LAB 1

CS-254
Abhiraj Mengade
Roll no: 201CS102

Q 1. Write SQL statements for:
Create a table flights with following information:
FLIGHT(flno, fromplace, toplace, distance, departs, arrives)

a. Inserting data into the flight with five entries.

```
INSERT INTO FLIGHT VALUES(1,'India','UAE',2000,'8:00','16:00');
INSERT INTO FLIGHT VALUES(2,'Sri-Lanka','India',600,'7:00','10:00');
INSERT INTO FLIGHT
VALUES(3,'Frankfurt','Saudi',2000,'8:00','21:00');
INSERT INTO FLIGHT
VALUES(4,'Sydney','Los-Angeles',3000,'10:00','22:00');
INSERT INTO FLIGHT VALUES(5,'India','Laos',2300,'11:00','13:00');
COMMIT;
```

b. Altering table by adding new column price.

```
ALTER TABLE FLIGHT
ADD price int;
```

c. Deleting a row from the table.

```
DELETE FROM FLIGHT WHERE flno = 4;
```

Execute | Share main.sql STDIN

```
BEGIN TRANSACTION;

/* Create a table called FLIGHT */
CREATE TABLE FLIGHT(flno integer PRIMARY KEY, fromplace varchar(255),
    toplace varchar(255), distance int, departs varchar(255), arrives
    varchar(255) );

/* a.)Create few records in this table */
INSERT INTO FLIGHT VALUES(1,'India','UAE',2000,'8:00','16:00');
INSERT INTO FLIGHT VALUES(2,'Sri-Lanka','India',600,'7:00','10:00');
INSERT INTO FLIGHT VALUES(3,'Frankfurt','Saudi',2000,'8:00','21:00');
INSERT INTO FLIGHT VALUES(4,'Sydney','Los-Angeles',3000,'10:00','22:00');
INSERT INTO FLIGHT VALUES(5,'India','Laos',2300,'11:00','13:00');
COMMIT;

/* Display all the records from the table */
SELECT * FROM FLIGHT;

/* b.) Altering table */
ALTER TABLE FLIGHT
ADD price int;

/*c.) Dropping a row */
DELETE FROM FLIGHT WHERE flno = 4;
SELECT * FROM FLIGHT;
```

Result

```
$sqlite3 database.sdb < main.sql
1|India|UAE|2000|8:00|16:00
2|Sri-Lanka|India|600|7:00|10:00
3|Frankfurt|Saudi|2000|8:00|21:00
4|Sydney|Los-Angeles|3000|10:00|22:00
5|India|Laos|2300|11:00|13:00
1|India|UAE|2000|8:00|16:00|
2|Sri-Lanka|India|600|7:00|10:00|
3|Frankfurt|Saudi|2000|8:00|21:00|
5|India|Laos|2300|11:00|13:00|
```

d. Drop column distance.

```
ALTER TABLE FLIGHT
DROP COLUMN distance;
SELECT * FROM FLIGHT;
```

e. Enter any one row with a price value accepting the Null value and then update it to a particular price.

