SQL SELECT Statement

1. What is SELECT in SQL?

- SELECT is used to retrieve data from database tables.
- The result is stored in a **result-set** (virtual table).

2. Basic SELECT Syntax

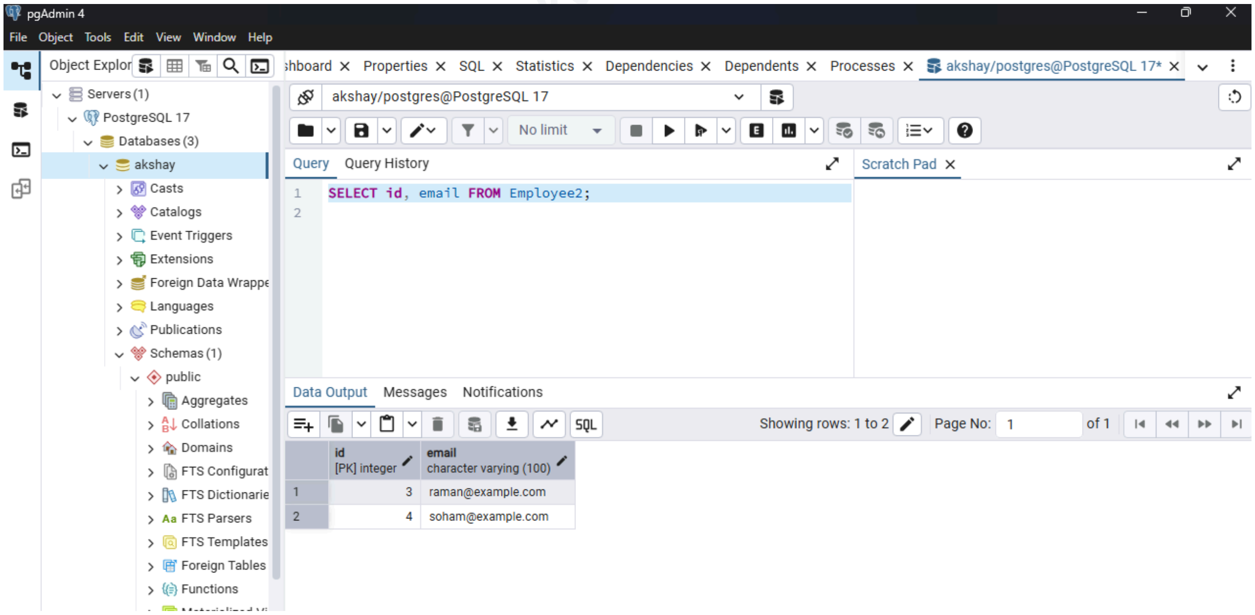
SELECT column1, column2, ... FROM table_name;

To get all columns:

SELECT * FROM table_name;

Example:

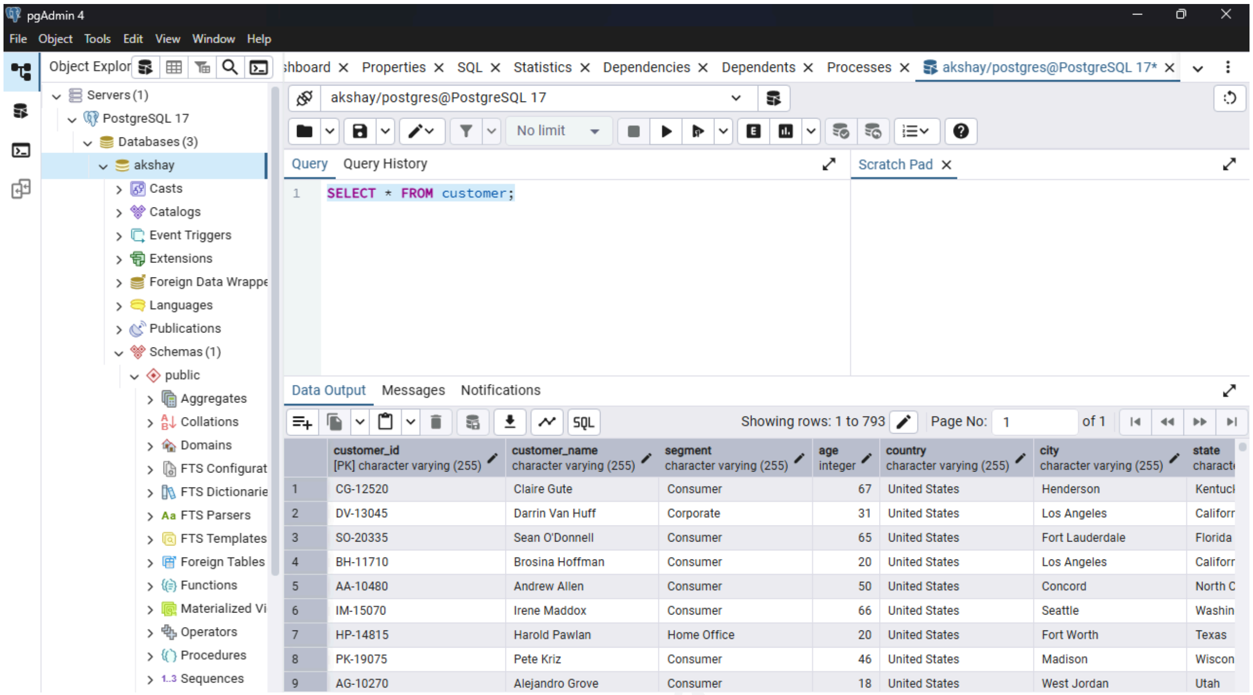
SELECT id, email FROM Employee2;



```
SELECT id, email FROM Employee2;
```

	id [PK] integer	email character varying (100)
1	3	raman@example.com
2	4	soham@example.com

SELECT * FROM customers;



```
SELECT * FROM customer;
```

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	customer_id [PK] character varying (255)	customer_name character varying (255)	segment character varying (255)	age integer	country character varying (255)	city character varying (255)	state characte
1	CG-12520	Claire Gute	Consumer	67	United States	Henderson	Kentucl
2	DV-13045	Darrin Van Huff	Corporate	31	United States	Los Angeles	Califorr
3	SO-20335	Sean O'Donnell	Consumer	65	United States	Fort Lauderdale	Florida
4	BH-11710	Brosina Hoffman	Consumer	20	United States	Los Angeles	Califorr
5	AA-10480	Andrew Allen	Consumer	50	United States	Concord	North C
6	IM-15070	Irene Maddox	Consumer	66	United States	Seattle	Washin
7	HP-14815	Harold Pawlan	Home Office	20	United States	Fort Worth	Texas
8	PK-19075	Pete Kriz	Consumer	46	United States	Madison	Wiscon
9	AG-10270	Alejandro Grove	Consumer	18	United States	West Jordan	Utah

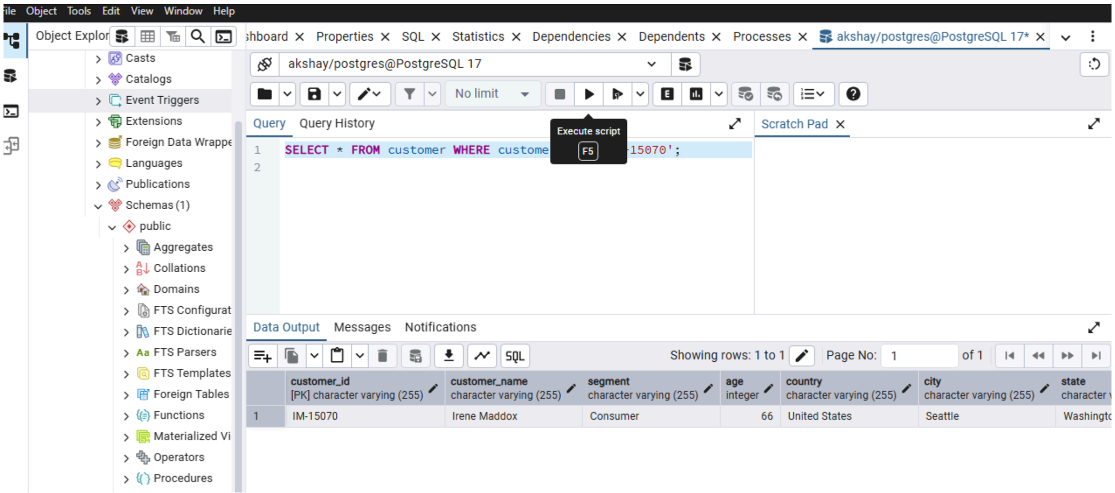
3. SELECT with WHERE Clause

- Filters data based on specific conditions.

