Manav Shah

01:

1.

- Create the tables below in the database. Use foreign keys and primary keys as required.
- Create a table called as student with the following columns student_id, first_name, last_name, birthdate, department id, address id.
- b. Create Address table with following columns address_id, street_address, city, State, postal_code
- c. Create department table department_id, department name. Make sure you are using the right data type against all the columns.

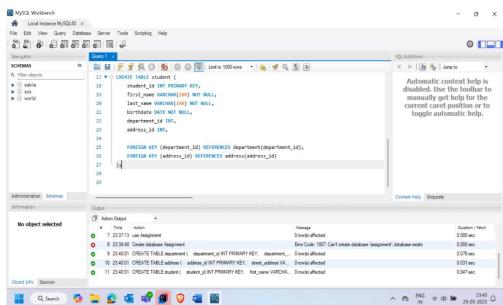
Create database Assignment;
use Assignment;

CREATE TABLE department (
 department_id INT PRIMARY KEY,
 department_name VARCHAR(100) NOT NULL
);

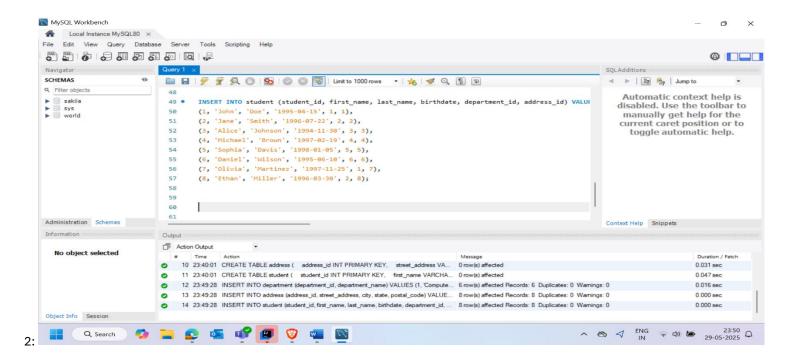
CREATE TABLE address (
address_id INT PRIMARY KEY,
street_address VARCHAR(150),
city VARCHAR(100),
state VARCHAR(50),
postal_code VARCHAR(20)
);

CREATE TABLE student (
student_id INT PRIMARY KEY,
first_name VARCHAR(100) NOT NULL,
last_name VARCHAR(100) NOT NULL,
birthdate DATE NOT NULL,
department_id INT,
address_id INT,

);



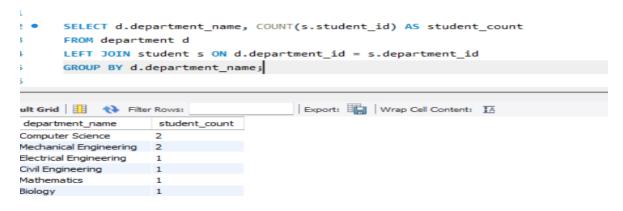
FOREIGN KEY (department_id) REFERENCES department(department_id), FOREIGN KEY (address_id) REFERENCES address(address_id)



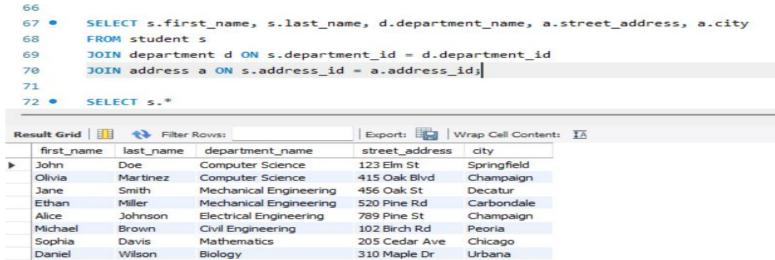
Write a query to find the total number of students.

Write a query to find which department john belongs to.

List All Departments with Their Number of Students (Including Departments with No Students)



6. Select all students with their departm



Find all students who are in the 'Computer Science' department



8. Update Jane's city name to New York.



9. Delete a student from the student table.

```
DELETE FROM student
WHERE student_id = 8; -- Replace with desired student_id
```

10. Select all students with their department and address in New York.

```
SELECT s.first_name, s.last_name, d.department_name, a.city

FROM student s

Basilian Join department d ON s.department_id = d.department_id

Join address a ON s.address_id = a.address_id

WHERE a.city = 'New York';

Plant Grid  Filter Rows: Export: Wrap Cell Content: Amburgan Filter Rows: Export: Amburgan F
```