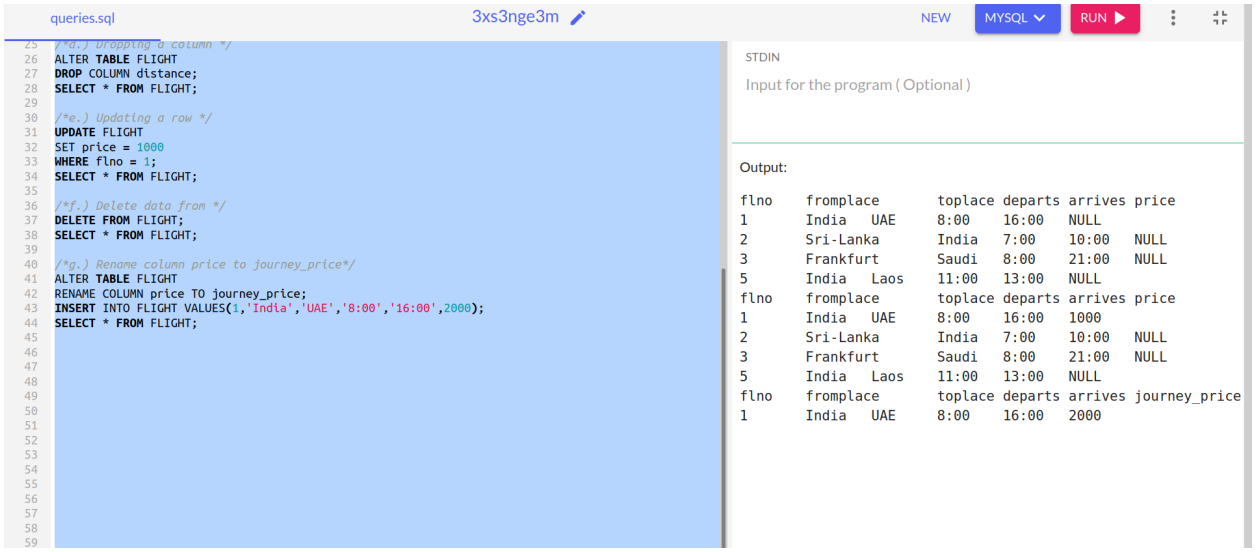
```
UPDATE FLIGHT
SET price = 1000
WHERE flno = 1;
SELECT * FROM FLIGHT;
```

f. Delete all the data from the table.

```
DELETE FROM FLIGHT;
SELECT * FROM FLIGHT;
```

g. Rename a column price to journey_price.

```
ALTER TABLE FLIGHT
RENAME COLUMN price TO journey_price;
```



Q2.Consider the following schema for a Library Database:
BOOK (Book_id, Title, Publisher_Name
Pub_Year)
BOOK_AUTHORS (Book_id, Author_Name)
PUBLISHER (Book_id, Name, Address, Phone)

a. Enter at least five tuples for the given relation.

```
INSERT INTO BOOK VALUES
 (1, 'DBMS', 'MCGRAW-HILL', 2017),
 (2, 'ADBMS', 'MCGRAW-HILL', 2016),
 (3, 'CN', 'PEARSON', 2016),
 (4, 'CG', 'PLANETA', 2015),
 (5, 'OS', 'PEARSON', 2016);
INSERT INTO BOOK_AUTHORS VALUES
(1, 'NAVATHE'),
(2, 'NAVATHE'),
(3, 'TANENBAUM'),
(4, 'EDWARD ANGEL'),
(5, 'GALVIN');
INSERT INTO PUBLISHER VALUES
(1, 'MCGRAW-HILL', 'BANGALORE', '9191919191'),
(2, 'MCGRAW-HILL', 'BANGALORE', '9191919191'),
(3, 'PEARSON', 'NEW DELHI', '8181818181'),
(4, 'PLANETA', 'BANGALORE', '5151515151'),
(5, 'PEARSON', 'NEW DELHI', '8181818181');
```

b. Retrieve details of all books in the library – id, title, name of publisher, authors, etc.

```
SELECT * FROM BOOK;
SELECT * FROM BOOK_AUTHORS;
SELECT * FROM PUBLISHER;
```