SELECT * FROM table_name WHERE condition;

Example:

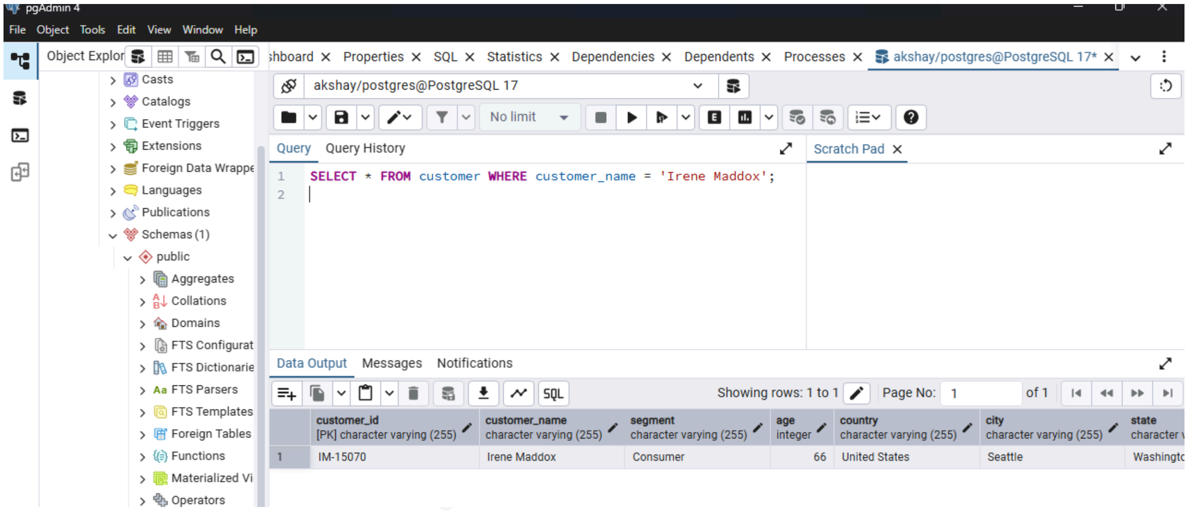
SELECT * FROM customer WHERE customer_id = 'IM-15070';



```
SELECT * FROM customer WHERE custome                 -15070';
```

	customer_id [PK] character varying (255)	customer_name character varying (255)	segment character varying (255)	age integer	country character varying (255)	city character varying (255)	state character v
1	IM-15070	Irene Maddox	Consumer	66	United States	Seattle	Washingtc

SELECT * FROM customers WHERE customer_name = 'Irene Maddox';



```
SELECT * FROM customer WHERE customer_name = 'Irene Maddox';
```

	customer_id [PK] character varying (255)	customer_name character varying (255)	segment character varying (255)	age integer	country character varying (255)	city character varying (255)	state character v
1	IM-15070	Irene Maddox	Consumer	66	United States	Seattle	Washingtc

