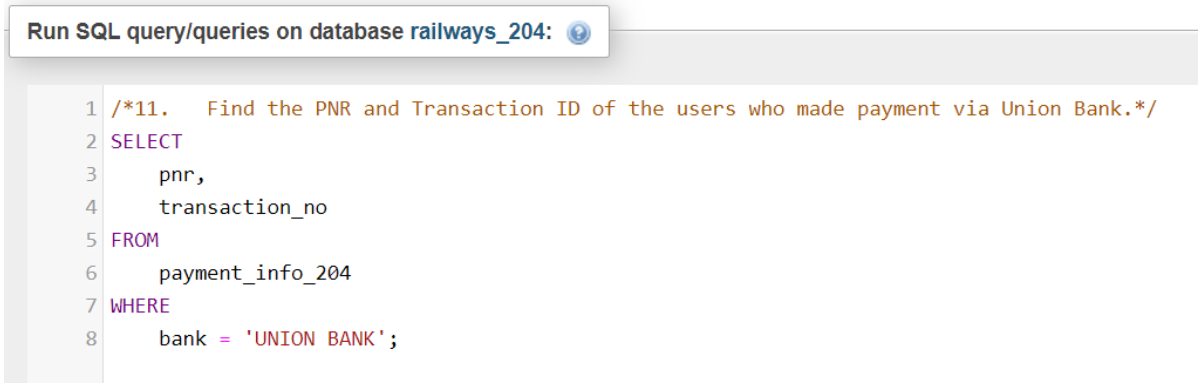
```
/*10.   Find the availability of I Class compartment of the train number 62621*/
SELECT TYPE
    ,
    train_number,
    availability
FROM
    compartment_204
WHERE
    train_number = 62621;
```