queries.sql — 3xs3nge3m — NEW — MYSQL — RUN

```
/*a.)Entering table values*/

CREATE TABLE BOOK(
   Book_id int NOT NULL,
   Title varchar(255),
   Publisher_Name varchar(255),
   Pub_Year int NOT NULL,
   PRIMARY KEY (Book_id));
CREATE TABLE BOOK_AUTHORS(
Book_id int NOT NULL,
Author_Name varchar(255),
FOREIGN KEY (Book_id) REFERENCES BOOK(Book_id));
CREATE TABLE PUBLISHER(
Book_id int NOT NULL,
Name varchar(255),
Address varchar(255),
Phone varchar(50),
FOREIGN KEY (Book_id) REFERENCES BOOK(Book_id));
INSERT INTO BOOK VALUES
  (1, 'DBMS', 'MCGRAW-HILL', 2017),
  (2, 'ADBMS', 'MCGRAW-HILL', 2016),
  (3, 'CN', 'PEARSON', 2016),
  (4, 'CG', 'PLANETA', 2015),
  (5, 'OS', 'PEARSON', 2016);
INSERT INTO BOOK_AUTHORS VALUES
 (1, 'NAVATHE'),
 (2, 'NAVATHE'),
 (3, 'TANENBAUM'),
 (4, 'EDWARD ANGEL'),
 (5, 'GALVIN');
INSERT INTO PUBLISHER VALUES
 (1, 'MCGRAW-HILL', 'BANGALORE', '9191919191'),
 (2, 'MCGRAW-HILL', 'BANGALORE', '9191919191'),
 (3, 'PEARSON', 'NEW DELHI', '8181818181'),
 (4, 'PLANETA', 'BANGALORE', '5151515151'),
 (5, 'PEARSON', 'NEW DELHI', '8181818181');
SELECT * FROM BOOK;
```

STDIN

Input for the program (Optional)

Output:

```
Book_id Title   Publisher_Name  Pub_Year
1       DBMS    MCGRAW-HILL     2017
2       ADBMS   MCGRAW-HILL     2016
3       CN      PEARSON 2016
4       CG      PLANETA 2015
5       OS      PEARSON 2016
Book_id Author_Name
1       NAVATHE
2       NAVATHE
3       TANENBAUM
4       EDWARD ANGEL
5       GALVIN
Book_id Name    Address  Phone
1       MCGRAW-HILL     BANGALORE       9191919191
2       MCGRAW-HILL     BANGALORE       9191919191
3       PEARSON NEW DELHI       8181818181
4       PLANETA BANGALORE       5151515151
5       PEARSON NEW DELHI       8181818181
```

c. Get the books written by a particular author.

```
SELECT
B.Book_id,
B.Title,
A.Author_Name,
B.Publisher_Name,
B.Pub_Year
FROM
BOOK B,
BOOK_AUTHORS A
WHERE
B.Book_id = A.Book_id
AND
A.Author_Name = 'NAVATHE';
```

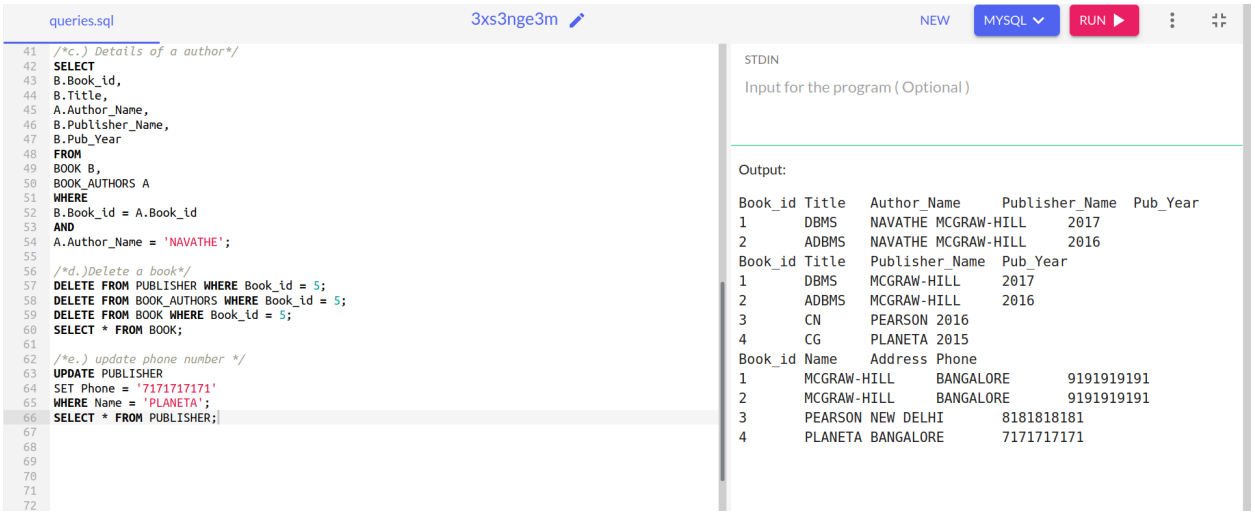
d. Delete a book in the BOOK table.

```
DELETE FROM PUBLISHER WHERE Book_id = 5;
DELETE FROM BOOK_AUTHORS WHERE Book_id = 5;
```

```
DELETE FROM BOOK WHERE Book_id = 5;
```

