Hotwax Training

Assignment : Day 3

Task 1: Ways to provide enumerations in SQL.

There are mostly two methods to provide enumerations in a SQL Database. As I’m using MySQL Database, So, here is the description of those two methods:

1. Using **enum** data-type **:**

   Example:
   ```
   CREATE TABLE users(
        Id INT PRIMARY KEY NOT NULL AUTO_INCREMENT,
        name VARCHAR(50),
        gender ENUM (‘Male’, ‘Female’, ‘Other’)
   );
   ```

   But, let if we want **to add one more column** in the above table “isMember” having values only Yes or No then we can add this as:

   ```
   ALTER TABLE users ADD COLUMN isMember ENUM(‘Yes’, ‘No’);
   ```

   So, **for inserting data**, the INSERT query will be like:

   ```
   INSERT INTO users (id, name, gender, isMember) VALUES
      (1, 'Payal', 'Female', 'Yes'),
      (2, 'Muskan', 'Female', 'No');
   ```

2. Using **CHECK** constraint :

   Example:
   ```
   CREATE TABLE students(
        s_id INT PRIMARY KEY AUTO_INCREMENT,
        s_name VARCHAR(50),
        is_registered VARCHAR(10) NOT NULL DEFAULT (‘No’),
        CHECK (is_registered IN (‘Yes’, ‘No’))
   );
   ```
   But this method was built for MySQL8.0 or above only.

Note: MySQL takes the enum values as integers internally, like,

True = 1
False = 2
NULL = 0

Task 2: Explore TINYINT, INT and BIGINT.

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1. **TINYINT** datatype :
   - Size = 1 byte (8 bits)
   - Signed Range = -127 to +128
   - Unsigned range = 0 to 255
2. **INT (or INTEGER)** datatype :
   - Size = 4 bytes (32 bits)
   - Signed Range = -9,223,372,036,854,775,808 to +9,223,372,036,854,775,807 (-2^{31} to 2^{31} -1)
   - Unsigned Range = 0 to 4,294,967,295 (0 to 2^{32}-1)
3. **BIGINT** datatype :
   - Size = 8 bytes (64 bits)
   - Signed Range = -9,223,372,036,854,775,808 to +9,223,372,036,854,775,807 (-2^{63} to 2^{63}-1)
   - Unsigned Range = 0 to 18,446,744,073,709,551,615 (0 to 2^{64}-1)

Where to use which datatype?
TINYINT - Boolean values, Status flags, Ratings, User Roles, Categories etc.
INT - For Moderate sized values like, count of orders, products and in case of user id etc.
BIGINT - For extreme large values like money or financial data, views, time-stamps etc.

TASK 3: Usage of CASCADE.

CASCADING is used in the scenario where two tables are joined by foreign keys. Basically, when we want some changes in one table to be reflected in another table also which is connected through some foreign key, then we use cascading.

A parent table is the main table and the child table is the table in which we use a attribute of parent table as foreign key.

This can be used in two ways like :

1. **ON DELETE CASCADE -** When a row in the parent table is deleted, all matching rows in the child table are automatically deleted.
   Example:
   Consider a ‘departments’ table as parent table:
   ```
   CREATE TABLE departments (
       dept_id INT PRIMARY KEY,
       dept_name VARCHAR(50)
     );
   ```
   Consider another table ‘teacher’ as child table:

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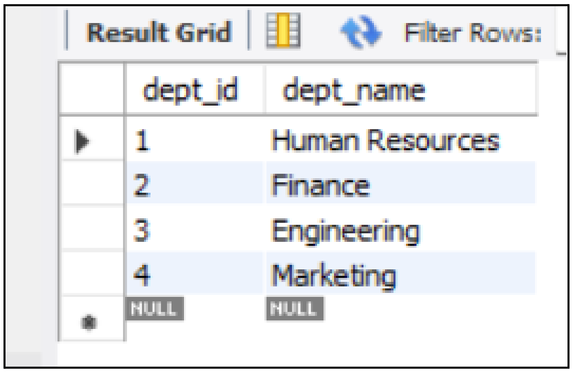
```
CREATE TABLE employees (
        emp_id INT PRIMARY KEY,
        emp_name VARCHAR(50),
        dept_id INT,
        FOREIGN KEY (dept_id) REFERENCES departments(dept_id)
        ON DELETE CASCADE
);
```

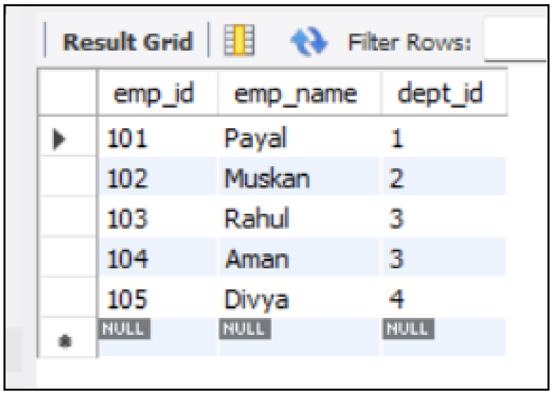
Now insert some data into both the tables:

```
INSERT INTO departments (dept_id, dept_name) VALUES
        (1, 'Human Resources'),
        (2, 'Finance'),
        (3, 'Engineering'),
        (4, 'Marketing');
```

```
INSERT INTO employees (emp_id, emp_name, dept_id) VALUES
             (101, 'Payal', 1),
             (102, 'Muskan', 2),
             (103, 'Rahul', 3),
             (104, 'Aman', 3),
             (105, ‘Harsh’, 4);
```



dept_id	dept_name
1	Human Resources
2	Finance
3	Engineering
4	Marketing
NULL	NULL

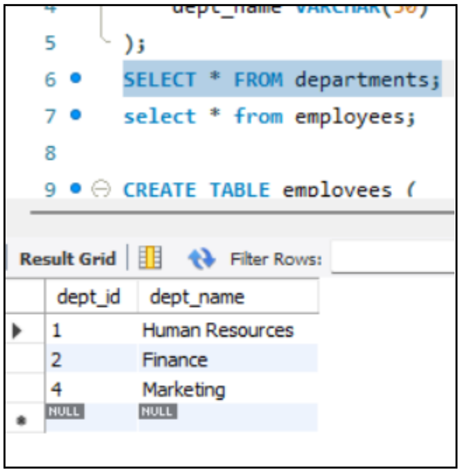


emp_id	emp_name	dept_id
101	Payal	1
102	Muskan	2
103	Rahul	3
104	Aman	3
105	Divya	4
NULL	NULL	NULL

Now on deleting row 3 from the departments table, the rows in the employees table working in the deleted department will also be deleted.

```
DELETE FROM departments WHERE dept_id = 3;
```

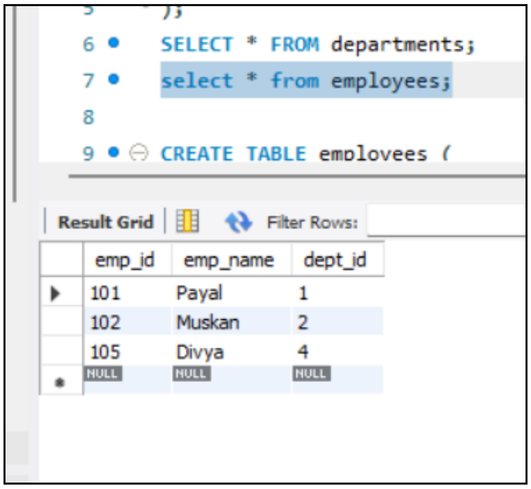
OUTPUT :



```
    dept_name VARCHAR(50)
);
SELECT * FROM departments;
select * from employees;

CREATE TABLE employees (
```

dept_id	dept_name
1	Human Resources
2	Finance
4	Marketing
NULL	NULL



```
);
SELECT * FROM departments;
select * from employees;

CREATE TABLE employees (
```

emp_id	emp_name	dept_id
101	Payal	1
102	Muskan	2
105	Divya	4
NULL	NULL	NULL

2. **ON UPDATE CASCADE :**
   When a value in the **parent table** is updated (like a primary key), the **foreign key** in the child table is **automatically updated**.
   Because the primary key of the parent table works as foreign key in the child table.