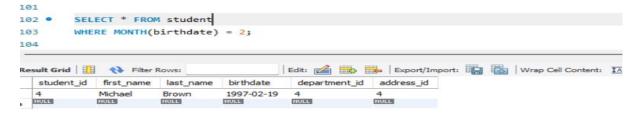
11. Count how many students are in each department

```
SELECT d.department_name, COUNT(s.student_id) AS student_count
92 •
        FROM department d
94
        LEFT JOIN student s ON d.department_id = s.department_id
        GROUP BY d.department_name;
95
Export: Wrap Cell Content: IA
  department_name
                     student_count
  Computer Science
  Mechanical Engineering 1
  Electrical Engineering
                  1
  Civil Engineering
  Mathematics
  Biology
```

12. Find students who live in 'Springfield'



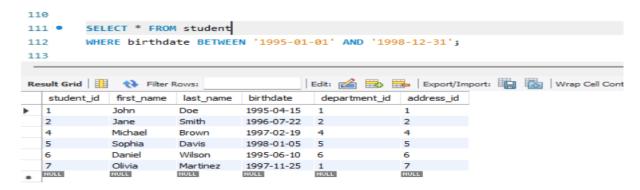
13. Select students whose birthday falls in February



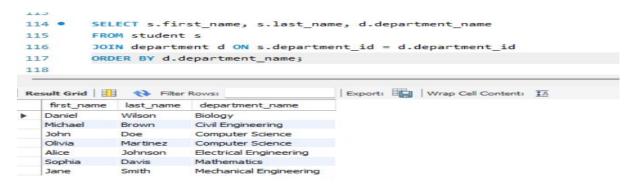
14. Get the department and address details for a specific student, example john

```
104
105 •
        SELECT d.department_name, a.*
       FROM student s
       JOIN department d ON s.department_id = d.department_id
107
        JOIN address a ON s.address_id = a.address_id
108
        WHERE s.first_name = 'John';
109
110
                                     Export: Wrap Cell Content: IA
department_name address_id street_address city state postal_code
                        123 Elm St
 Computer Science 1
                                      Springfield
                                              TI
```

15. Find all students who are born within 1995 to 1998



16. List all students and their corresponding department names, sorted by department



17. Find the number of students in each department who are living in 'Champaign' SELECT d.department_name, COUNT(s.student_id) AS student_count 119 • FROM student s 120 JOIN department d ON s.department_id = d.department_id 121 JOIN address a ON s.address_id = a.address_id 122 WHERE a.city = 'Champaign' 123 GROUP BY d.department_name; 124 125 Export: Wrap Cell Content: IA department name student count Electrical Engineering Computer Science 18. Retrieve the names of students who live on 'Pine' street 125 SELECT s.first_name, s.last_name 126 • FROM student s 127 128 JOIN address a ON s.address_id = a.address_id WHERE a.street_address LIKE '%Pine%'; 129 130 Export: Wrap Cell Content: IA first_name last_name Alice Johnson

19. Update the department of a student with student_id = 6 to 'Mechanical Engineering'

```
UPDATE student

SET department_id = (
    SELECT department_id FROM department
    WHERE department_name = 'Mechanical Engineering'
)
WHERE student_id = 6;
```

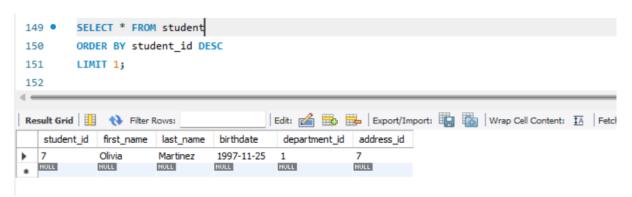
20. Find the student(s) who live in the city 'Chicago' and are in the 'Mathematics' department

```
...
         SELECT s.*
138
         FROM student s
139
         JOIN department d ON s.department_id = d.department_id
140
         JOIN address a ON s.address id = a.address id
141
         WHERE d.department_name = 'Mathematics' AND a.city = 'Chicago';
142
143
Result Grid 🔢 🚷 Filter Rows:
                                             Export: Wrap Cell Content: IA
   student id
             first name
                        last_name
                                              department id
                                   birthdate
                                                            address id
             Sophia
  5
                                  1998-01-05
                                              5
                                                            5
                        Davis
```

21. List all students who have an address in 'Urbana' or 'Peoria'

```
143
144
         SELECT s.*
145
         FROM student s
         JOIN address a ON s.address_id = a.address_id
         WHERE a.city IN ('Urbana', 'Peoria');
Result Grid
             Filter Rows:
                                           Export: Wrap Cell Content:
   student_id
              first_name
                       last_name
                                              department_id
                                                           address_id
             Michael
                       Brown
                                  1997-02-19
  6
            Daniel
                     Wilson
                                 1995-06-10 2
```