e. Update the phone number of a publisher.

```
UPDATE PUBLISHER
SET Phone = '7171717171'
WHERE Name = 'PLANETA';
```



f. Through book_id retrieve the details of author name and publisher details.

```
SELECT A.Book_id,
A.Author_Name,
P.Name,
P.Address,
P.Phone
FROM BOOK_AUTHORS A, PUBLISHER P
WHERE A.Book_id=P.Book_id;
```

g. Drop Author_Name column from BOOK_AUTHORS.

```
ALTER TABLE BOOK_AUTHORS DROP COLUMN Author_Name;
SELECT * FROM BOOK_AUTHORS;
```

h. Rename Name (from Publisher) to Publisher_name

```
ALTER TABLE PUBLISHER RENAME COLUMN Name TO Publisher_Name;
SELECT * FROM PUBLISHER;
```

Q3. Consider the following schema for OrderDatabase:
SALESMAN (Salesman_id, Name, City, Salary)
CUSTOMER (Customer_id, Cust_Name, City, Salesman_id)
ORDERS (Ord_No, Purchase_Amt, Ord_Date, Customer_id, Salesman_id)

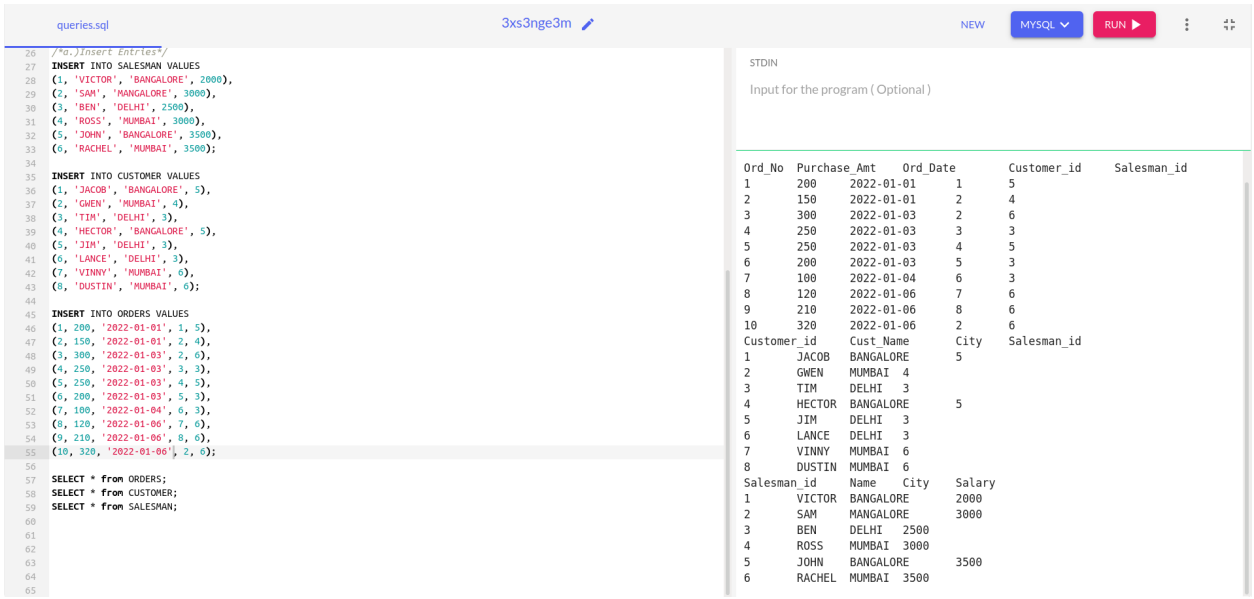
a. Insert 5-10 entries.

```
INSERT INTO SALESMAN VALUES
(1, 'VICTOR', 'BANGALORE', 2000),
(2, 'SAM', 'MANGALORE', 3000),
(3, 'BEN', 'DELHI', 2500),
(4, 'ROSS', 'MUMBAI', 3000),
(5, 'JOHN', 'BANGALORE', 3500),
(6, 'RACHEL', 'MUMBAI', 3500);

INSERT INTO CUSTOMER VALUES
(1, 'JACOB', 'BANGALORE', 5),
(2, 'GWEN', 'MUMBAI', 4),
(3, 'TIM', 'DELHI', 3),
(4, 'HECTOR', 'BANGALORE', 5),
(5, 'JIM', 'DELHI', 3),
(6, 'LANCE', 'DELHI', 3),
(7, 'VINNY', 'MUMBAI', 6),
(8, 'DUSTIN', 'MUMBAI', 6);

INSERT INTO ORDERS VALUES
(1, 200, '2022-01-01', 1, 5),
```

```
(2, 150, '2022-01-01', 2, 4),
(3, 300, '2022-01-03', 2, 6),
(4, 250, '2022-01-03', 3, 3),
(5, 250, '2022-01-03', 4, 5),
(6, 200, '2022-01-03', 5, 3),
(7, 100, '2022-01-04', 6, 3),
(8, 120, '2022-01-06', 7, 6),
(9, 210, '2022-01-06', 8, 6),
(10, 320, '2022-01-06', 2, 6);
```