4. SELECT DISTINCT

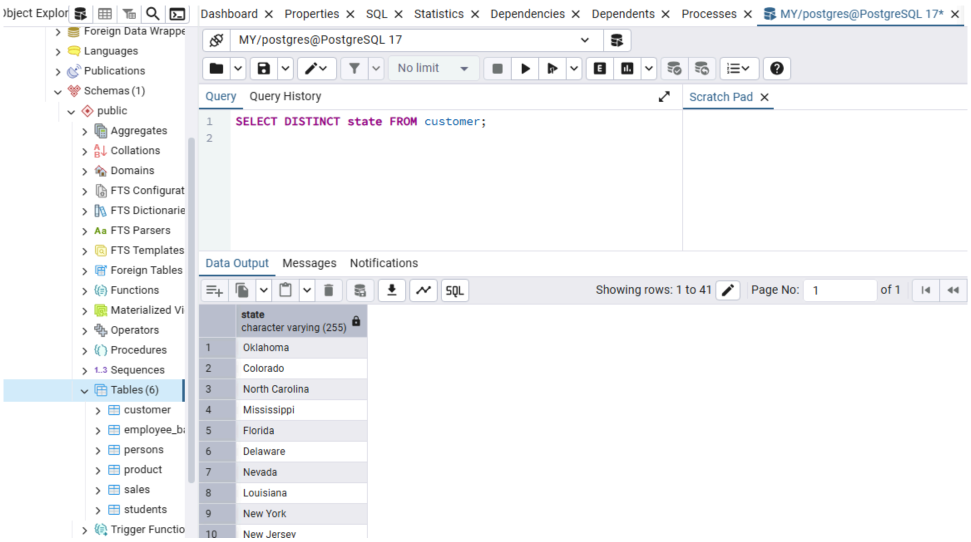
- Removes duplicate values from the result.

SELECT DISTINCT column_name FROM table_name;

Example:

SELECT DISTINCT state FROM customer;

Output:



```
SELECT DISTINCT state FROM customer;
```

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	state character varying (255)
1	Oklahoma
2	Colorado
3	North Carolina
4	Mississippi
5	Florida
6	Delaware
7	Nevada
8	Louisiana
9	New York
10	New Jersey

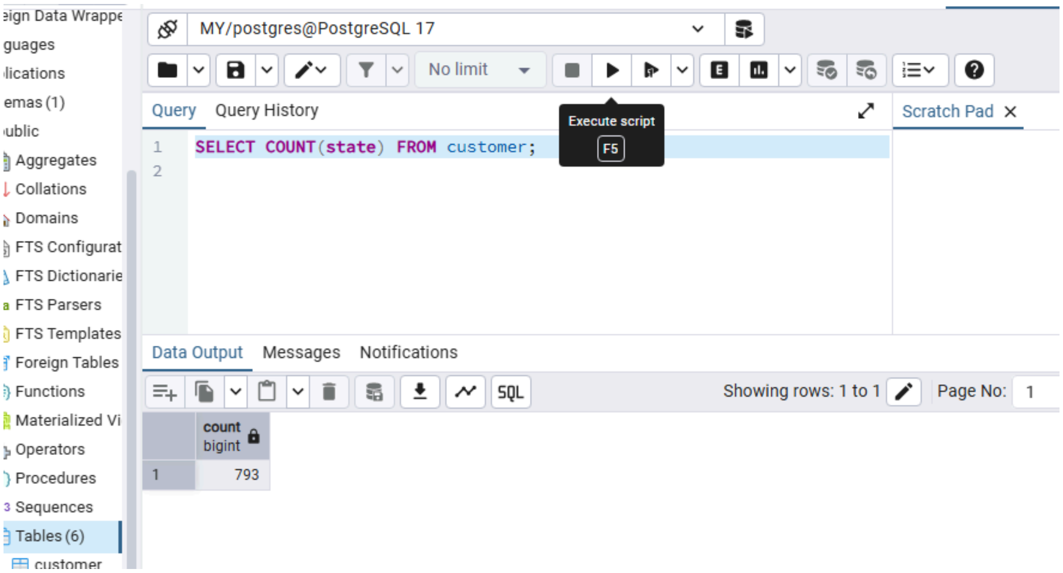
5. SELECT COUNT()

- Returns the number of rows (records).

1. SELECT COUNT(column_name) FROM table_name;

Example:

SELECT COUNT(state) FROM customer;



```
SELECT COUNT(state) FROM customer;
```

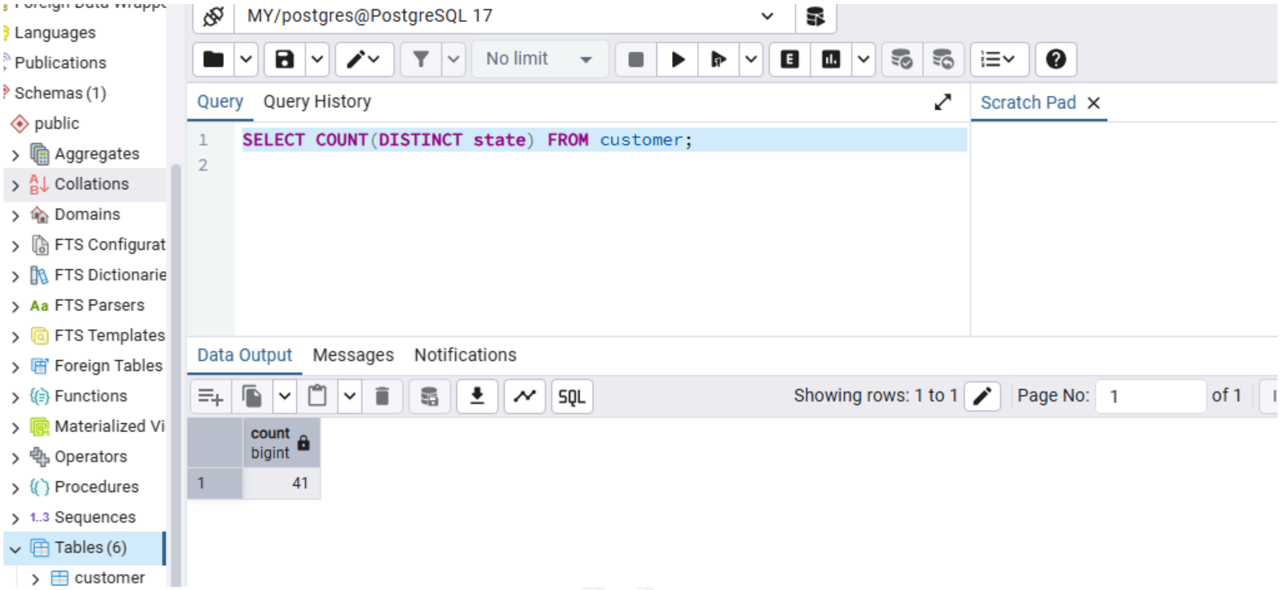
Showing rows: 1 to 1 Page No: 1

	count bigint
1	793

2. SELECT COUNT(DISTINCT column_name) FROM table_name WHERE condition;

Example:

SELECT COUNT(DISTINCT state) FROM customer;



```
SELECT COUNT(DISTINCT state) FROM customer;
```

```
  count
  bigint
1     41
```

6. SELECT with IN

Used to filter data based on a list of **multiple values**.

