1)**Create 3 tables named students,department,year**

1)department table:

Query:

CREATE TABLE department (department_id INT PRIMARY KEY,name VARCHAR(100));

Query OK, 0 rows affected (0.03 sec)

2)year table:

Query:

CREATE TABLE year (year_id INT PRIMARY KEY,year_name VARCHAR(20));

Query OK, 0 rows affected (0.06 sec)

3)student table:

Query:

CREATE TAB student_id INT PRIMARY KEY, name VARCHAR(100), department_id INT,year_id INT, FOREIGN KEY (department_id) REFERENCES department(department_id), FOREIGN KEY (year_id) REFERENCES year(year_id));

Query OK, 0 rows affected (0.06 sec)

2)**inserting records into the student table:**

INSERT INTO students (student_id, name, department_id, year_id)

VALUES

Computer Science Students

(1, 'Alice Johnson', 1, 1),

(2, 'Bob Smith', 1, 2),

(3, 'Carol White', 1, 3),

(4, 'David Brown', 1, 4),

(5, 'Eve Davis', 1, 2),

Electrical Engineering Students

(6, 'Frank Black', 2, 1),

(7, 'Grace Green', 2, 2),

(8, 'Hank Hill', 2, 3),

(9, 'Ivy Blue', 2, 4),

(10, 'Jack Grey', 2, 2),

Mechanical Engineering Students

(11, 'Kate King', 3, 1),

(12, 'Leo Scott', 3, 2),

(13, 'Mia Lee', 3, 3),

(14, 'Nina Young', 3, 4),

(15, 'Owen Parker', 3, 2);

Values are inserted into the student table.

3) write a query to display students from CSE department:

Query:

SELECT *FROM students WHERE department_id = 1;

Output:

student_id | name | department_id | year_id

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1 | Alice Johnson| 1 | 1

2 | Bob Smith | 1 | 2

3 | Carol White | 1 | 3

4 | David Brown | 1 | 4

5 | Eve Davis | 1 | 2

4)write a query to display only deptname using student table:

Query:

SELECT DISTINCT d.name AS department_name FROM students s JOIN department d ON s.department_id = d.department_id;

Output:

department_name

Computer Science

Electrical Engineering

Mechanical Engineering

5)write a query to display students sorted by dept and firstname:

Query:

```
SELECT s.student_id, s.name, d.name AS department_name, y.year_name
FROM students s
JOIN department d ON s.department_id = d.department_id
JOIN year y ON s.year_id = y.year_id
ORDER BY d.name, s.name;
```

Output:

```
student_id | name         | department_name         | year_name
-----------------------------------------------------------------
1          | Alice Johnson| Computer Science        | Freshman
2          | Bob Smith    | Computer Science        | Sophomore
3          | Carol White  | Computer Science        | Junior
4          | David Brown  | Computer Science        | Senior
5          | Eve Davis    | Computer Science        | Sophomore
6          | Frank Black  | Electrical Engineering  | Freshman
7          | Grace Green  | Electrical Engineering  | Sophomore
8          | Hank Hill    | Electrical Engineering  | Junior
9          | Ivy Blue     | Electrical Engineering  | Senior
10         | Jack Grey    | Electrical Engineering  | Sophomore
11         | Kate King    | Mechanical Engineering  | Freshman
12         | Leo Scott    | Mechanical Engineering  | Sophomore
13         | Mia Lee      | Mechanical Engineering  | Junior
14         | Nina Young   | Mechanical Engineering  | Senior
15         | Owen Parker  | Mechanical Engineering  | Sophomore
```