Example: In the above tables department and employees, if we use ON UPDATE CASCADE, instead of ON DELETE CASCADE, the updated values of department table will also get updated in employees table:

Now, first drop the employee table and create the employee table again using ON UPDATE CASCADE :

```
CREATE TABLE employees (
   emp_id INT PRIMARY KEY,
   emp_name VARCHAR(50),
   dept_id INT,
   FOREIGN KEY (dept_id) REFERENCES departments(dept_id) ON UPDATE CASCADE
);
```

Before updation:

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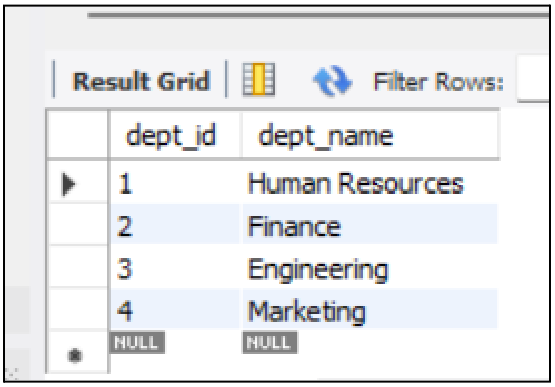
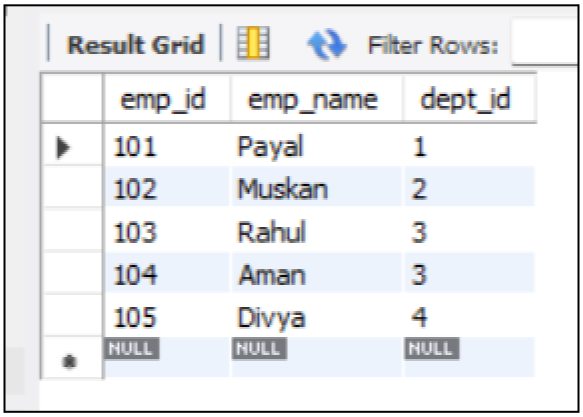


dept_id	dept_name
1	Human Resources
2	Finance
3	Engineering
4	Marketing
NULL	NULL

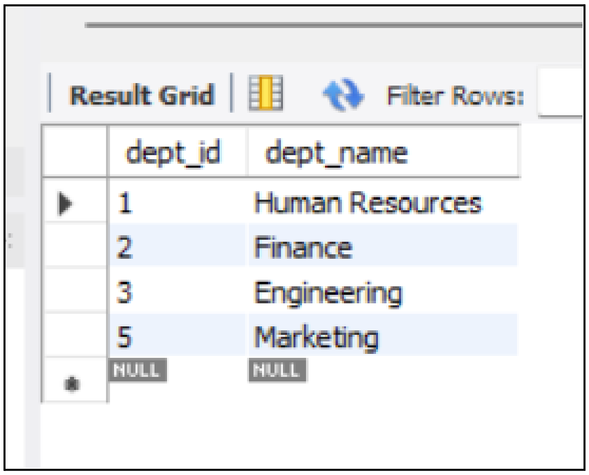


emp_id	emp_name	dept_id
101	Payal	1
102	Muskan	2
103	Rahul	3
104	Aman	3
105	Divya	4
NULL	NULL	NULL

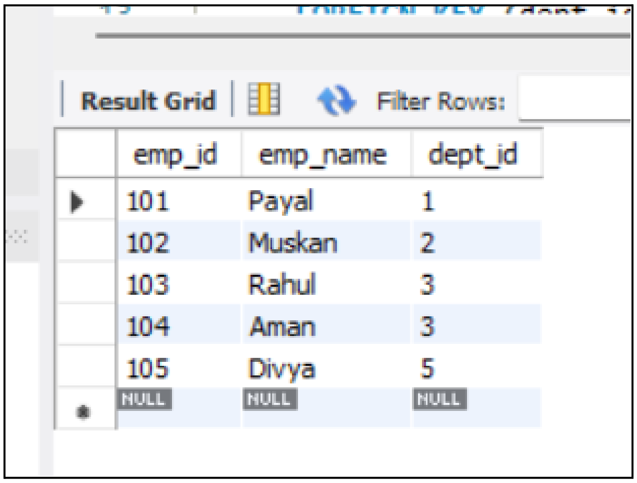
Now update some row:

UPDATE departments SET dept_id = 5 WHERE dept_id = 4;

After updation:



dept_id	dept_name
1	Human Resources
2	Finance
3	Engineering
5	Marketing
NULL	NULL



emp_id	emp_name	dept_id
101	Payal	1
102	Muskan	2
103	Rahul	3
104	Aman	3
105	Divya	5
NULL	NULL	NULL

3. **ON DELETE SET NULL :**
   It sets the value of foreign key as null in child table which is deleted from the parent table.

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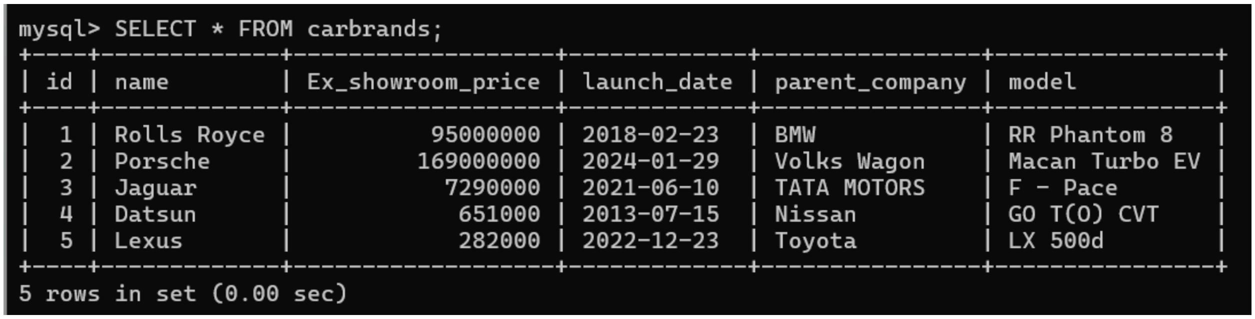
TASK 4: Total 50 SQL Queries for Create, Insert and Alter Commands.

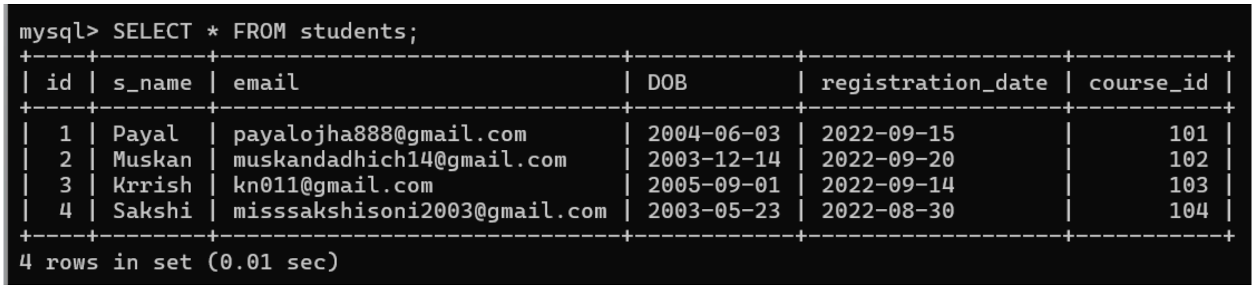
1. **CREATE DATABASE TEST;**
2. **CREATE TABLE carbrands(id int PRIMARY KEY NOT NULL, name VARCHAR(20), Ex_showroom_price INT, launch_date date, company varchar(20));**
3. **ALTER TABLE carbrands ADD COLUMN model varchar(20);**
4. **INSERT INTO carbrands VALUES (1, "Rolls Royce", 95000000, '2018-02-23', 'RR Phantom 8');**
5. **ALTER TABLE carbrands CHANGE company parent_company VARCHAR(20);**
6. **INSERT INTO carbrands VALUES (2, "Porsche", 169000000, '2024-01-29', 'Volks Wagon', 'Macan Turbo EV');**
7. **INSERT INTO carbrands VALUES (3, "Jaguar", 7290000, '2021-06-10', 'TATA MOTORS', 'F - Pace');**
8. **INSERT INTO carbrands VALUES (4, "Datsun", 651000, '2013-07-15', 'Nissan', 'GO T(O) CVT'),(5, "Lexus", 282000, '2022-12-23', 'Toyota', 'LX 500d');**



```
mysql> SELECT * FROM carbrands;
+----+-------------+-------------------+-------------+----------------+----------------+
| id | name        | Ex_showroom_price | launch_date | parent_company | model          |
+----+-------------+-------------------+-------------+----------------+----------------+
|  1 | Rolls Royce |          95000000 | 2018-02-23  | BMW            | RR Phantom 8   |
|  2 | Porsche     |         169000000 | 2024-01-29  | Volks Wagon    | Macan Turbo EV |
|  3 | Jaguar      |           7290000 | 2021-06-10  | TATA MOTORS    | F - Pace       |
|  4 | Datsun      |            651000 | 2013-07-15  | Nissan         | GO T(O) CVT    |
|  5 | Lexus       |            282000 | 2022-12-23  | Toyota         | LX 500d        |
+----+-------------+-------------------+-------------+----------------+----------------+
5 rows in set (0.00 sec)
```

9. **CREATE TABLE students(id int PRIMARY KEY NOT NULL AUTO_INCREMENT, s_name VARCHAR(100), email VARCHAR(255) UNIQUE NOT NULL, DOB DATE, registration_date DATE, course_id int DEFAULT NULL)**
10. **ALTER TABLE students ADD CONSTRAINT check_email CHECK (email LIKE '%_@_%._%');**
11. **INSERT INTO students (s_name, email, DOB, registration_date, course_id) VALUES ("Payal", 'payalojha888@gmail.com', '2004-06-03', '2022-09-15', 101);**
12. **INSERT INTO students (s_name, email, DOB, registration_date, course_id) VALUES ("Muskan", 'muskandadhich14@gmail.com', '2003-12-14', '2022-09-20', 102), ("Krrish",**