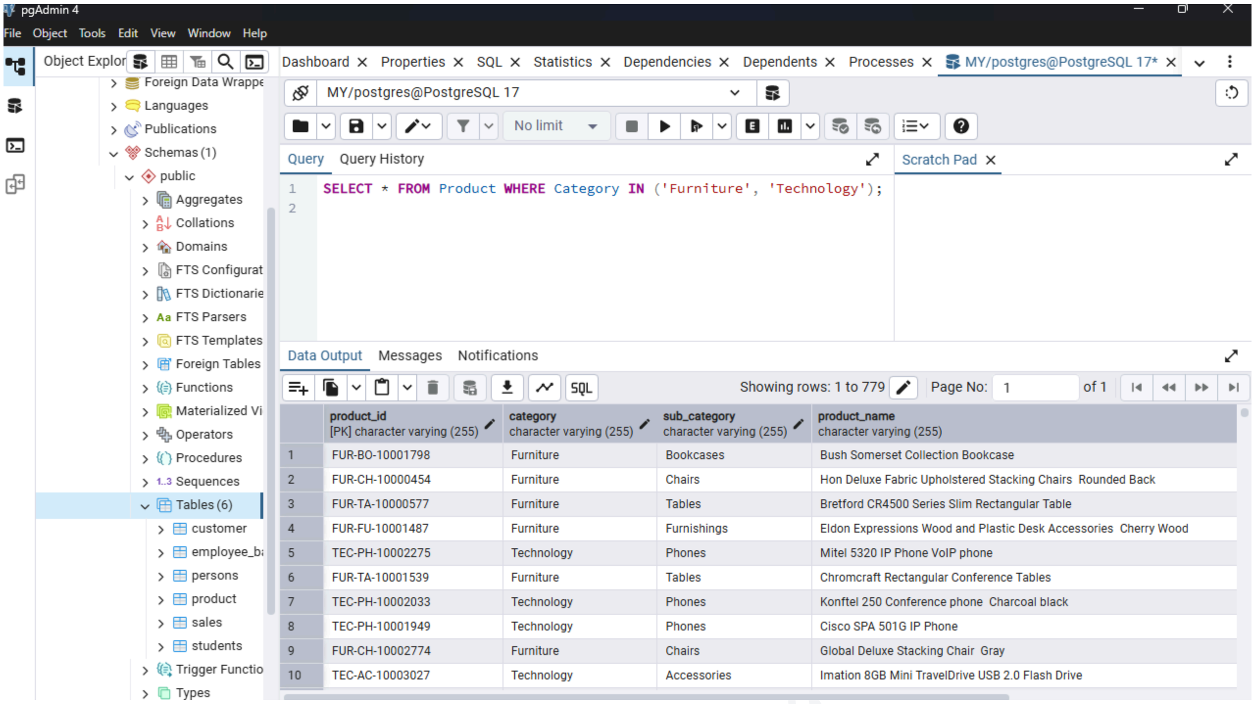
SELECT column1, column2

FROM table_name

WHERE column_name IN (value1, value2, ...);

Example 1 :

SELECT * FROM Products WHERE Category IN ('Furniture', 'Technology');



```
SELECT * FROM Product WHERE Category IN ('Furniture', 'Technology');
```