22. Find the student with the highest student_id



23. Find all students who are not in the 'Computer Science' department

```
SELECT s.*
153 •
         FROM student s
154
         JOIN department d ON s.department_id = d.department_id
155
         WHERE d.department_name != 'Computer Science';
156
157
Export: Wrap Cell Content: IA
                                                            address_id
   student_id
             first_name
                        last_name
                                  birthdate
                                              department_id
  2
                                  1996-07-22
                                              2
                                                           2
             Jane
                       Smith
  6
                                  1995-06-10 2
                                                           6
             Daniel
                       Wilson
  3
                                                           3
             Alice
                                  1994-11-30
                                             3
                       Johnson
  4
                                             4
                                                           4
             Michael
                       Brown
                                 1997-02-19
  5
                                  1998-01-05
                                                           5
             Sophia
                       Davis
```

```
24.
        Count the total number of addresses in the 'Champaign' city
157
         SELECT COUNT(*) AS champaign_addresses
158 •
159
         FROM address
160
         WHERE city = 'Champaign';
161
                                           Export: Wrap Cell Content: IA
Result Grid 🔠 🙌 Filter Rows:
   champaign_addresses
  2
25.
        Find the name of the student who lives at '520 Pine Rd'
        SELECT s.first_name, s.last_name
162 •
         FROM student s
163
         JOIN address a ON s.address_id = a.address_id
164
         WHERE a.street_address = '520 Pine Rd';
165
166
Export: Wrap Cell Content: IA
   first_name
            last_name
26.
        Get the average age of students in the 'Electrical Engineering' department
        SELECT AVG(TIMESTAMPDIFF(YEAR, birthdate, CURDATE())) AS avg age
167 •
168
        FROM student s
        JOIN department d ON s.department id = d.department id
169
        WHERE d.department_name = 'Electrical Engineering';
170
171
                                       Export: Wrap Cell Content: TA
avg_age
  30.0000
```

27. List the students, their department, and the city where they live, but only for those in departments starting with 'M'

```
172 •
         SELECT s.first_name, s.last_name, d.department_name, a.city
173
        FROM student s
        JOIN department d ON s.department_id = d.department_id
174
         JOIN address a ON s.address id = a.address id
175
        WHERE d.department_name LIKE 'M%';
176
177
Export: Wrap Cell Content: TA
   first_name last_name department_name
                                         city
                      Mechanical Engineering
  Jane
            Smith
                                         Decatur
  Daniel
            Wilson
                      Mechanical Engineering
                                         Urbana
                      Mathematics
  Sophia
            Davis
                                         Chicago
```

28. Delete a student from the 'Mechanical Engineering' department

```
7
8   DELETE FROM student
9   WHERE department_id = (
0    SELECT department_id FROM department
1    WHERE department_name = 'Mechanical Engineering'
2   )
3   LIMIT 1;
```

Download order.sql

Open PG Admin and open query tool and select any database of your choice.

Click on "Open file" and select order.sql from your device and execute it.

Questions:

1. Retrieve All Orders with Their Customer Details and Current Status

```
107 •
              SELECT o.order_id, o.order_date, o.total_amount,
108
               c.first_name, c.last_name, c.email,
109
                s.status name
110
         FROM order_schema.orders o
111
         JOIN order_schema.customer c ON o.customer_id = c.customer_id
         JOIN order_schema.status s ON o.status_id = s.status_id;
112
                                           Export: Wrap Cell Content: ‡A
order_id order_date total_amount first_name last_name email
                                                                               status name
                                 John Doe Export recordset to an external file heelled
            2025-02-15
                      1499.98
          2025-02-18 149.99
            2025-02-16
                                                        jane.smith@example.com
     2025-02-17 499.99 Emily Jones emily.jones@example.com Shipped
Result 1 ×
Output :
Action Output
    56 19:51:56 CREATE TABLE order_schema.order_items ( order_item_id INT PRIMARY KEY, order_id INT, product_id INT, quantity IN... 0 row(s) affected
    57 19:51:56 INSERT INTO order_schema.order_items (order_items_id, order_jd, product_id, quantity, price) VALUES (1, 1, 1, 1, 999.99), - 1 L... 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
```