Output

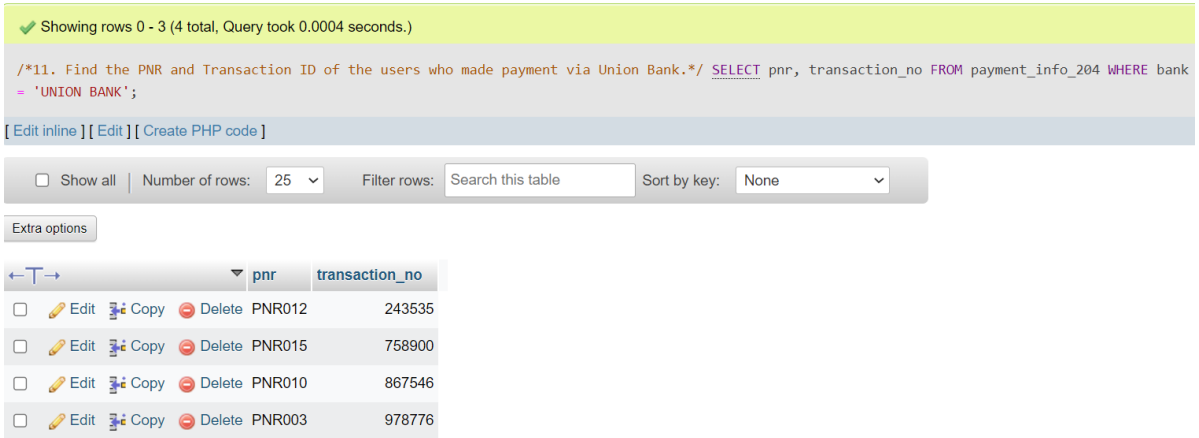


11. Find the PNR and Transaction ID of the users who made payment via Union Bank.

Query



Output



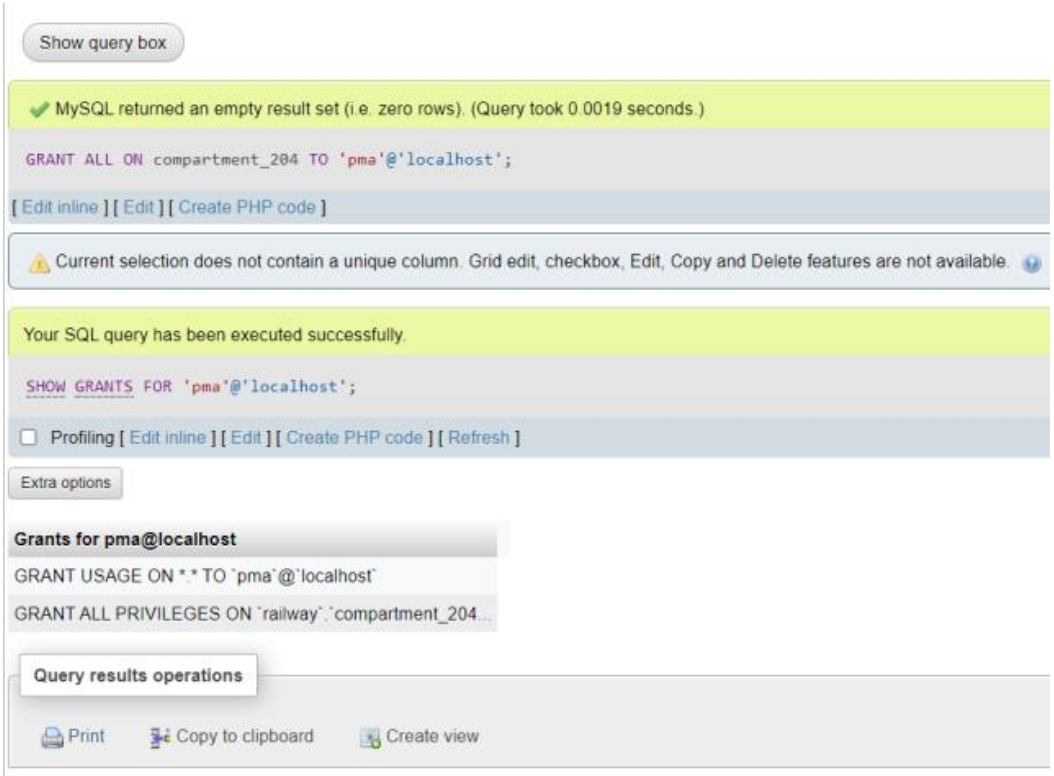
Task-II: Use DCL and TCL statements for the following:

1. Grant privileges on different tables to users and observe the effect.

   Query to see all users

   Grant privileges for all users

   Output of granting privileges to all users



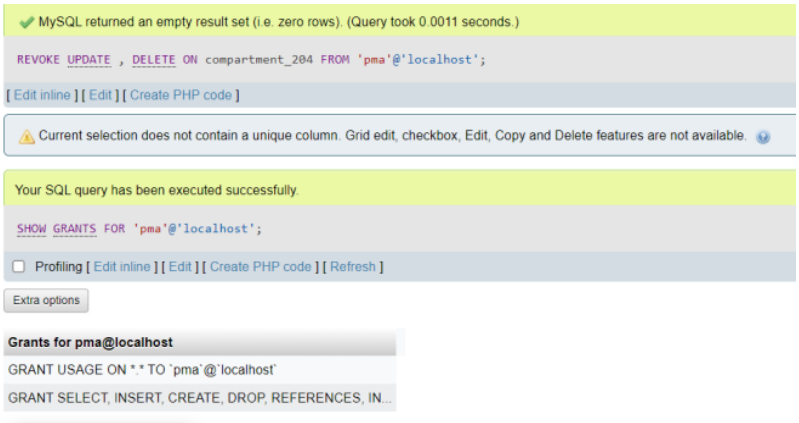
2. Revoke UPDATE & DELETE privileges on any tables and observe the effect if any deletion/updation is performed.

   Revoke update and delete command

Run SQL query/queries on database railway:

```
REVOKE
UPDATE
    ,
DELETE
ON
    compartment_204
FROM
    'pma'@'localhost';
SHOW GRANTS FOR
    'pma'@'localhost';
```

   Output



3. Create different save points and perform some insert/update/delete operations. Observe the effect of commit & rollback operations and release any created savepoints.

