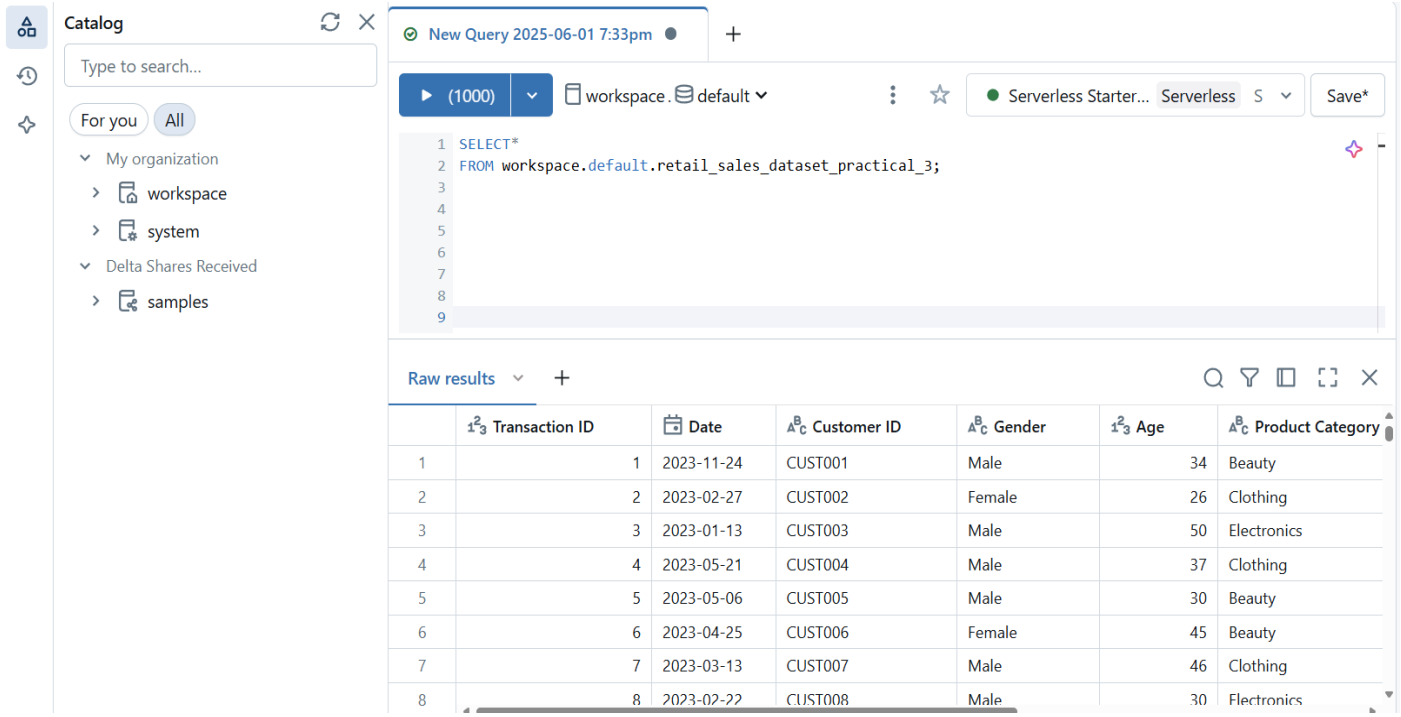
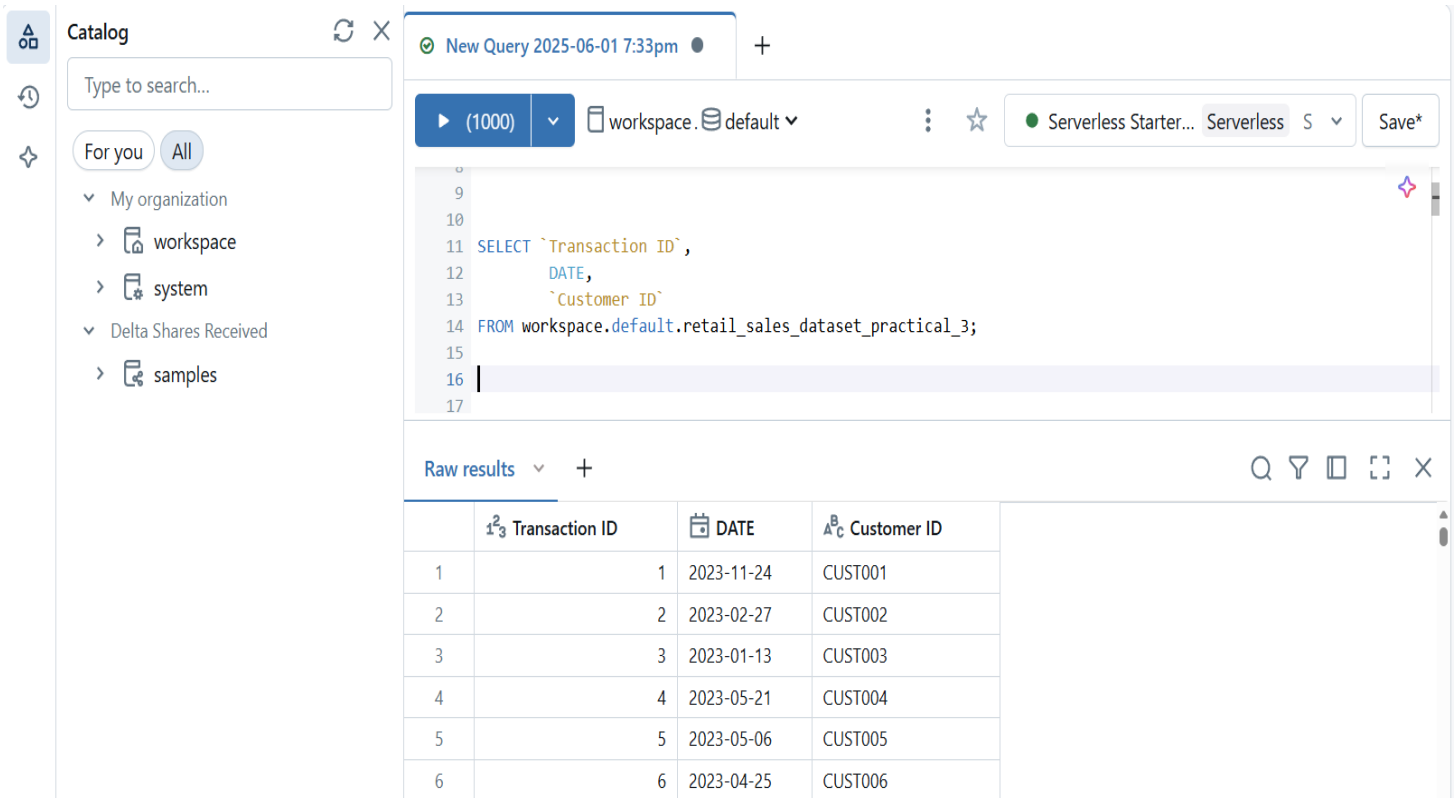
PRACTICAL DATABRICKS

1.SELECT Statement, Display all columns for all transactions. Expected output: All columns.



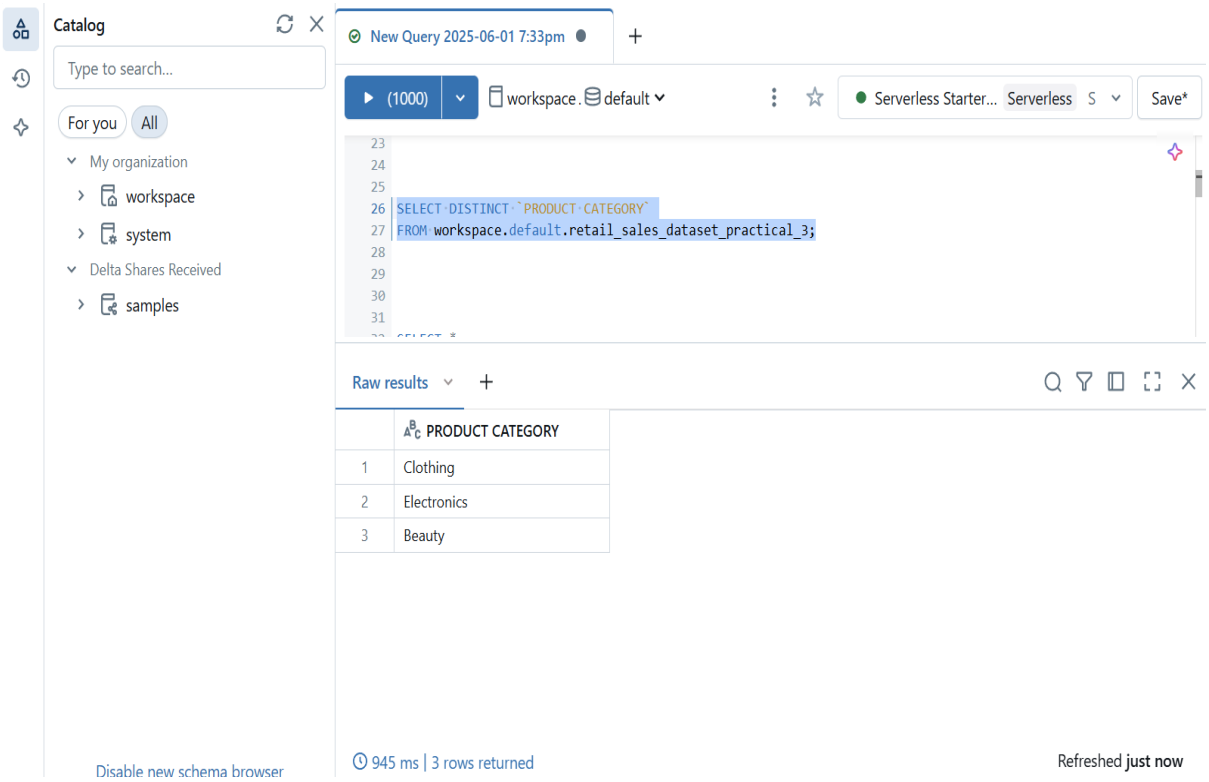
	Transaction ID	Date	Customer ID	Gender	Age	Product Category