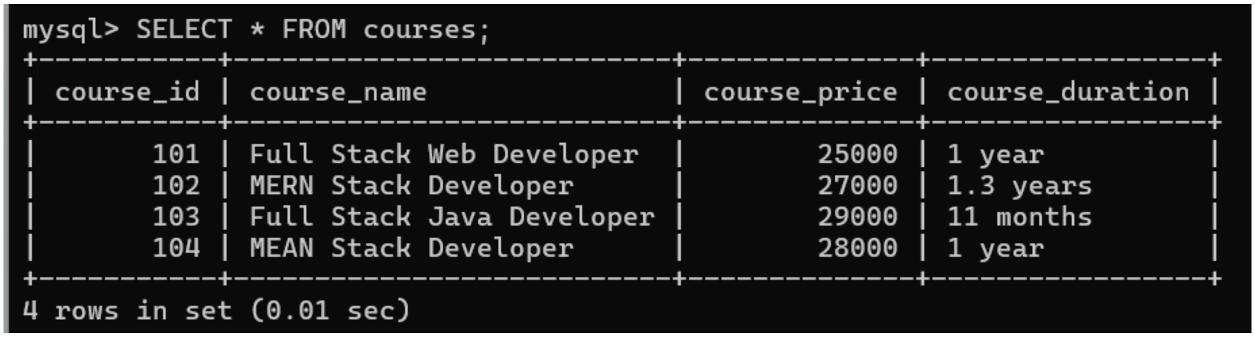
'kn011@gmail.com', '2005-09-01', '2022-09-14', 103), ("Sakshi", 'misssakshisoni2003@gmail.com', '2003-05-23', '2022-08-30', 104);



```
mysql> SELECT * FROM students;
+----+--------+------------------------------+------------+-------------------+-----------+
| id | s_name | email                        | DOB        | registration_date | course_id |
+----+--------+------------------------------+------------+-------------------+-----------+
|  1 | Payal  | payalojha888@gmail.com       | 2004-06-03 | 2022-09-15        |       101 |
|  2 | Muskan | muskandadhich14@gmail.com    | 2003-12-14 | 2022-09-20        |       102 |
|  3 | Krrish | kn011@gmail.com              | 2005-09-01 | 2022-09-14        |       103 |
|  4 | Sakshi | misssakshisoni2003@gmail.com | 2003-05-23 | 2022-08-30        |       104 |
+----+--------+------------------------------+------------+-------------------+-----------+
4 rows in set (0.01 sec)
```

13. CREATE TABLE courses (course_id int PRIMARY KEY NOT NULL, course_name VARCHAR(255), course_price INT, course_duration VARCHAR(20));

14. INSERT INTO courses (course_id, course_name, course_price, course_duration) VALUES (101, 'Full Stack Web Developer', 25000, '1 year'), (102, 'MERN Stack Developer', 27000, '1.3 years'), (103, 'Full Stack Java Developer', 29000, '11 months'), (104, 'MEAN Stack Developer', 28000 , '1 year');



```
mysql> SELECT * FROM courses;
+-----------+---------------------------+--------------+-----------------+
| course_id | course_name               | course_price | course_duration |
+-----------+---------------------------+--------------+-----------------+
|       101 | Full Stack Web Developer  |        25000 | 1 year          |
|       102 | MERN Stack Developer      |        27000 | 1.3 years       |
|       103 | Full Stack Java Developer |        29000 | 11 months       |
|       104 | MEAN Stack Developer      |        28000 | 1 year          |
+-----------+---------------------------+--------------+-----------------+
4 rows in set (0.01 sec)
```

15. ALTER TABLE students ADD COLUMN isMember boolean DEFAULT 0;

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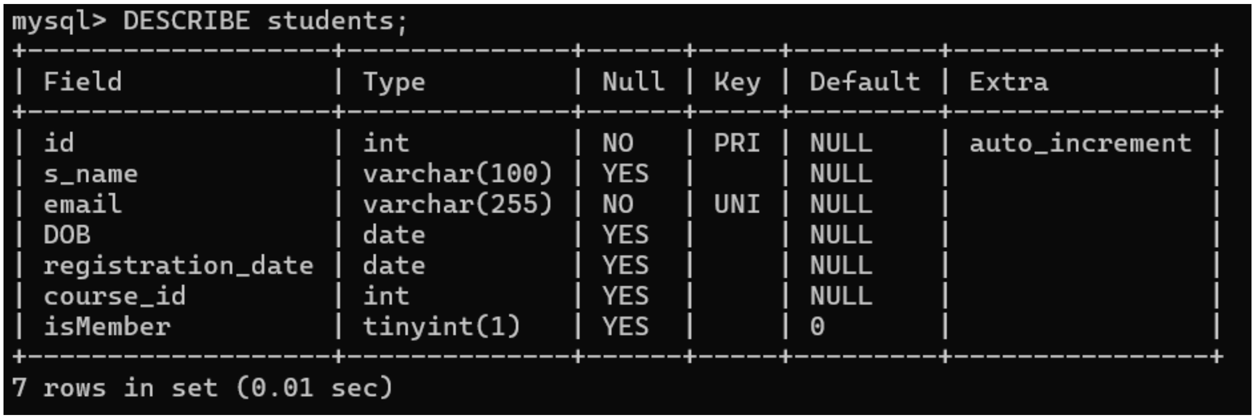
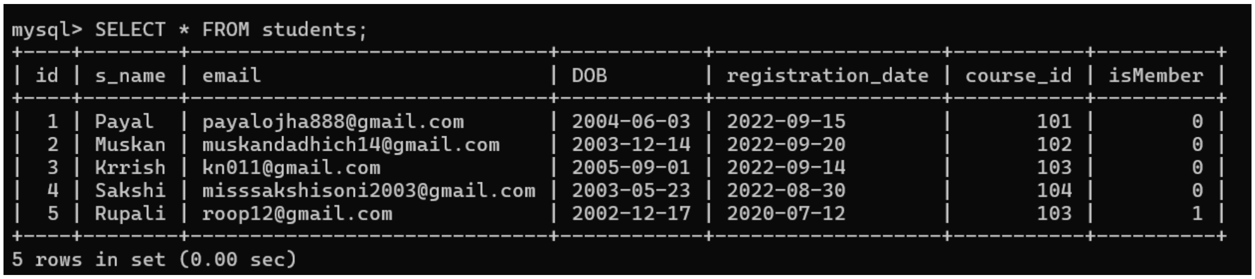


```
mysql> DESCRIBE students;
+-------------------+--------------+------+-----+---------+----------------+
| Field             | Type         | Null | Key | Default | Extra          |
+-------------------+--------------+------+-----+---------+----------------+
| id                | int          | NO   | PRI | NULL    | auto_increment |
| s_name            | varchar(100) | YES  |     | NULL    |                |
| email             | varchar(255) | NO   | UNI | NULL    |                |
| DOB               | date         | YES  |     | NULL    |                |
| registration_date | date         | YES  |     | NULL    |                |
| course_id         | int          | YES  |     | NULL    |                |
| isMember          | tinyint(1)   | YES  |     | 0       |                |
+-------------------+--------------+------+-----+---------+----------------+
7 rows in set (0.01 sec)
```

16. ALTER TABLE students ADD CONSTRAINT FOREIGN KEY(course_id) REFERENCES courses(course_id);

17. INSERT INTO students (id, s_name, email, DOB, registration_date, course_id, isMember) VALUES (5 ,'Rupali', 'roop12@gmail.com', '2002-12-17', '2020-07-12', 103, 1);



```
mysql> SELECT * FROM students;
+----+--------+------------------------------+------------+-------------------+-----------+----------+
| id | s_name | email                        | DOB        | registration_date | course_id | isMember |
+----+--------+------------------------------+------------+-------------------+-----------+----------+
|  1 | Payal  | payalojha888@gmail.com       | 2004-06-03 | 2022-09-15        |       101 |        0 |
|  2 | Muskan | muskandadhich14@gmail.com    | 2003-12-14 | 2022-09-20        |       102 |        0 |
|  3 | Krrish | kn011@gmail.com              | 2005-09-01 | 2022-09-14        |       103 |        0 |
|  4 | Sakshi | misssakshisoni2003@gmail.com | 2003-05-23 | 2022-08-30        |       104 |        0 |
|  5 | Rupali | roop12@gmail.com             | 2002-12-17 | 2020-07-12        |       103 |        1 |
+----+--------+------------------------------+------------+-------------------+-----------+----------+
5 rows in set (0.00 sec)
```

18. CREATE TABLE teachers(id int primary key auto_increment, name varchar(100), phone_number varchar(10), email varchar(255) UNIQUE, sub_id INT, dept_id int , isIdCardIssued enum('Yes', 'No') Default 'No');