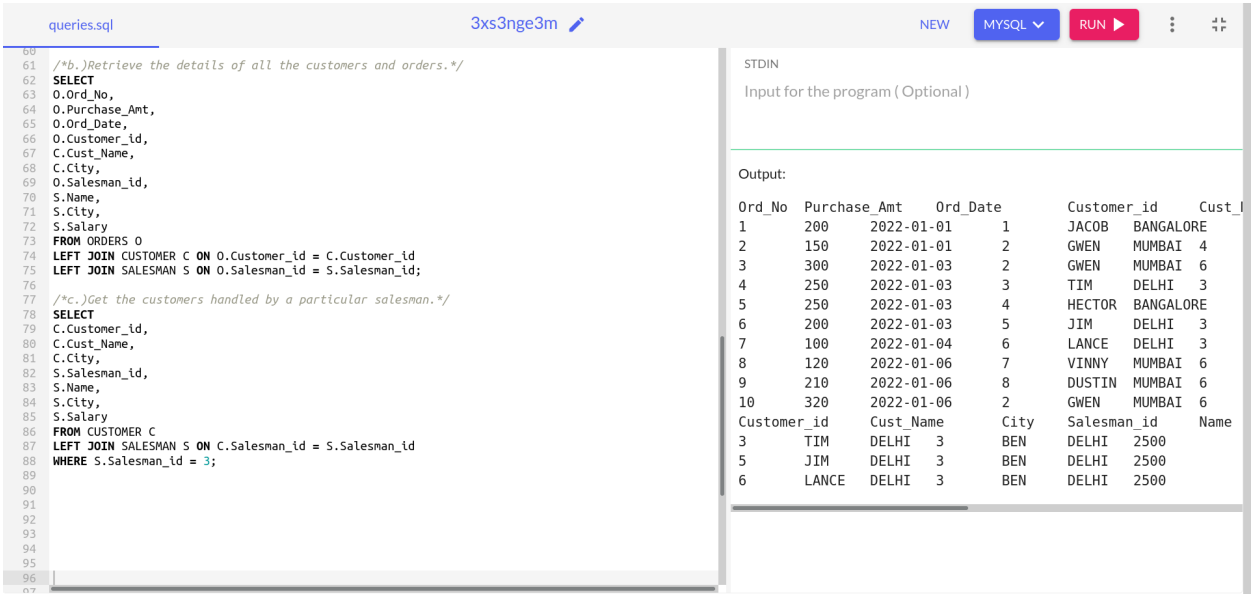


b. Retrieve the details of all the customers and orders.

```
SELECT O.Ord_No,
   O.Purchase_Amt,
   O.Ord_Date,
   O.Customer_id,
   C.Cust_Name,
   C.City,
   O.Salesman_id,
   S.Name,
   S.City,
   S.Salary
FROM ORDERS O
   LEFT JOIN CUSTOMER C ON O.Customer_id = C.Customer_id
   LEFT JOIN SALESMAN S ON O.Salesman_id = S.Salesman_id;
```