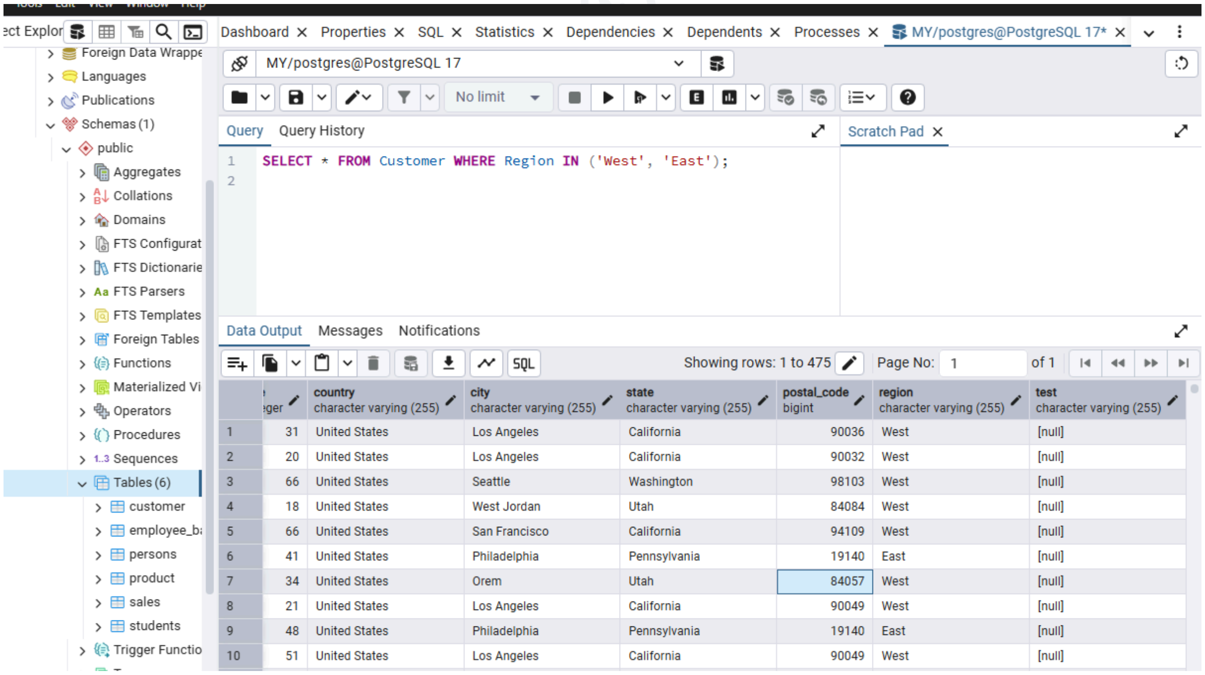
Showing rows: 1 to 779 Page No: 1 of 1

	product_id [PK] character varying (255)	category character varying (255)	sub_category character varying (255)	product_name character varying (255)
1	FUR-BO-10001798	Furniture	Bookcases	Bush Somerset Collection Bookcase
2	FUR-CH-10000454	Furniture	Chairs	Hon Deluxe Fabric Upholstered Stacking Chairs Rounded Back
3	FUR-TA-10000577	Furniture	Tables	Bretford CR4500 Series Slim Rectangular Table
4	FUR-FU-10001487	Furniture	Furnishings	Eldon Expressions Wood and Plastic Desk Accessories Cherry Wood
5	TEC-PH-10002275	Technology	Phones	Mitel 5320 IP Phone VoIP phone
6	FUR-TA-10001539	Furniture	Tables	Chromcraft Rectangular Conference Tables
7	TEC-PH-10002033	Technology	Phones	Konftel 250 Conference phone Charcoal black
8	TEC-PH-10001949	Technology	Phones	Cisco SPA 501G IP Phone
9	FUR-CH-10002774	Furniture	Chairs	Global Deluxe Stacking Chair Gray
10	TEC-AC-10003027	Technology	Accessories	Imation 8GB Mini TravelDrive USB 2.0 Flash Drive

Fetches all products that belong to either the Furniture or Technology category.

Example 2 :

SELECT * FROM Customer WHERE Region IN ('West', 'East');



```
SELECT * FROM Customer WHERE Region IN ('West', 'East');
```

Showing rows: 1 to 475 Page No: 1 of 1

	ger	country character varying (255)	city character varying (255)	state character varying (255)	postal_code bigint	region character varying (255)	test character varying (255)
1	31	United States	Los Angeles	California	90036	West	[null]
2	20	United States	Los Angeles	California	90032	West	[null]
3	66	United States	Seattle	Washington	98103	West	[null]
4	18	United States	West Jordan	Utah	84084	West	[null]
5	66	United States	San Francisco	California	94109	West	[null]
6	41	United States	Philadelphia	Pennsylvania	19140	East	[null]
7	34	United States	Orem	Utah	84057	West	[null]
8	21	United States	Los Angeles	California	90049	West	[null]
9	48	United States	Philadelphia	Pennsylvania	19140	East	[null]
10	51	United States	Los Angeles	California	90049	West	[null]

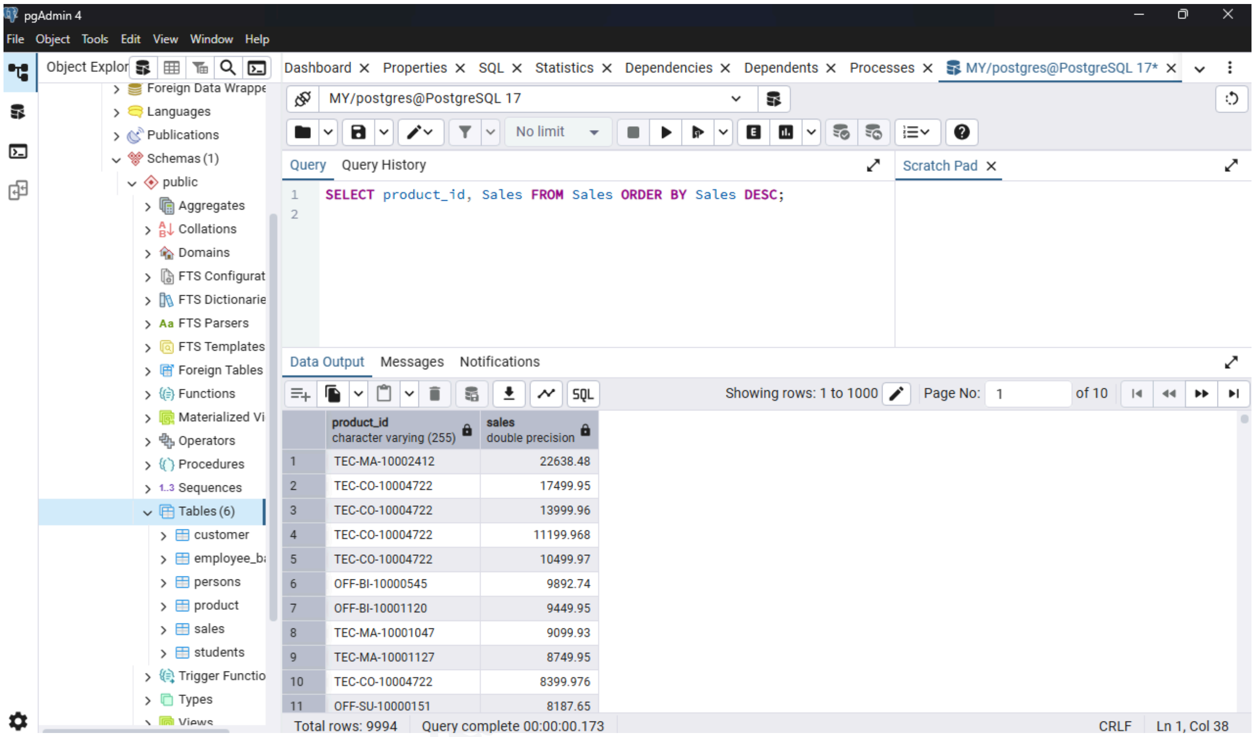
Retrieves all customers located in the West or East regions.