1	1	2023-11-24	CUST001	Male	34	Beauty
2	2	2023-02-27	CUST002	Female	26	Clothing
3	3	2023-01-13	CUST003	Male	50	Electronics
4	4	2023-05-21	CUST004	Male	37	Clothing
5	5	2023-05-06	CUST005	Male	30	Beauty
6	6	2023-04-25	CUST006	Female	45	Beauty
7	7	2023-03-13	CUST007	Male	46	Clothing
8	8	2023-02-22	CUST008	Male	30	Electronics

2. **SELECT Statement,** Display only the Transaction ID, Date, and Customer ID for all records. Expected output: Transaction ID, Date, Customer ID.

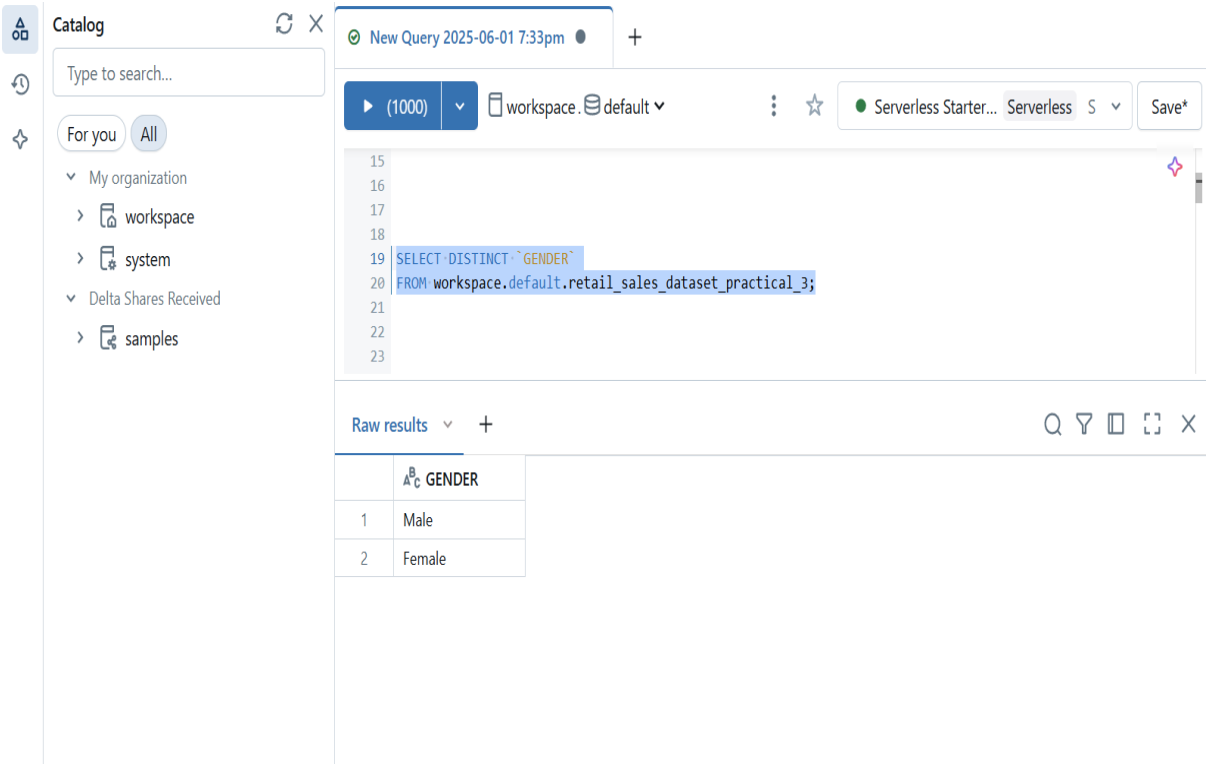


	Transaction ID	DATE	Customer ID
1	1	2023-11-24	CUST001