19. CREATE TABLE departments (dept_id int primary key auto_increment, dept_name varchar(200));

20. INSERT INTO departments (dept_id, dept_name) VALUES (1001, 'IT'), (1002, 'CSE'), (1003, 'Civil'), (1004, 'Mechanical'), (1005, 'Robotics'), (1006, 'Electronics');

21. INSERT INTO teachers (id, name, phone_number, email, sub_id, dept_id, isIdcardIssued) VALUES (1, 'Suresh', '5762387849', 'suresh@gmail.com', 501, 1003, 'No');

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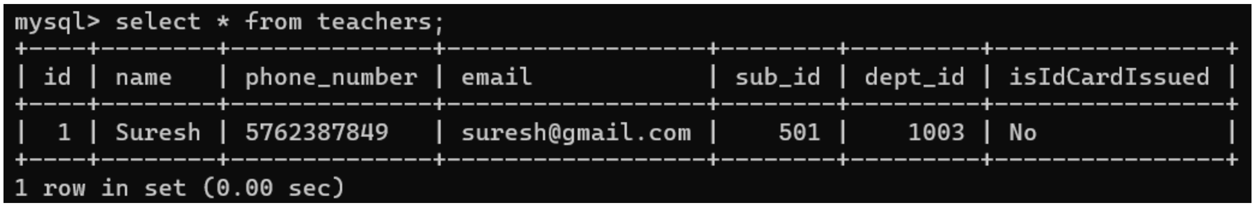
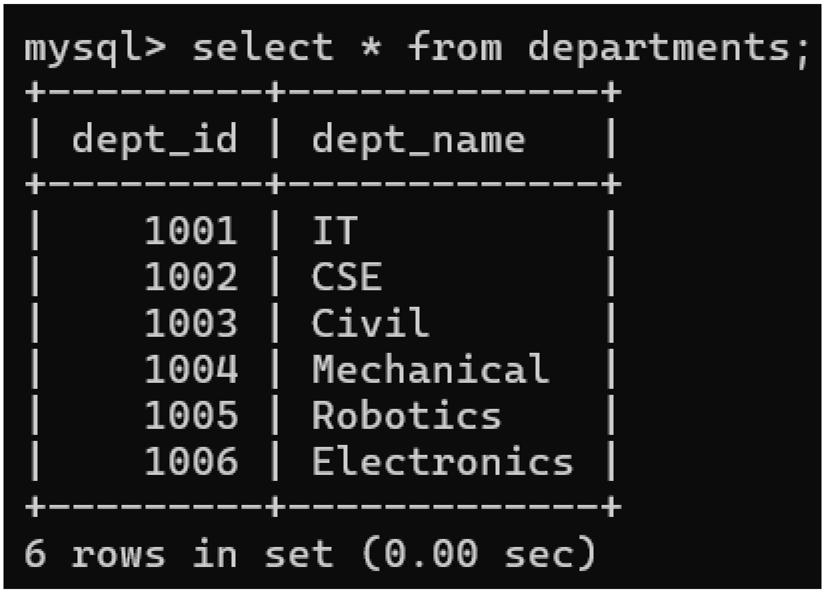


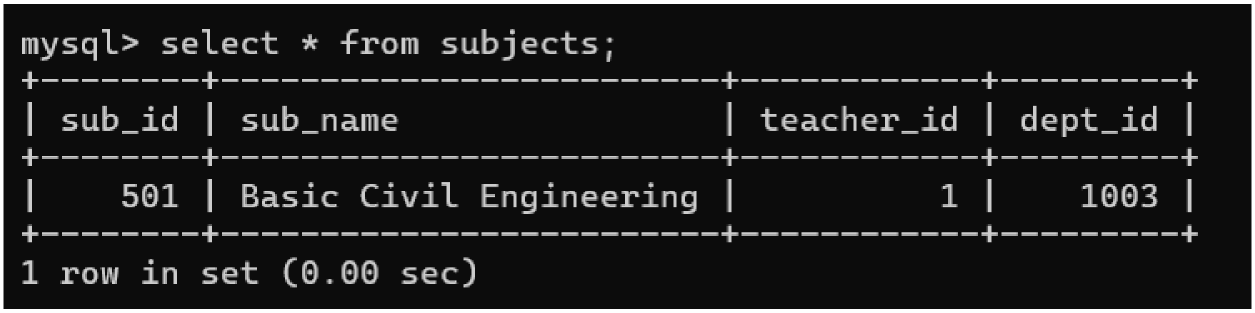
```
mysql> select * from teachers;
+----+--------+--------------+------------------+--------+---------+----------------+
| id | name   | phone_number | email            | sub_id | dept_id | isIdCardIssued |
+----+--------+--------------+------------------+--------+---------+----------------+
|  1 | Suresh | 5762387849   | suresh@gmail.com |    501 |    1003 | No             |
+----+--------+--------------+------------------+--------+---------+----------------+
1 row in set (0.00 sec)
```



```
mysql> select * from departments;
+---------+-------------+
| dept_id | dept_name   |
+---------+-------------+
|    1001 | IT          |
|    1002 | CSE         |
|    1003 | Civil       |
|    1004 | Mechanical  |
|    1005 | Robotics    |
|    1006 | Electronics |
+---------+-------------+
6 rows in set (0.00 sec)
```

22. CREATE TABLE subjects(sub_id int primary key auto_increment, sub_name varchar(100), teacher_id int, dept_id int not null, FOREIGN KEY(teacher_id) REFERENCES teachers(id));

23. INSERT INTO subjects VALUES (501, 'Basic Civil Engineering', 1, 1003);



```
mysql> select * from subjects;
+--------+-------------------------+------------+---------+
| sub_id | sub_name                | teacher_id | dept_id |
+--------+-------------------------+------------+---------+
|    501 | Basic Civil Engineering |          1 |    1003 |
+--------+-------------------------+------------+---------+
1 row in set (0.00 sec)
```

24. ALTER TABLE students RENAME IndianStudents;

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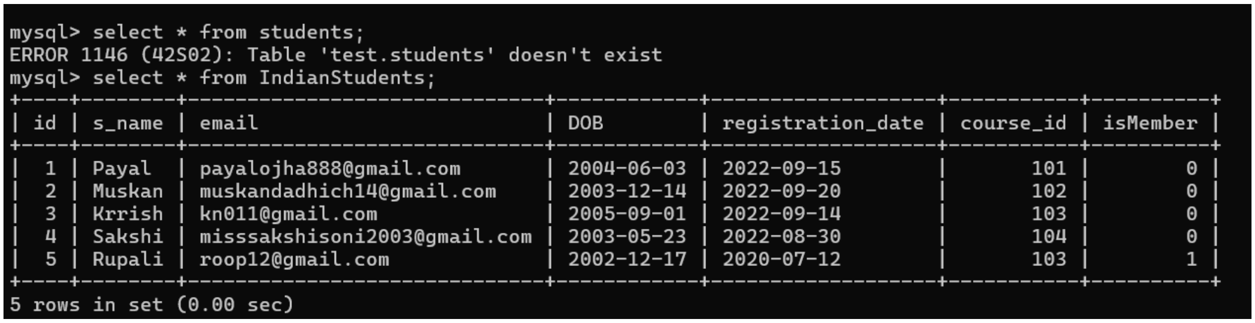
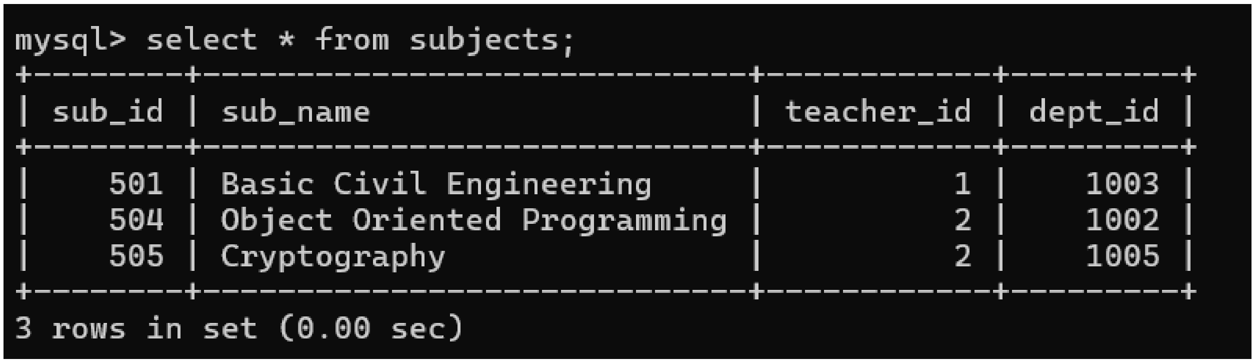