2. Get the Total Value of Orders for a Given Customer in a Specific Time Period

```
SELECT SUM(total_amount) AS total_value

FROM order_schema.orders

WHERE customer_id = 1

AND order_date BETWEEN '2025-02-01' AND '2025-02-28';

Result Grid

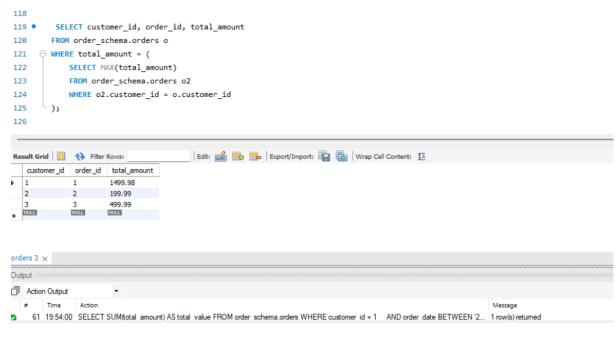
Filter Rows:

Export: Wrap Cell Content: A

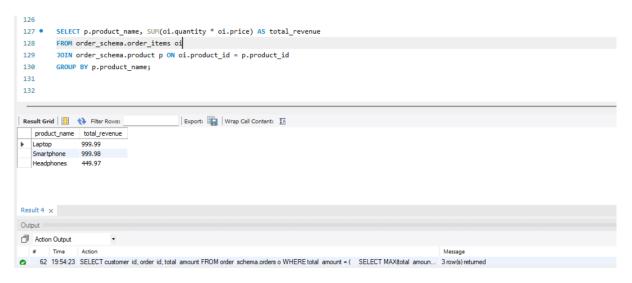
total_value

1649.97
```

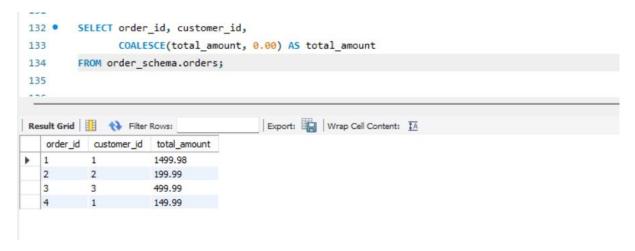
3. Find the Most Expensive Order by Customer



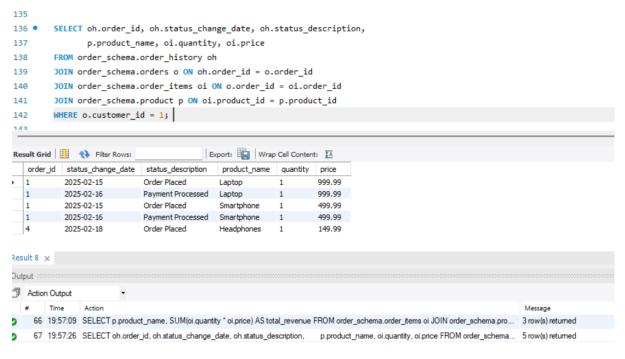
4. Find the Total Revenue for Each Product Based on Orders



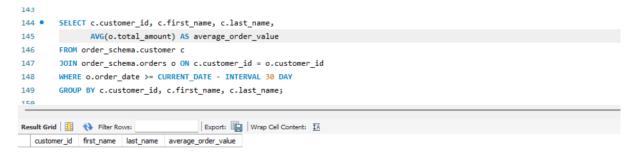
5. Write a query to retrieve the order ID, customer ID, and the total amount of each order. If the total amount is null, display '0.00' instead.