2	2	2023-02-27	CUST002
3	3	2023-01-13	CUST003
4	4	2023-05-21	CUST004
5	5	2023-05-06	CUST005
6	6	2023-04-25	CUST006

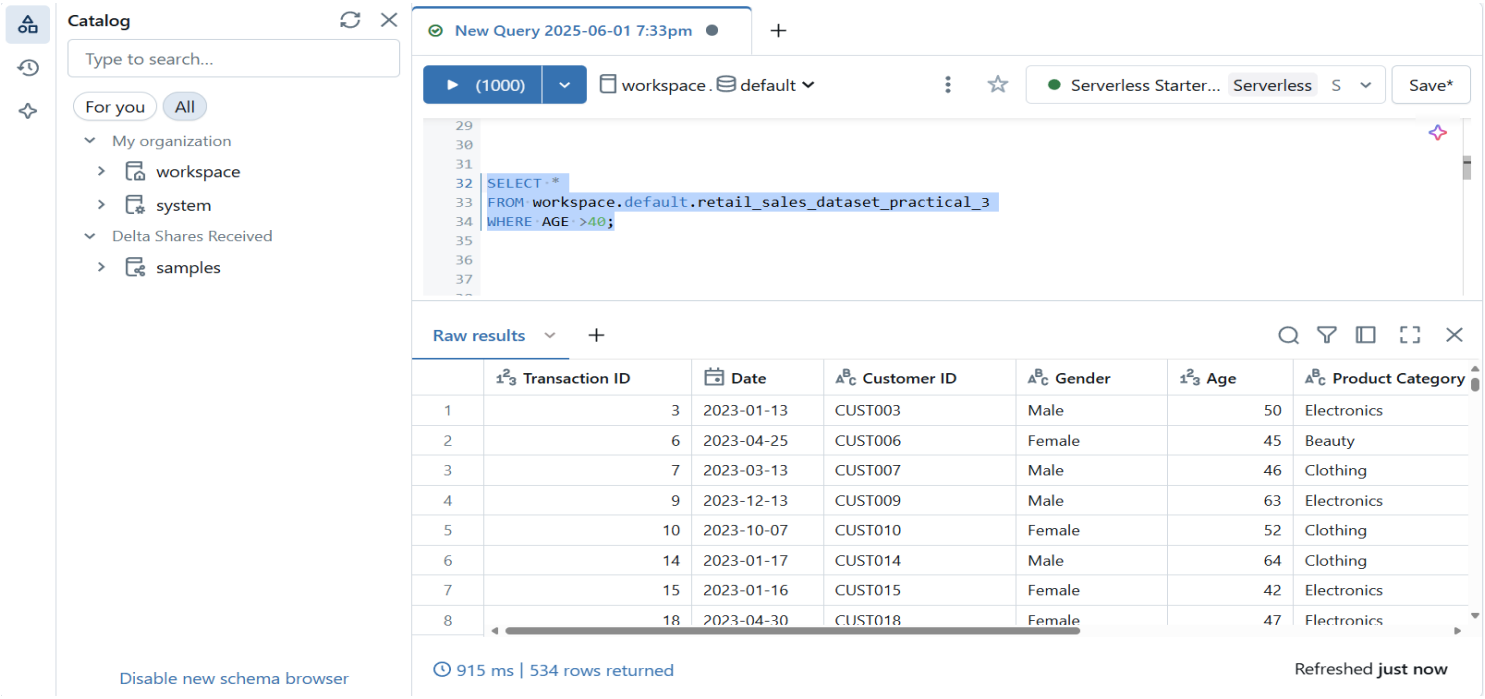
3. **SELECT DISTINCT Statement**. Display all the distinct product categories in the dataset. Expected output: Product Category.