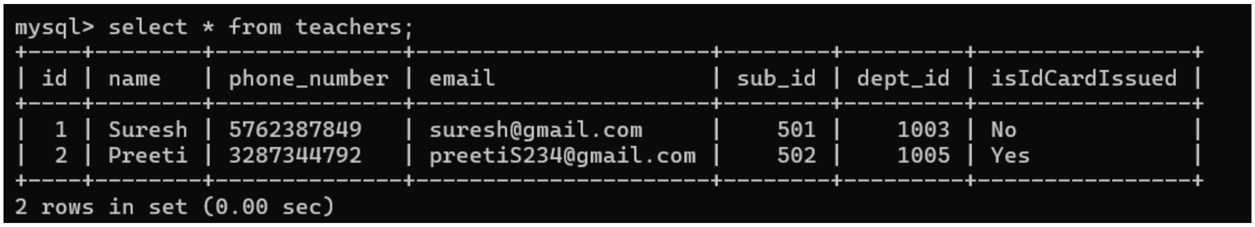
```
mysql> select * from students;
ERROR 1146 (42S02): Table 'test.students' doesn't exist
mysql> select * from IndianStudents;
+----+--------+------------------------------+------------+-------------------+-----------+----------+
| id | s_name | email                        | DOB        | registration_date | course_id | isMember |
+----+--------+------------------------------+------------+-------------------+-----------+----------+
|  1 | Payal  | payalojha888@gmail.com       | 2004-06-03 | 2022-09-15        |       101 |        0 |
|  2 | Muskan | muskandadhich14@gmail.com    | 2003-12-14 | 2022-09-20        |       102 |        0 |
|  3 | Krrish | kn011@gmail.com              | 2005-09-01 | 2022-09-14        |       103 |        0 |
|  4 | Sakshi | misssakshisoni2003@gmail.com | 2003-05-23 | 2022-08-30        |       104 |        0 |
|  5 | Rupali | roop12@gmail.com             | 2002-12-17 | 2020-07-12        |       103 |        1 |
+----+--------+------------------------------+------------+-------------------+-----------+----------+
5 rows in set (0.00 sec)
```

25.   INSERT INTO teachers (id, name, phone_number, email, sub_id, dept_id, isIdCardIssued) VALUES (2, 'Preeti', '3287344792', 'preetiS234@gmail.com', 502, 1005, 1);

26. INSERT INTO subjects (sub_name, teacher_id, dept_id) VALUES ('Object Oriented Programming', 2, 1002), ('Cryptography', 2, 1005);



```
mysql> select * from subjects;
+--------+-----------------------------+------------+---------+
| sub_id | sub_name                    | teacher_id | dept_id |
+--------+-----------------------------+------------+---------+
|    501 | Basic Civil Engineering     |          1 |    1003 |
|    504 | Object Oriented Programming |          2 |    1002 |
|    505 | Cryptography                |          2 |    1005 |
+--------+-----------------------------+------------+---------+
3 rows in set (0.00 sec)
```



```
mysql> select * from teachers;
+----+--------+--------------+----------------------+--------+---------+----------------+
| id | name   | phone_number | email                | sub_id | dept_id | isIdCardIssued |
+----+--------+--------------+----------------------+--------+---------+----------------+
|  1 | Suresh | 5762387849   | suresh@gmail.com     |    501 |    1003 | No             |
|  2 | Preeti | 3287344792   | preetiS234@gmail.com |    502 |    1005 | Yes            |
+----+--------+--------------+----------------------+--------+---------+----------------+
2 rows in set (0.00 sec)
```

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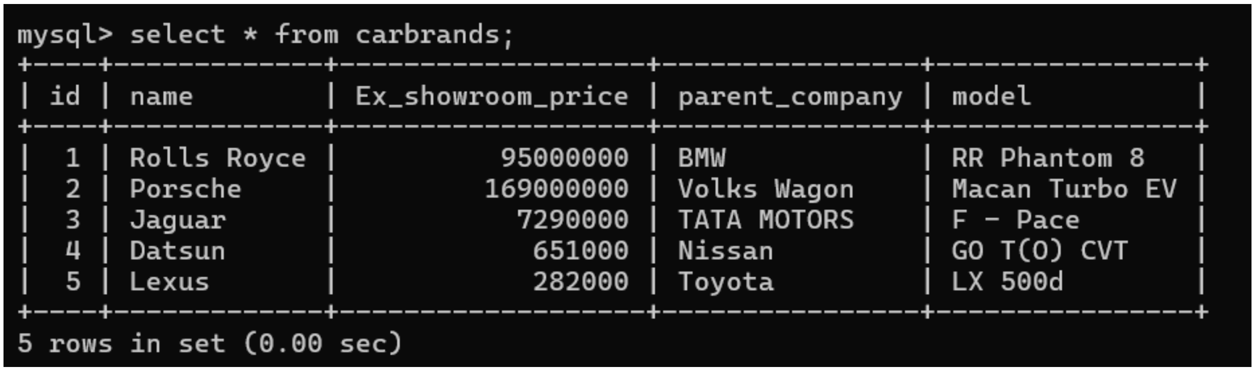
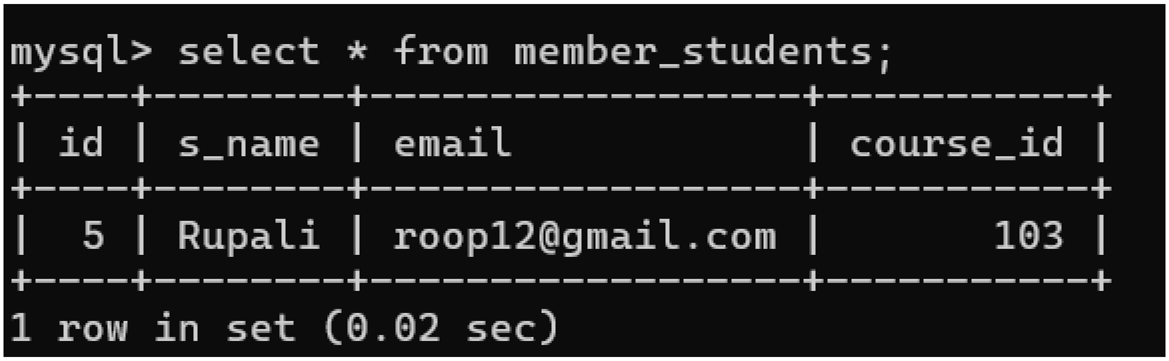
27. **ALTER TABLE subjects DROP FOREIGN KEY subjects_ibfk_1;**

28. **ALTER TABLE carbrands DROP COLUMN launch_date;**



```
mysql> select * from carbrands;
+----+-------------+-------------------+----------------+----------------+
| id | name        | Ex_showroom_price | parent_company | model          |
+----+-------------+-------------------+----------------+----------------+
|  1 | Rolls Royce |          95000000 | BMW            | RR Phantom 8   |
|  2 | Porsche     |         169000000 | Volks Wagon    | Macan Turbo EV |
|  3 | Jaguar      |           7290000 | TATA MOTORS    | F - Pace       |
|  4 | Datsun      |            651000 | Nissan         | GO T(O) CVT    |
|  5 | Lexus       |            282000 | Toyota         | LX 500d        |
+----+-------------+-------------------+----------------+----------------+
5 rows in set (0.00 sec)
```

29. **CREATE VIEW member_students AS SELECT id, s_name, email, course_id FROM IndianStudents WHERE isMember=1;**



```
mysql> select * from member_students;
+----+--------+-------------------+-----------+
| id | s_name | email             | course_id |
+----+--------+-------------------+-----------+
|  5 | Rupali | roop12@gmail.com  |       103 |
+----+--------+-------------------+-----------+
1 row in set (0.02 sec)
```

30. **CREATE VIEW student_view AS SELECT s.id, s.s_name, s.course_id FROM IndianStudents s JOIN courses c WHERE s.course_id=c.course_id;**