6. Retrieve the Order History of a Specific Customer Along with Product Details

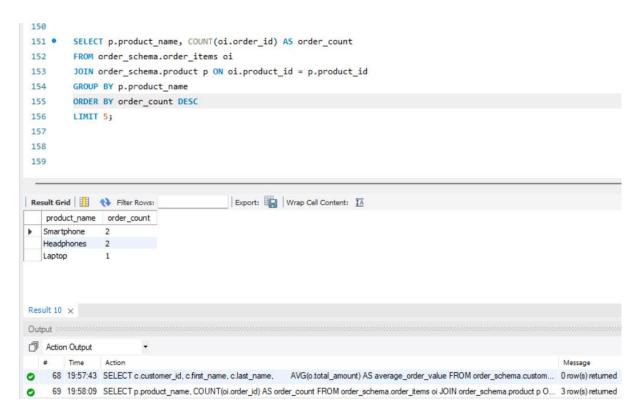


7. Get the Average Order Value Per Customer in the Last 30 Days.

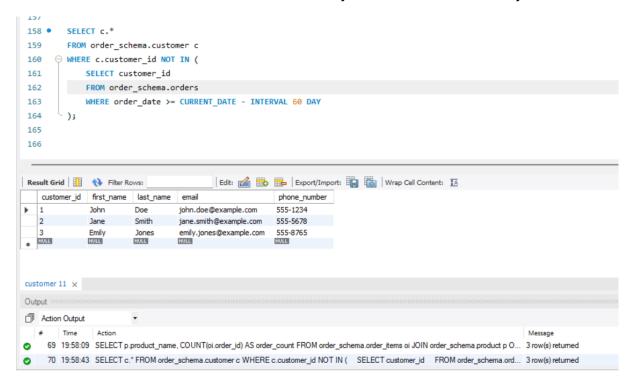




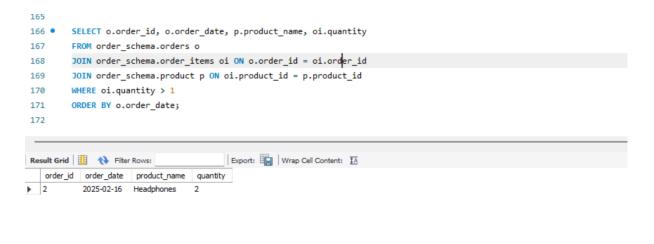
8. Get the Top 5 Products with the Highest Number of Orders.



9. Get the Customers Who Have Not Placed Any Orders in the Last 60 Days

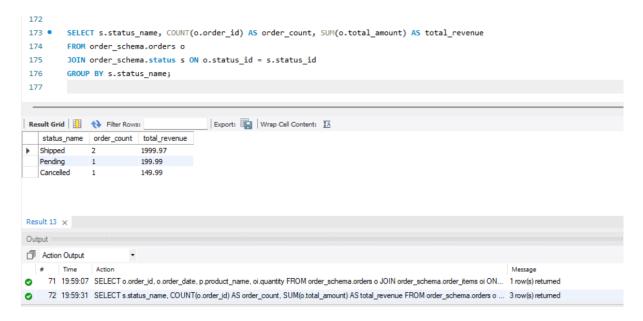


10. List the Orders with Products Ordered More Than Once, Sorted by Order Date

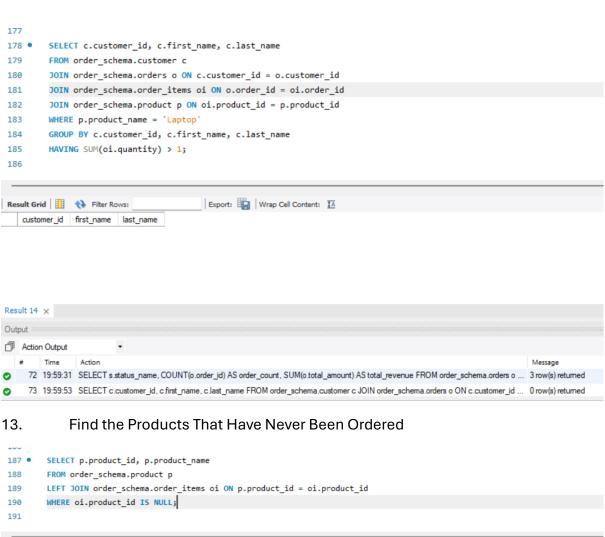




11. Retrieve the Number of Orders and Total Revenue for Each Status



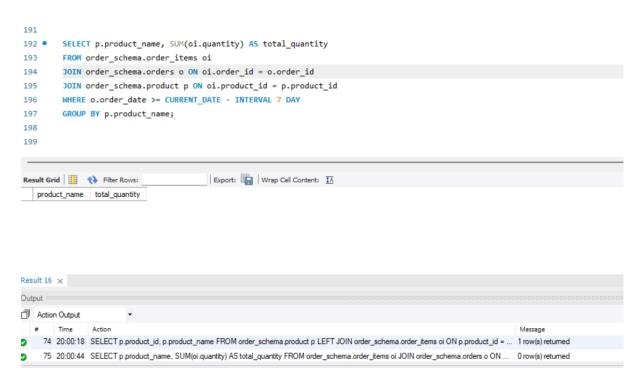
Find Customers Who Have Ordered More Than a Specific Product (e.g., "Laptop")



```
Export: Wrap Cell Content: IA
  product_id product_name
         Monitor
```



14. Get the Total Quantity of Products Ordered in the Last 7 Days



15. Create a view named product_details that includes all columns from the product table.



16. Create a view named order_summary that includes the order_id, customer_id, order_date, total_amount, and status_name (from the status table) for each order.

