Branch: *MCA (Data Science)*	**Semester:** *2*
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Subject Name: *Technical Training - I*	**Subject Code**: 25CAP-652
Section/Group: 25*MCD – 1(A)*	**Date of Performance:** *22 January,2026*

Experiment No. : 2

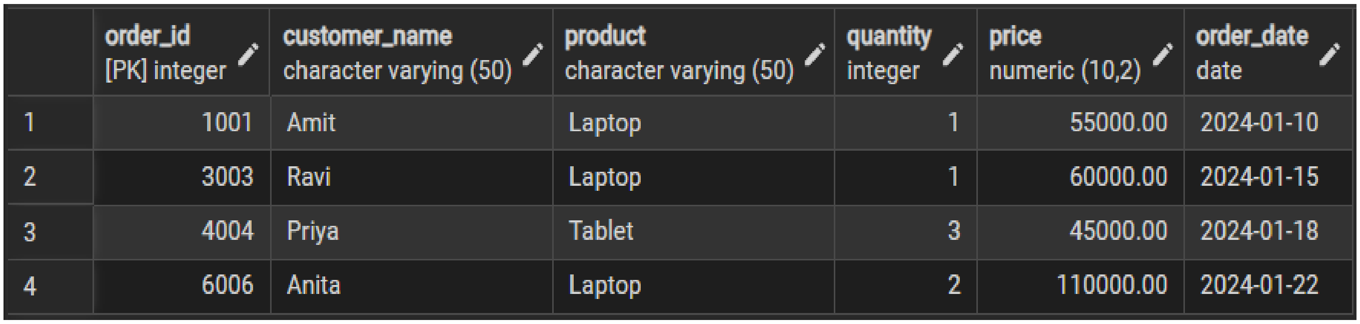
1. **Aim/Overview of the practical:**
   To implement and analyze SQL SELECT queries using filtering, sorting, grouping, and aggregation concepts in PostgreSQL for efficient data retrieval and analytical reporting.
2. **Objective:**
   After completing this practical, the student will be able to:
   • Retrieve specific data using filtering conditions
   • Sort query results using single and multiple attributes
   • Perform aggregation using grouping techniques
   • Apply conditions on aggregated data using HAVING clause
   • Understand real-world analytical queries commonly asked in placement interviews

3. **Software Used:**
   - PostgreSQL
   - pgAdmin4

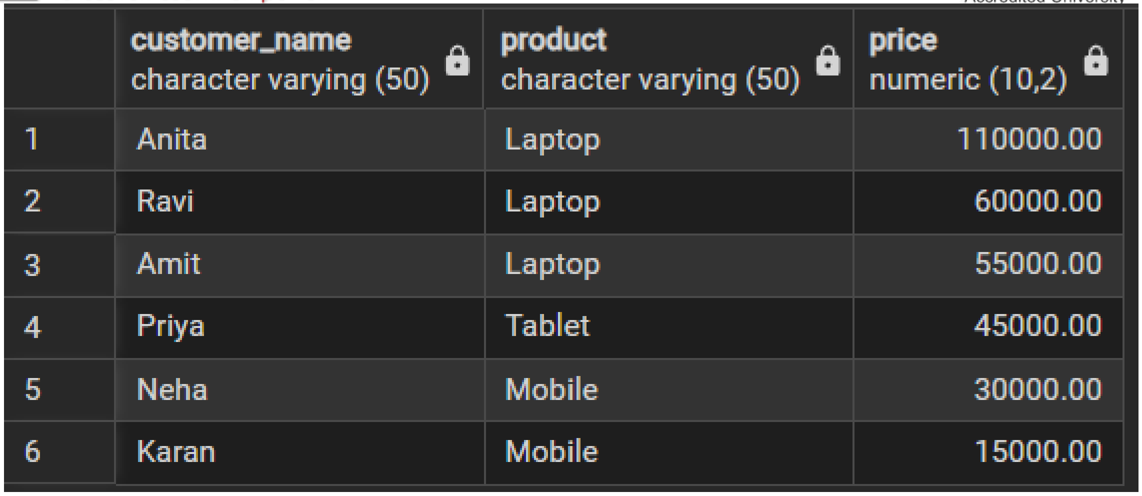
4. **Code for experiment/Practical:**

```
CREATE TABLE customer_orders (
   order_id INT PRIMARY KEY,
   customer_name VARCHAR(50),
   product VARCHAR(50),
   quantity INT,
   price NUMERIC(10,2),
   order_date DATE
);

INSERT INTO customer_orders (order_id, customer_name,
product, quantity, price, order_date) VALUES
(1001,'Amit', 'Laptop', 1, 55000, '2024-01-10'),
(2002,'Neha', 'Mobile', 2, 30000, '2024-01-12'),
(3003,'Ravi', 'Laptop', 1, 60000, '2024-01-15'),
(4004,'Priya', 'Tablet', 3, 45000, '2024-01-18'),
(5005,'Karan', 'Mobile', 1, 15000, '2024-01-20'),
(6006,'Anita', 'Laptop', 2, 110000, '2024-01-22');

SELECT *
FROM customer_orders
WHERE price > 40000;

SELECT customer_name, product, price
FROM customer_orders
ORDER BY price ASC;

SELECT customer_name, product, price
FROM customer_orders
ORDER BY price DESC;

SELECT customer_name, product, price
FROM customer_orders
ORDER BY product ASC, price DESC;

SELECT product, SUM(price) AS total_sales
FROM customer_orders
GROUP BY product;

SELECT product, SUM(price) AS total_sales
FROM customer_orders
GROUP BY product
HAVING SUM(price) > 70000;
```