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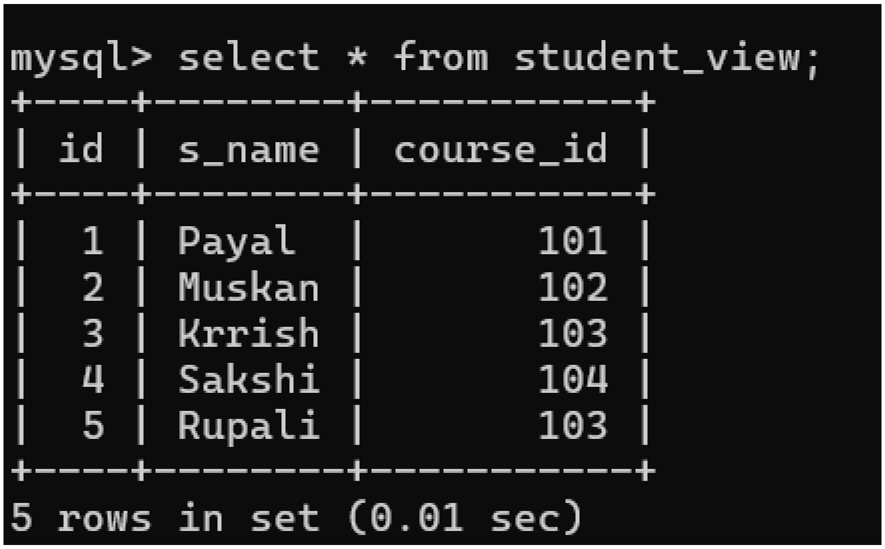
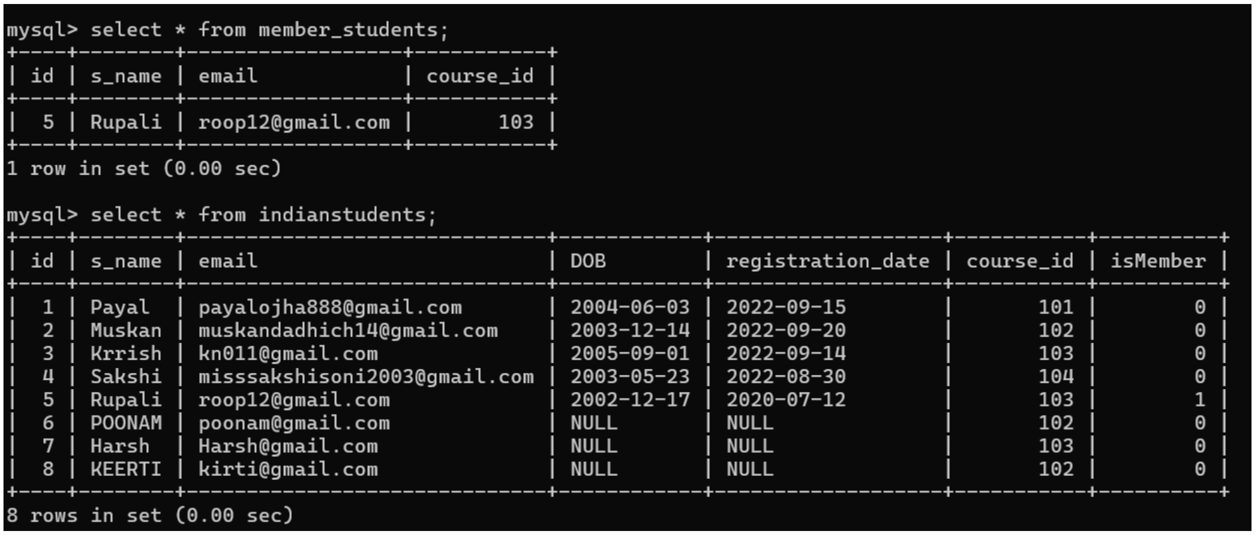


```
mysql> select * from student_view;
+----+--------+-----------+
| id | s_name | course_id |
+----+--------+-----------+
|  1 | Payal  |       101 |
|  2 | Muskan |       102 |
|  3 | Krrish |       103 |
|  4 | Sakshi |       104 |
|  5 | Rupali |       103 |
+----+--------+-----------+
5 rows in set (0.01 sec)
```

31. INSERT INTO member_students(id, s_name, email, course_id) VALUES (6, 'POONAM', 'poonam@gmail.com', 102);

32. INSERT INTO member_students(id, s_name, email, course_id) VALUES (7, 'Harsh', 'Harsh@gmail.com', 103), (8, 'KEERTI', 'kirti@gmail.com', 102);



```
mysql> select * from member_students;
+----+--------+------------------+-----------+
| id | s_name | email            | course_id |
+----+--------+------------------+-----------+
|  5 | Rupali | roop12@gmail.com |       103 |
+----+--------+------------------+-----------+
1 row in set (0.00 sec)

mysql> select * from indianstudents;
+----+--------+------------------------------+------------+-------------------+-----------+----------+
| id | s_name | email                        | DOB        | registration_date | course_id | isMember |
+----+--------+------------------------------+------------+-------------------+-----------+----------+
|  1 | Payal  | payalojha888@gmail.com       | 2004-06-03 | 2022-09-15        |       101 |        0 |
|  2 | Muskan | muskandadhich14@gmail.com    | 2003-12-14 | 2022-09-20        |       102 |        0 |
|  3 | Krrish | kn011@gmail.com              | 2005-09-01 | 2022-09-14        |       103 |        0 |
|  4 | Sakshi | misssakshisoni2003@gmail.com | 2003-05-23 | 2022-08-30        |       104 |        0 |
|  5 | Rupali | roop12@gmail.com             | 2002-12-17 | 2020-07-12        |       103 |        1 |
|  6 | POONAM | poonam@gmail.com             | NULL       | NULL              |       102 |        0 |
|  7 | Harsh  | Harsh@gmail.com              | NULL       | NULL              |       103 |        0 |
|  8 | KEERTI | kirti@gmail.com              | NULL       | NULL              |       102 |        0 |
+----+--------+------------------------------+------------+-------------------+-----------+----------+
8 rows in set (0.00 sec)
```

33. CREATE TABLE products(prod_id int primary key, prod_name varchar(255), price int, status enum('Available', 'Unavailable'), remaining_pieces int, shopping_app_id int);

34.   ALTER TABLE products ADD COLUMN category varchar(100);

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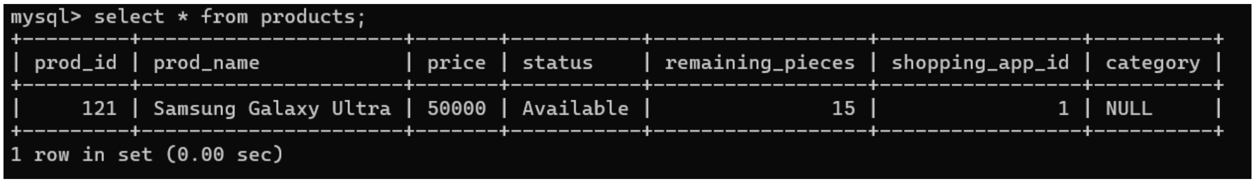
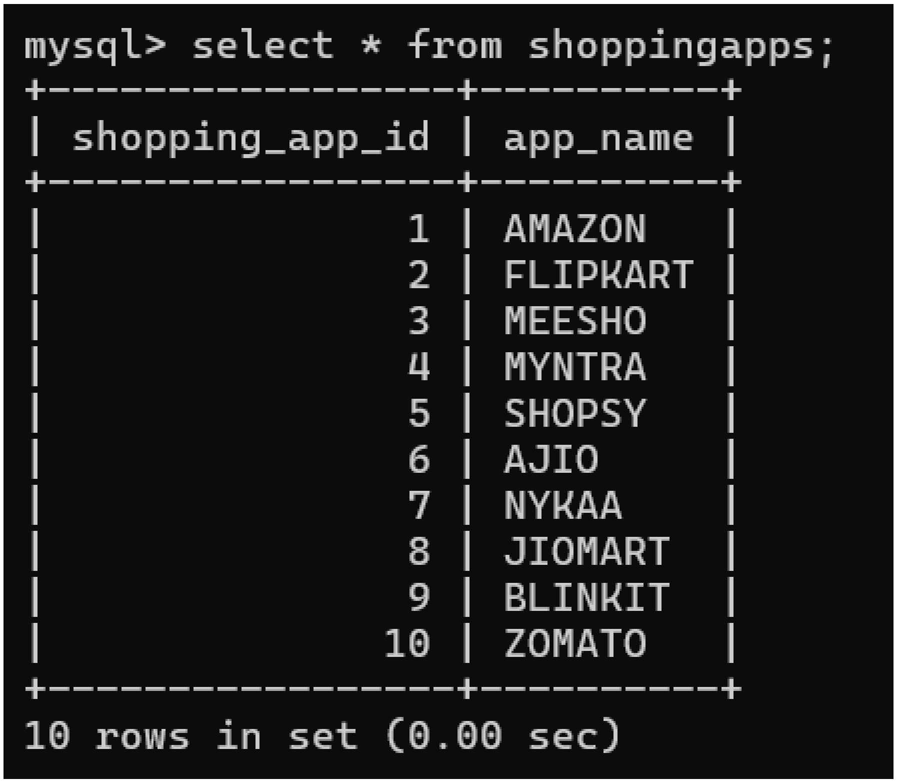
35. INSERT INTO products (prod_id, prod_name, price, status, remaining_pieces, shopping_app_id) VALUES (121, 'Samsung Galaxy Ultra', 50000, 'Available', 15, 01);



```
mysql> select * from products;
+---------+----------------------+-------+-----------+------------------+-----------------+----------+
| prod_id | prod_name            | price | status    | remaining_pieces | shopping_app_id | category |
+---------+----------------------+-------+-----------+------------------+-----------------+----------+
|     121 | Samsung Galaxy Ultra | 50000 | Available |               15 |               1 | NULL     |
+---------+----------------------+-------+-----------+------------------+-----------------+----------+
1 row in set (0.00 sec)
```