c. Get the customers handled by a particular salesman.

```
SELECT C.Customer_id,
   C.Cust_Name,
   C.City,
   S.Salesman_id,
   S.Name,
   S.City,
   S.Salary
FROM CUSTOMER C
   LEFT JOIN SALESMAN S ON C.Salesman_id = S.Salesman_id
WHERE S.Salesman_id = 3;
```



d. Get the details of orders purchased by customers.

```
SELECT O.Ord_No,
   O.Purchase_Amt,
   O.Ord_Date,
   O.Customer_id,
   C.Cust_name,
   C.City
FROM ORDERS O
   INNER JOIN CUSTOMER C ON O.Customer_id = C.Customer_id
WHERE O.Customer_id = 2;
```

e. Through salesman_id retrieve the details of his sold orders.

```
SELECT O.Ord_No,
```

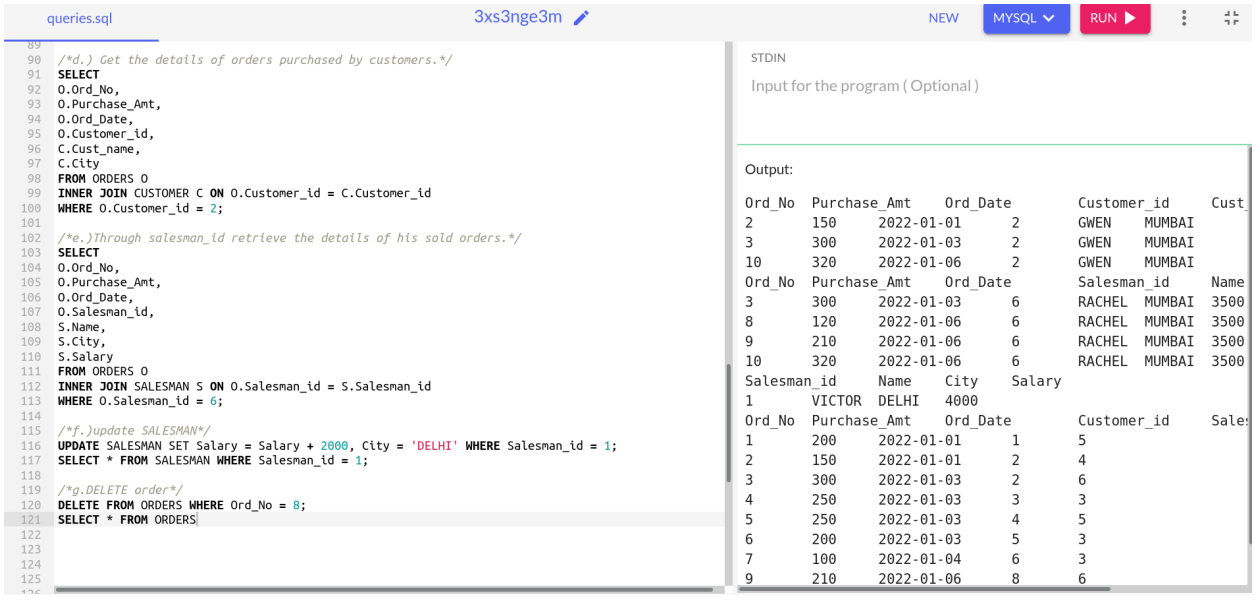
```
   O.Purchase_Amt,
   O.Ord_Date,
   O.Salesman_id,
   S.Name,
   S.City,
   S.Salary
FROM ORDERS O
   INNER JOIN SALESMAN S ON O.Salesman_id = S.Salesman_id
WHERE O.Salesman_id = 6;
```

f. One of the salesmen is getting a raise of 2000 and is getting relocated to Delhi. update his data.

```
UPDATE SALESMAN
SET Salary = Salary + 2000,
   City = 'DELHI'
WHERE Salesman_id = 1;
```

g. Delete an order and its details as the customer placed an order and canceled it.

```
DELETE FROM ORDERS
WHERE Ord_No = 8;
```



h. Rename the City column to Place.

