1. CREATE TABLE departments (
   dept_id INT PRIMARY KEY,
   dept_name VARCHAR(50)
);

CREATE TABLE employees (
   emp_id INT PRIMARY KEY,
   emp_name VARCHAR(50),
   gender CHAR(1),
   salary DECIMAL(10,2),
   hire_date DATE,
   dept_id INT,
   FOREIGN KEY (dept_id) REFERENCES departments(dept_id)
);

INSERT INTO departments VALUES
(1, 'HR'),
(2, 'Finance'),
(3, 'Sales'),
(4, 'IT');

INSERT INTO employees VALUES
(101, 'Amit Sharma', 'M', 60000, '2021-03-12', 3),
(102, 'Priya Singh', 'F', 75000, '2019-11-20', 2),
(103, 'Ravi Patel', 'M', 55000, '2022-01-05', 3),
(104, 'Neha Verma', 'F', 90000, '2018-07-15', 4),
(105, 'Karan Mehta', 'M', 50000, '2023-04-10', 1),
(106, 'Sneha Rao', 'F', 95000, '2020-05-25', 4);

1. Display all columns from the `employees` table.

2. Show only employee names and their salaries.

3. List all female employees.

4. Display the names of employees who work in the IT department.

5. Find employees whose salary is less than ₹60,000.
   List employees whose salary is between ₹55,000 and ₹90,000.

6. Display all employees whose name starts with “N”.

7. Show all employees whose name ends with “a”.

8. Display employees who joined in the year 2023.

9. List all male employees from the Sales department.

10. Find all employees whose department ID is either 2 or 4.

11. Show departments whose name starts with ‘S’.

12. Count how many departments exist in the company.
13. Sort departments alphabetically.

14. Show each employee’s name with their department name.

15. Display employee name, department name, and salary for all employees.
16. Find the average salary of each department.

17. Count total employees in each department.

Second Example

Tables:

customers – cust_id , cust_name , city , email , join_date

products – prod_id, prod_name ,category , price , stock

orders – order_id , cust_id , order_date , status (status like delivered,pending,cancelled)

order_items – order_item_id ,order_id , prod_id , quantity

Queries

1. Show all customers who live in Mumbai.
2. Display names of all products in the “Electronics” category.
3. List all orders that were delivered.
4. Find customers who joined after January 2023.
5. Display products whose price is greater than ₹10,000.
6. Show the total number of customers.
7. Display product names with their stock quantity.
8. List orders placed in August 2024.
9. Show customers whose name starts with “S”.
10. Display the cheapest product.
11. Count how many orders each customer has placed.
12. Find the total quantity of products ordered in each order.
13. Show each customer’s name and the total value of their delivered orders.
14. Display the most expensive product in each category.
15. Find customers who have never placed an order.

16. Show total sales (price × quantity) of each product.

17. List all products that have been ordered more than 2 times.

18. Find the total revenue generated in 2024.

19. Display all orders along with customer names and order status.

20. Show the number of “Delivered” vs “Cancelled” orders.

21.

Find the top 3 customers with the highest total spending.

22. Display the product categories ranked by total sales.

23. Find customers who have purchased both “Laptop” and “Headphones”.

24. Show products that were never ordered.

25. Find orders with multiple products from different categories.

26. Calculate each month’s total revenue and show a running total.

27. Display the average order value per customer.

28. Show the most frequently ordered product.

29. List customers who placed orders in at least 3 different months.

30. Find products that are out of stock or nearly out of stock (less than 10 units).