36. CREATE TABLE shoppingapps (shopping_app_id TINYINT(2) primary key, app_name varchar(255));

37. INSERT INTO shoppingapps(shopping_app_id, app_name) VALUES (01, 'AMAZON'), (02, 'FLIPKART'), (03, 'MEESHO'), (04, 'MYNTRA'), (05, 'SHOPSY'), (06, 'AJIO'), (07, 'NYKAA'), (08, 'JIOMART'), (09, 'BLINKIT'), (10, 'ZOMATO');



```
mysql> select * from shoppingapps;
+-----------------+----------+
| shopping_app_id | app_name |
+-----------------+----------+
|               1 | AMAZON   |
|               2 | FLIPKART |
|               3 | MEESHO   |
|               4 | MYNTRA   |
|               5 | SHOPSY   |
|               6 | AJIO     |
|               7 | NYKAA    |
|               8 | JIOMART  |
|               9 | BLINKIT  |
|              10 | ZOMATO   |
+-----------------+----------+
10 rows in set (0.00 sec)
```

38. ALTER TABLE shoppingapps MODIFY COLUMN shopping_app_id INT AUTO_INCREMENT;

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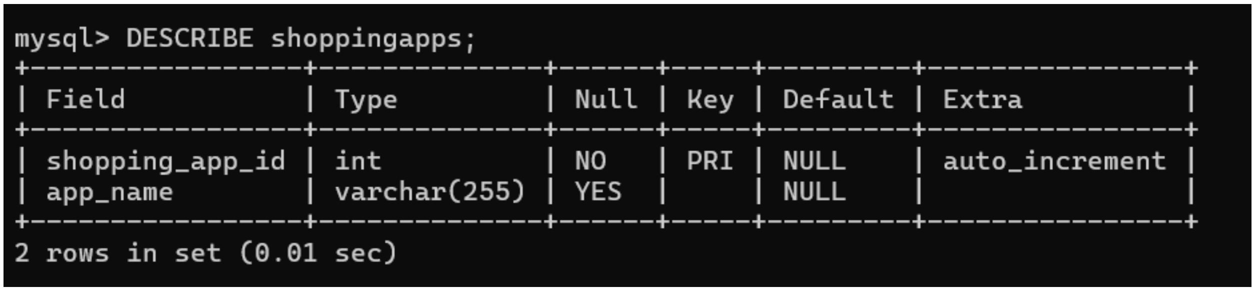
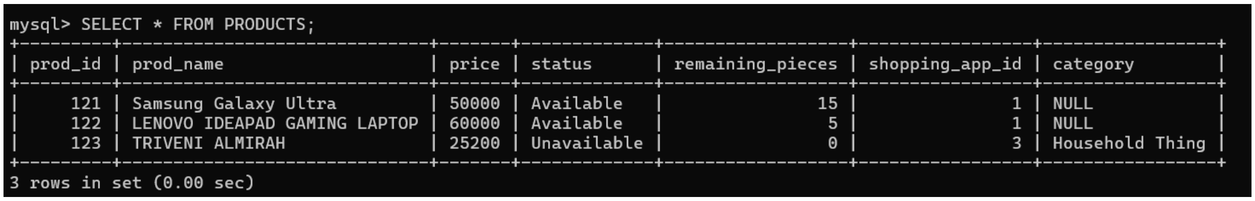


```
mysql> DESCRIBE shoppingapps;
+-----------------+--------------+------+-----+---------+----------------+
| Field           | Type         | Null | Key | Default | Extra          |
+-----------------+--------------+------+-----+---------+----------------+
| shopping_app_id | int          | NO   | PRI | NULL    | auto_increment |
| app_name        | varchar(255) | YES  |     | NULL    |                |
+-----------------+--------------+------+-----+---------+----------------+
2 rows in set (0.01 sec)
```

39. INSERT INTO products (prod_id, prod_name, price, status, remaining_pieces, shopping_app_id) VALUES (122, 'LENOVO IDEAPAD GAMING LAPTOP', 60000, 'AVAILABLE', 5, 01);

40. INSERT INTO products (prod_id, prod_name, price, status, remaining_pieces, shopping_app_id, category) VALUES (123, 'TRIVENI ALMIRAH', 25200, 'Unavailable', 00, 03, 'Household Thing');



```
mysql> SELECT * FROM PRODUCTS;
+---------+------------------------------+-------+-------------+------------------+-----------------+-----------------+
| prod_id | prod_name                    | price | status      | remaining_pieces | shopping_app_id | category        |
+---------+------------------------------+-------+-------------+------------------+-----------------+-----------------+
|     121 | Samsung Galaxy Ultra         | 50000 | Available   |               15 |               1 | NULL            |
|     122 | LENOVO IDEAPAD GAMING LAPTOP | 60000 | Available   |                5 |               1 | NULL            |
|     123 | TRIVENI ALMIRAH              | 25200 | Unavailable |                0 |               3 | Household Thing |
+---------+------------------------------+-------+-------------+------------------+-----------------+-----------------+
3 rows in set (0.00 sec)
```

41. CREATE TABLE USERS(userid int primary key auto_increment, username varchar(200), password varchar(8), role varchar(10));

42. INSERT INTO users (username, password, role) VALUES ('payal', 'p@2004', 'Student'), ('sujal', 's@123', 'Manager'), ('Kanha', 'K@011', 'HR'), ('Modak', 'mo@145', 'Admin');

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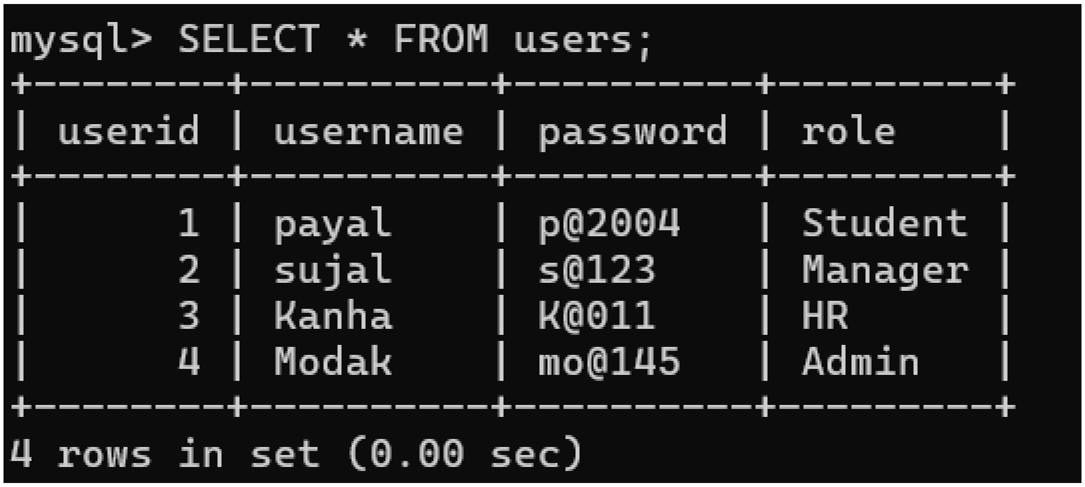
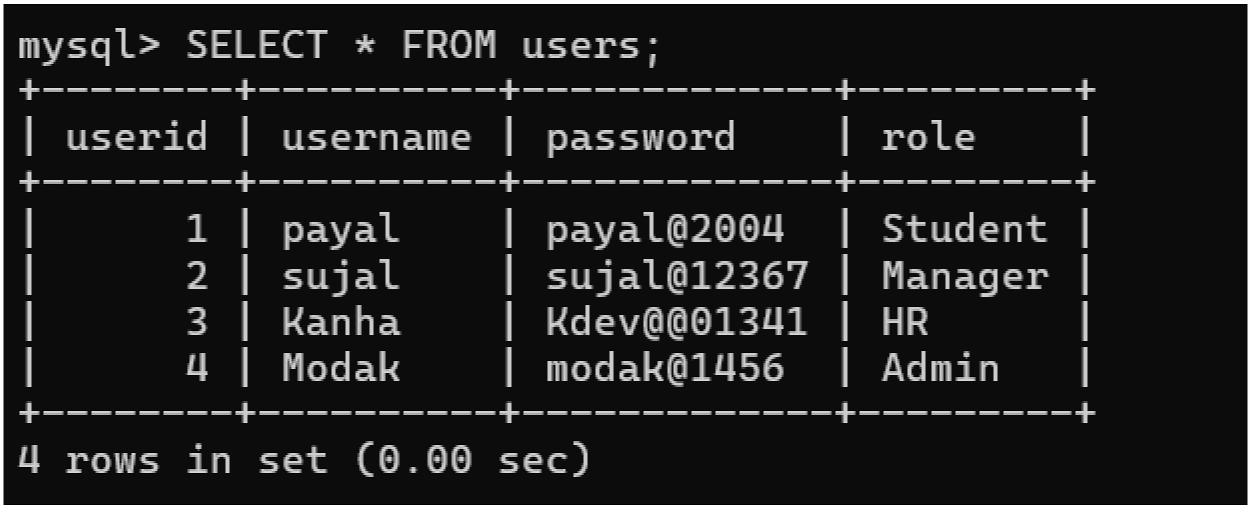


```
mysql> SELECT * FROM users;
+--------+----------+----------+---------+
| userid | username | password | role    |
+--------+----------+----------+---------+
|      1 | payal    | p@2004   | Student |
|      2 | sujal    | s@123    | Manager |
|      3 | Kanha    | K@011    | HR      |
|      4 | Modak    | mo@145   | Admin   |
+--------+----------+----------+---------+
4 rows in set (0.00 sec)
```