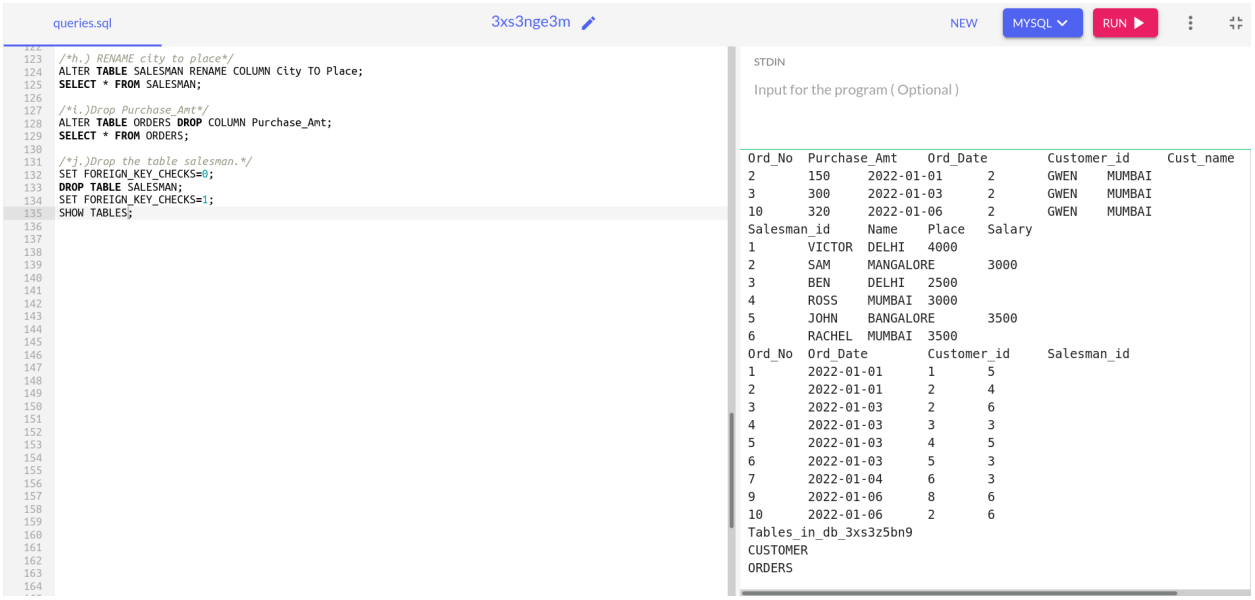
```
ALTER TABLE SALESMAN
   RENAME COLUMN City TO Place;
```

i. Drop purchase_amt column from the table orders.

```
ALTER TABLE ORDERS DROP COLUMN Purchase_Amt;
SELECT *
FROM ORDERS;
```

j. Drop the table salesman.

```
SET FOREIGN_KEY_CHECKS = 0;
DROP TABLE SALESMAN;
SET FOREIGN_KEY_CHECKS = 1;
```



Q4. Write SQL statements for the following:

Create a table sub with following information: columns and data types: name varchar(8), age number(5), mark1 number(4), mark2 number(4), mark3 number(4);

a. Enter at least five tuples for the given relation.

```
INSERT INTO SUB VALUES
('Ross', 21, 90, 95, 92),
('John', 20, 89, 92, 91),
('Jacob', 21, 83, 81, 90),
('Ron', 21, 96, 98, 93),
('Harry', 20, 99, 97, 92),
('Ginny', 20, 98, 92, 95);
```

b. Add one more column with field name as total with data type as number(5).

```
ALTER TABLE SUB ADD total int CHECK (total BETWEEN 0 AND 99999);
```

c. Update the age of sub for a particular student.

```
UPDATE SUB SET age = 21 WHERE name = 'John';
```

d. Deleting a row from the table.

```
DELETE FROM SUB WHERE name = 'Ross';
```

e. Drop column mark3.

```
ALTER TABLE SUB DROP COLUMN mark3;
SELECT * FROM SUB;
```

queries.sql — 3xs3nge3m — NEW — MYSQL — RUN

```
CREATE TABLE SUB (
name varchar(8),
age int CHECK (age BETWEEN 0 AND 99999),
mark1 int CHECK (mark1 BETWEEN 0 AND 9999),
mark2 int CHECK (mark2 BETWEEN 0 AND 9999),
mark3 int CHECK (mark3 BETWEEN 0 AND 9999));

/*a.)Enter at least five tuples for the given relation.*/

INSERT INTO SUB VALUES
('Ross', 21, 90, 95, 92),
('John', 20, 89, 92, 91),
('Jacob', 21, 83, 81, 90),
('Ron', 21, 96, 98, 93),
('Harry', 20, 99, 97, 92),
('Ginny', 20, 98, 92, 95);
SELECT * FROM SUB;

/*b.)Add one more column with field name as total with data type as number(5).*/
ALTER TABLE SUB ADD total int CHECK (total BETWEEN 0 AND 99999);
SELECT * FROM SUB;

/*c.)Update the age of sub for a particular student.*/
UPDATE SUB SET age = 21 WHERE name = 'John';
SELECT * FROM SUB WHERE name = 'John';

/*d.) DELETE entry */
DELETE FROM SUB WHERE name = 'Ross';

/*e.) DROP COLUMN*/
ALTER TABLE SUB DROP COLUMN mark3;
SELECT * FROM SUB;
```

STDIN

Input for the program (Optional)

Output:

```
name    age     mark1   mark2   mark3
Ross    21      90      95      92
John    20      89      92      91
Jacob   21      83      81      90
Ron     21      96      98      93
Harry   20      99      97      92
Ginny   20      98      92      95
name    age     mark1   mark2   mark3   total
Ross    21      90      95      92      NULL
John    20      89      92      91      NULL
Jacob   21      83      81      90      NULL
Ron     21      96      98      93      NULL
Harry   20      99      97      92      NULL
Ginny   20      98      92      95      NULL
name    age     mark1   mark2   mark3   total
John    21      89      92      91      NULL
name    age     mark1   mark2   total
John    21      89      92      NULL
Jacob   21      83      81      NULL
Ron     21      96      98      NULL
Harry   20      99      97      NULL
Ginny   20      98      92      NULL
```

f. Modify the table by changing the data type of ,mark3 to number(6)

```
ALTER TABLE SUB MODIFY COLUMN mark3 int CHECK (mark3 BETWEEN 0 AND
999999);
```

g. Delete all the data from the sub table.

```
DELETE FROM SUB;
```

h. Delete the table.

```
DROP TABLE SUB;
```

queries.sql

```
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34
35  /*f.)Modify the table by changing the data type of ,mark3 to number(6)*/
36  ALTER TABLE SUB MODIFY COLUMN mark3 int CHECK (mark3 BETWEEN 0 AND 999999);
37  SELECT * FROM SUB;
38
39
40  /*g.) Delete all the data from the sub table.*/
41  DELETE FROM SUB;
42  SELECT * FROM SUB;
43
44
45  /*h.)Delete the table.*/
46  DROP TABLE SUB;
47  SHOW TABLES;
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62
63
```

STDIN

Input for the program (Optional)

Output:

name	age	mark1	mark2	mark3	total
John	21	89	92	91	NULL
Jacob	21	83	81	90	NULL
Ron	21	96	98	93	NULL
Harry	20	99	97	92	NULL
Ginny	20	98	92	95	NULL