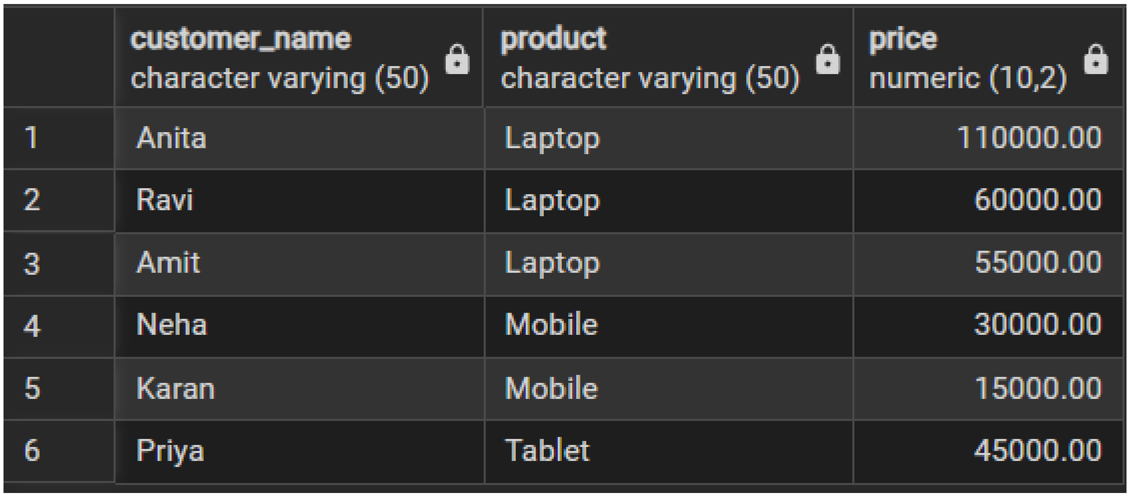
5. Result/Output/Writing Summary:



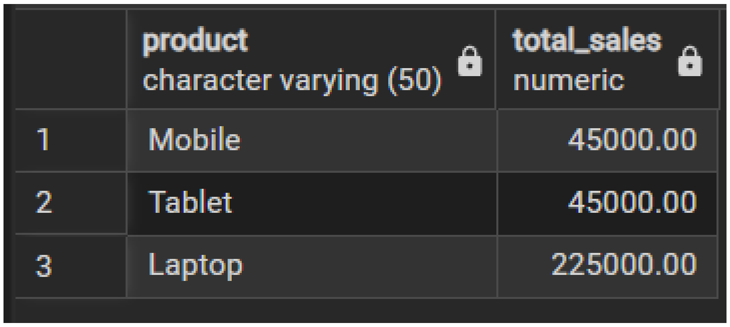
	order_id [PK] integer	customer_name character varying (50)	product character varying (50)	quantity integer	price numeric (10,2)	order_date date
1	1001	Amit	Laptop	1	55000.00	2024-01-10
2	3003	Ravi	Laptop	1	60000.00	2024-01-15
3	4004	Priya	Tablet	3	45000.00	2024-01-18
4	6006	Anita	Laptop	2	110000.00	2024-01-22



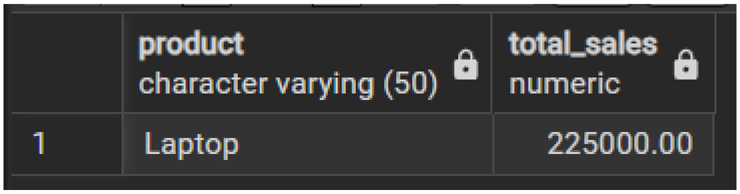
	customer_name character varying (50)	product character varying (50)	price numeric (10,2)
1	Anita	Laptop	110000.00
2	Ravi	Laptop	60000.00
3	Amit	Laptop	55000.00
4	Priya	Tablet	45000.00
5	Neha	Mobile	30000.00
6	Karan	Mobile	15000.00



	customer_name character varying (50)	product character varying (50)	price numeric (10,2)
1	Anita	Laptop	110000.00
2	Ravi	Laptop	60000.00
3	Amit	Laptop	55000.00
4	Neha	Mobile	30000.00
5	Karan	Mobile	15000.00
6	Priya	Tablet	45000.00



	product character varying (50)	total_sales numeric
1	Mobile	45000.00
2	Tablet	45000.00
3	Laptop	225000.00



	product character varying (50)	total_sales numeric
1	Laptop	225000.00

6. I/O Analysis (Input / Output)

Input:

- Customer order details
- Filtering, sorting, grouping, and aggregation queries

Output:

- Filtered customer records
- Sorted result sets
- Group-wise sales summary
- Aggregated revenue reports (Screenshots of execution and output attached)

Learning outcomes (What I have learnt):

- Students understand how data can be filtered to retrieve only relevant records.
- Students learn how sorting improves readability and usefulness of reports.
- Students gain the ability to group data for analytical purposes.
- Students clearly differentiate between WHERE and HAVING clauses.
- Students develop confidence in writing analytical SQL queries.
- Students are better prepared for SQL-based placement and interview questions.