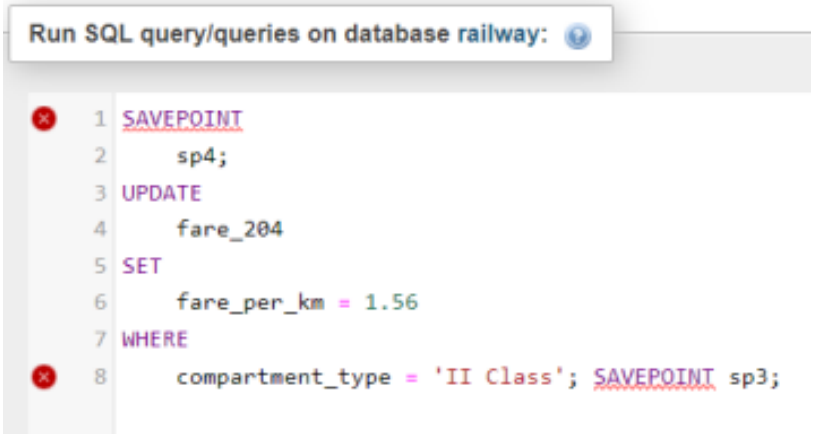
   Delete operation

Run SQL query/queries on database railway:

```
SAVEPOINT
    sp1;
DELETE
FROM
    fare_204
WHERE
    train_type = 'Fast'; SAVEPOINT sp2;
```

Output of delete operation

Update operation



Effect on update operation

Effect of commit

C:\xampp\mysql\bin\mysql.exe

```
MariaDB [railway_810]> select @@autocommit;
+--------------+
| @@autocommit |
+--------------+
|            1 |
+--------------+
1 row in set (0.000 sec)

MariaDB [railway_810]> set autocommit=0;
Query OK, 0 rows affected (0.000 sec)

MariaDB [railway_810]> select @@autocommit;
+--------------+
| @@autocommit |
+--------------+
|            0 |
+--------------+
1 row in set (0.000 sec)
```

```
MariaDB [railway_810]> delete from ticket_passenger_204 where age=40;
Query OK, 1 row affected (0.000 sec)

MariaDB [railway_810]> commit;
Query OK, 0 rows affected (0.001 sec)
```

C:\xampp\mysql\bin\mysql.exe

```
MariaDB [railway_810]> delete from ticket_passenger_204 where PNR='PNR005';
Query OK, 0 rows affected (0.001 sec)

MariaDB [railway_810]> savepoint A;
Query OK, 0 rows affected (0.000 sec)

MariaDB [railway_810]> delete from ticket_passenger_204 where age=21;
Query OK, 3 rows affected (0.001 sec)

MariaDB [railway_810]> select * from ticket_passenger_204;
+---------+-----------------+------+---------+
| seat_No | NAME            | age  | PNR     |
+---------+-----------------+------+---------+
 |F01-3   | Saideepak Reddy |   27 | PNR001
 |F01-4   | Sheela Reddy    |   25 | PNR001
 |F02-11  | SaiDeepak Reddy |   27 | PNR002
 |F02-12  | Sheela Reddy    |   25 | PNR002
 |G01-50  | Anwar Hussein   |   32 | PNR003
 |G02-31  | Anwar Hussein   |   32 | PNR004
 |S01-10  | Hema Ullal      |   27 | PNR005
 |S01-11  | Hima Ullal      |   28 | PNR005
 |S01-9   | Ajit Ullal      |   31 | PNR005
 |S01-14  | Christon D Souza |   27 | PNR007
 |F01-8   | Christon D Souza |   27 | PNR008
 |F01-7   | Sheela Seth     |   33 | PNR011
 |F01-13  | Ramya R         |   45 | PNR012
 |S01-2   | Shradha Nayar   |   20 | PNR014
 |S01-29  | Khushi Jha      |   18 | PNR015
+---------+-----------------+------+---------+
15 rows in set (0.000 sec)
```