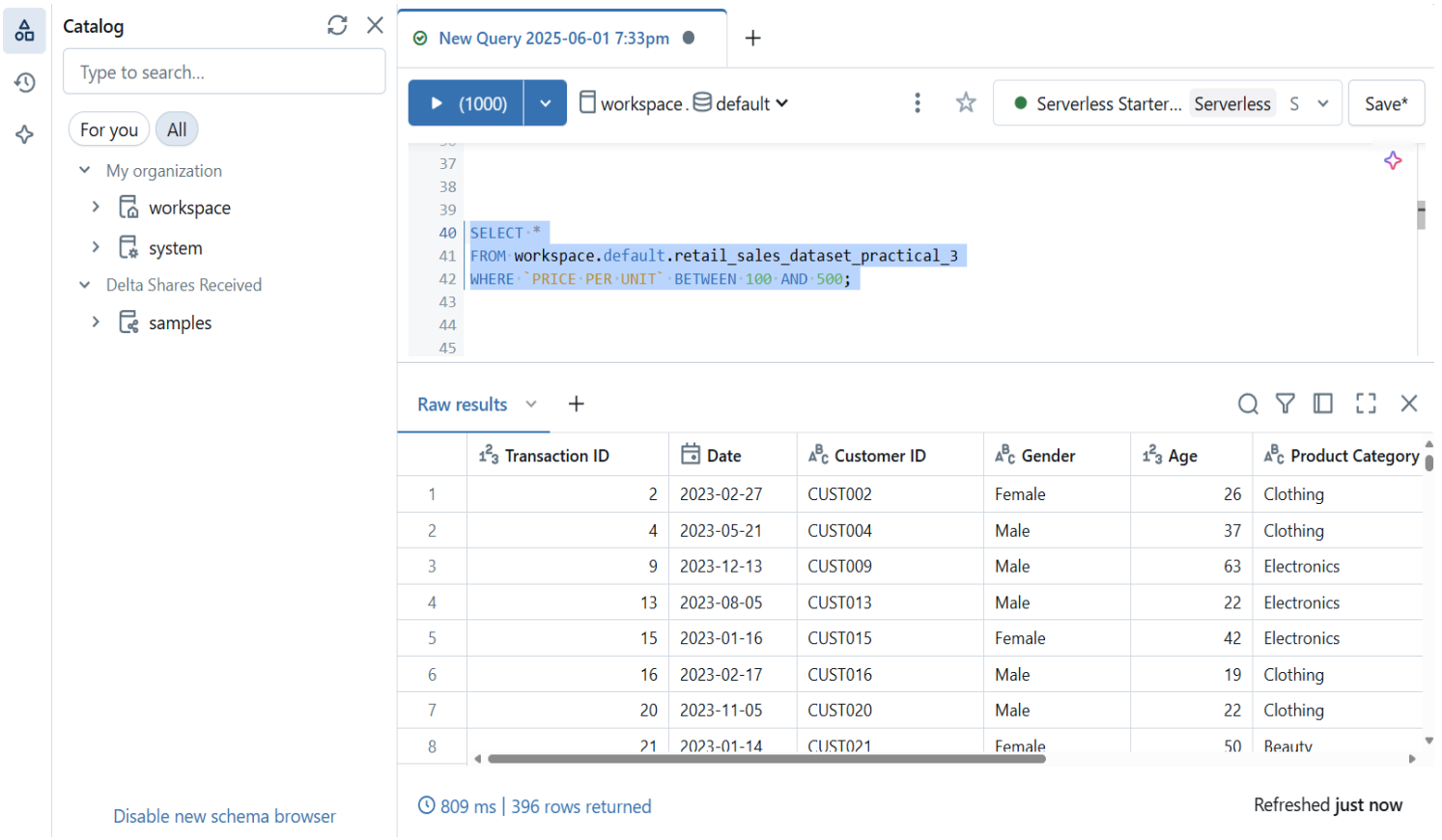
4. **SELECT DISTINCT Statement.** Display all the distinct gender values in the dataset. Expected output: Gender.