43. ALTER TABLE users MODIFY COLUMN password VARCHAR(255);

44. ALTER TABLE users ADD CONSTRAINT check_length CHECK(CHAR_LENGTH(password) >= 8);

45. INSERT INTO users (username, password, role) VALUES ('payal', 'payal@2004', 'Student'), ('sujal', 'sujal@12367', 'Manager'), ('Kanha', 'Kdev@@01341', 'HR'), ('Modak', 'modak@1456', 'Admin');



```
mysql> SELECT * FROM users;
+--------+----------+-------------+---------+
| userid | username | password    | role    |
+--------+----------+-------------+---------+
|      1 | payal    | payal@2004  | Student |
|      2 | sujal    | sujal@12367 | Manager |
|      3 | Kanha    | Kdev@@01341 | HR      |
|      4 | Modak    | modak@1456  | Admin   |
+--------+----------+-------------+---------+
4 rows in set (0.00 sec)
```

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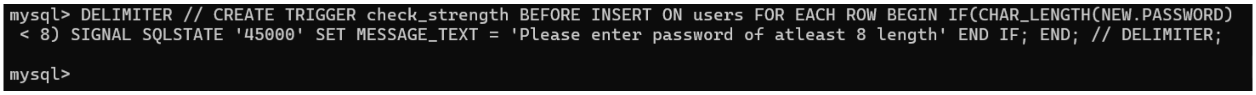
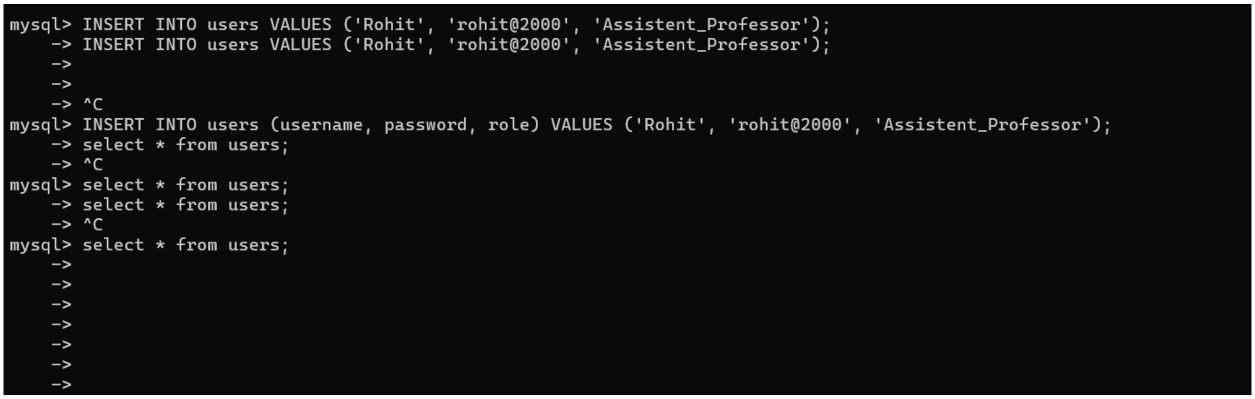
```
46.  DELIMITER //
        CREATE TRIGGER check_strength
        BEFORE INSERT ON users FOR EACH ROW
        BEGIN
            IF(CHAR_LENGTH(NEW.PASSWORD) < 8)
                    SIGNAL SQLSTATE '45000'
                    SET MESSAGE_TEXT = 'Please enter password of atleast 8 length'
            END IF;
        END;
       //
   DELIMITER;
```



```
mysql> DELIMITER // CREATE TRIGGER check_strength BEFORE INSERT ON users FOR EACH ROW BEGIN IF(CHAR_LENGTH(NEW.PASSWORD)
 < 8) SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Please enter password of atleast 8 length' END IF; END; // DELIMITER;

mysql>
```



```
mysql> INSERT INTO users VALUES ('Rohit', 'rohit@2000', 'Assistent_Professor');
    -> INSERT INTO users VALUES ('Rohit', 'rohit@2000', 'Assistent_Professor');
    ->
    ->
    -> ^C
mysql> INSERT INTO users (username, password, role) VALUES ('Rohit', 'rohit@2000', 'Assistent_Professor');
    -> select * from users;
    -> ^C
mysql> select * from users;
    -> select * from users;
    -> ^C
mysql> select * from users;
    ->
    ->
    ->
    ->
    ->
    ->
    ->
```

47. CREATE TABLE books(id int primary key auto_increment, bookname varchar(255), author varchar(200), edition varchar(20), price int, availableOn varchar(20), language varchar(20));

48. Insert into books VALUES (1, 'To Kill a Mockingbird', 'Harper Lee', 'IV', 250, 'amazon', 'english');

49.   INSERT INTO books (bookname, author, edition, price, availableOn, language) VALUES ('Shrimad Bhagavad Gita', 'Ved Vyas Ji', 'latest', 550, 'all shopping apps', 'Sanskrit'),('Feluda Samagra', 'Satyajit Ray', '3.0', 350, 'flipkart and amazon', 'Bengali');

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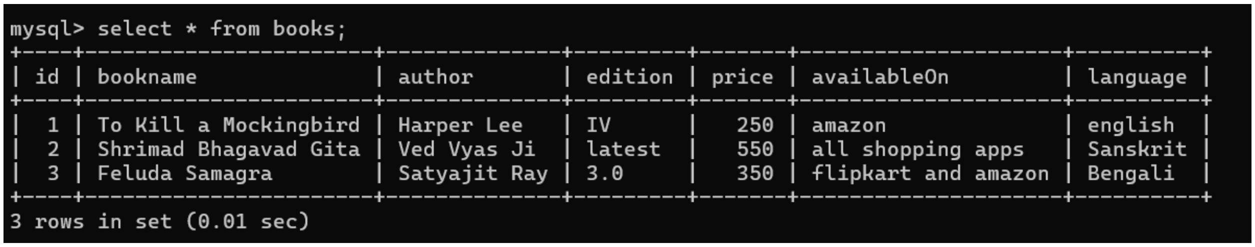
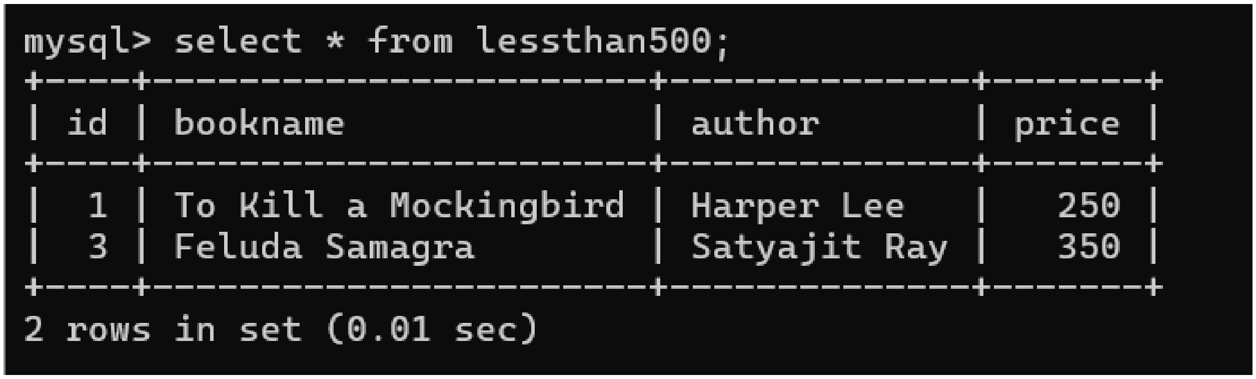


```
mysql> select * from books;
+----+-----------------------+--------------+---------+-------+---------------------+----------+
| id | bookname              | author       | edition | price | availableOn         | language |
+----+-----------------------+--------------+---------+-------+---------------------+----------+
|  1 | To Kill a Mockingbird | Harper Lee   | IV      |   250 | amazon              | english  |
|  2 | Shrimad Bhagavad Gita | Ved Vyas Ji  | latest  |   550 | all shopping apps   | Sanskrit |
|  3 | Feluda Samagra        | Satyajit Ray | 3.0     |   350 | flipkart and amazon | Bengali  |
+----+-----------------------+--------------+---------+-------+---------------------+----------+
3 rows in set (0.01 sec)
```

50. CREATE VIEW lessthan500 AS SELECT id, bookname, author, price FROM books b WHERE price<=500;



```
mysql> select * from lessthan500;
+----+-----------------------+--------------+-------+
| id | bookname              | author       | price |
+----+-----------------------+--------------+-------+
|  1 | To Kill a Mockingbird | Harper Lee   |   250 |
|  3 | Feluda Samagra        | Satyajit Ray |   350 |
+----+-----------------------+--------------+-------+
2 rows in set (0.01 sec)
```