7. SELECT with ORDER BY

Used to **sort** the result set by one or more columns.

Example:

SELECT product_id , Sales FROM Sales ORDER BY Sales DESC;



```
SELECT product_id, Sales FROM Sales ORDER BY Sales DESC;
```

	product_id character varying (255)	sales double precision
1	TEC-MA-10002412	22638.48
2	TEC-CO-10004722	17499.95
3	TEC-CO-10004722	13999.96
4	TEC-CO-10004722	11199.968
5	TEC-CO-10004722	10499.97
6	OFF-BI-10000545	9892.74
7	OFF-BI-10001120	9449.95
8	TEC-MA-10001047	9099.93
9	TEC-MA-10001127	8749.95
10	TEC-CO-10004722	8399.976
11	OFF-SU-10000151	8187.65

Total rows: 9994 Query complete 00:00:00.173

Summary Table:

Feature	Example SQL Command
All columns	SELECT * FROM table_name;
Specific columns	SELECT name, age FROM table_name;
Filtered data	SELECT * FROM table_name WHERE age > 25;
Unique values	SELECT DISTINCT city FROM table_name;
Count total rows	SELECT COUNT(*) FROM table_name;
Count unique values	SELECT COUNT(DISTINCT salary) FROM table_name;
Match multiple values	SELECT * FROM table_name WHERE name IN ('A', 'B');

SQL SELECT – Practice Questions

1. Basic SELECT

1. Show all columns from the Products table.

2. Retrieve only Product_ID, Product_Name, and Category from the Products table.

3. Display all records from the Customers table.

2. SELECT with WHERE

4. Find all orders placed by customer ID 'CA-2017-152156'.

5. Show all customers from the 'East' region.

6. Retrieve products that belong to the category 'Technology'.

7. Show all products with sales greater than 500.

3. SELECT DISTINCT

8. List all unique product categories.

9. Show distinct customer segments.

10. Display all distinct regions from the Customers table.

4. SELECT COUNT()

11. Count the total number of orders.

12. Count how many unique customers are in the database.

13. Count how many products belong to the category 'Furniture'.

14. Count the number of orders placed in the 'West' region.

5. SELECT with IN

15. Show all products in the 'Furniture' or 'Office Supplies' categories.

16. Retrieve all customers located in 'South' or 'Central' regions.

17. Display orders with IDs in the list: 'CA-2015-100111', 'CA-2016-123456', 'CA-2017-654321'.

6. SELECT with ORDER BY

18. List all customers sorted by Customer_Name in ascending order.

19. Display all products sorted by Sales in descending order.

20. Show orders sorted by Order_Date from oldest to newest.

You can download the complete set of SQL notes and practice files from this GitHub repository:
👉 **SQL-resources-and-tutorials by akshay-dhage**