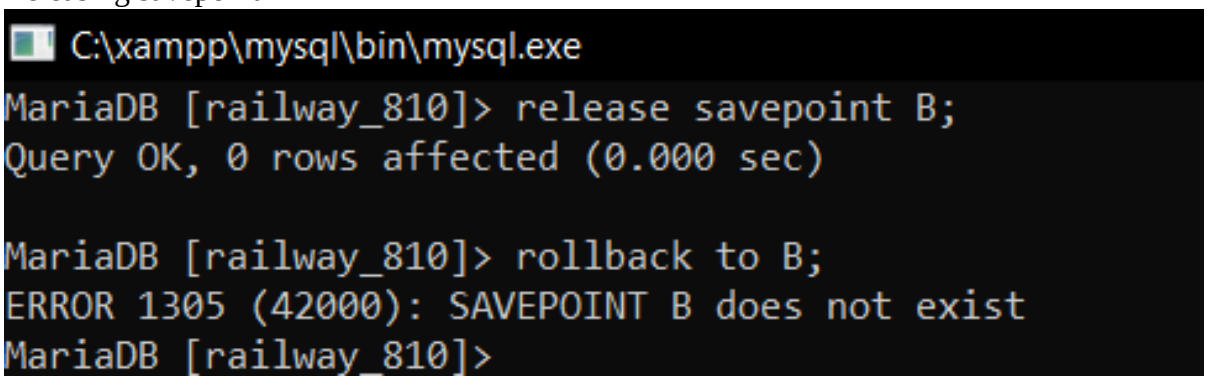
```
C:\xampp\mysql\bin\mysql.exe
MariaDB [railway_810]> update ticket_passenger_204 set age=37 where age=27;
Query OK, 5 rows affected (0.001 sec)
Rows matched: 5  Changed: 5  Warnings: 0

MariaDB [railway_810]> savepoint C;
Query OK, 0 rows affected (0.000 sec)
```

Effect of rollback

```
MariaDB [railway_810]> select * from ticket_passenger_204;
+---------+-----------------+------+---------+
| seat_No | NAME            | age  | PNR     |
+---------+-----------------+------+---------+
 |F01-3   | Saideepak Reddy |   27 | PNR001
 |F01-4   | Sheela Reddy    |   25 | PNR001
 |F02-11  | SaiDeepak Reddy |   27 | PNR002
 |F02-12  | Sheela Reddy    |   25 | PNR002
 |G01-50  | Anwar Hussein   |   32 | PNR003
 |G02-31  | Anwar Hussein   |   32 | PNR004
 |S01-10  | Hema Ullal      |   27 | PNR005
 |S01-11  | Hima Ullal      |   28 | PNR005
 |S01-9   | Ajit Ullal      |   31 | PNR005
 |S01-14  | Christon D Souza |   27 | PNR007
 |F01-8   | Christon D Souza |   27 | PNR008
 |F01-7   | Sheela Seth     |   33 | PNR011
 |F01-13  | Ramya R         |   45 | PNR012
 |S01-2   | Shradha Nayar   |   20 | PNR014
 |S01-29  | Khushi Jha      |   18 | PNR015
+---------+-----------------+------+---------+
15 rows in set (0.000 sec)

MariaDB [railway_810]> select * from ticket_passenger_204;
+---------+-----------------+------+---------+
| seat_No | NAME            | age  | PNR     |
+---------+-----------------+------+---------+
 |F01-3   | Saideepak Reddy |   27 | PNR001
 |F01-4   | Sheela Reddy    |   25 | PNR001
 |F02-11  | SaiDeepak Reddy |   27 | PNR002
 |F02-12  | Sheela Reddy    |   25 | PNR002
 |G01-50  | Anwar Hussein   |   32 | PNR003
 |G02-31  | Anwar Hussein   |   32 | PNR004
 |S01-10  | Hema Ullal      |   27 | PNR005
 |S01-11  | Hima Ullal      |   28 | PNR005
 |S01-9   | Ajit Ullal      |   31 | PNR005
 |S01-14  | Christon D Souza |   27 | PNR007
 |F01-8   | Christon D Souza |   27 | PNR008
 |F01-7   | Sheela Seth     |   33 | PNR011
 |F01-13  | Ramya R         |   45 | PNR012
 |S01-2   | Shradha Nayar   |   20 | PNR014
 |S01-29  | Khushi Jha      |   18 | PNR015
+---------+-----------------+------+---------+
15 rows in set (0.000 sec)

MariaDB [railway_810]>
```

Releasing savepoint