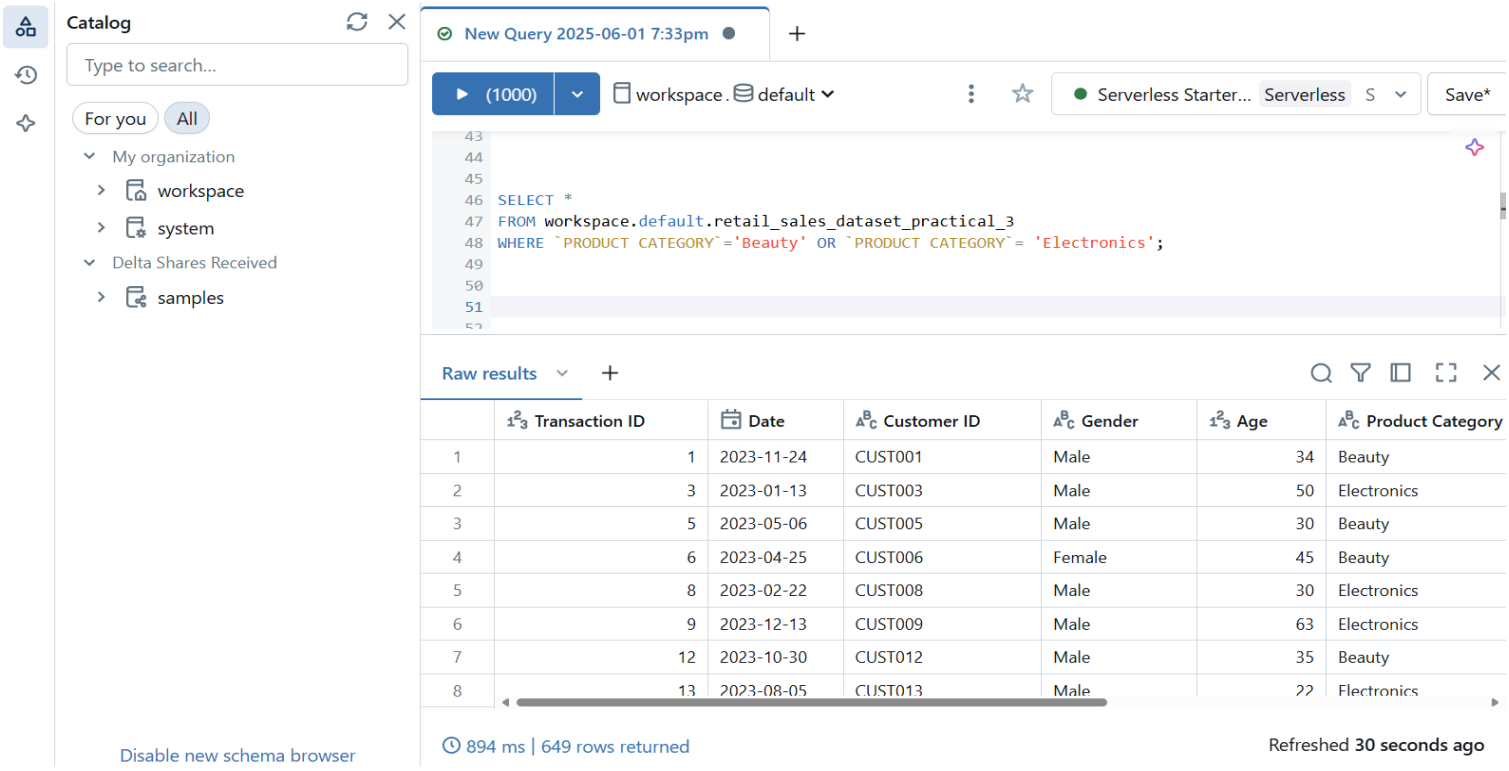
5. **WHERE Clause.** Display all transactions where the Age is greater than 40. Expected output: All columns.



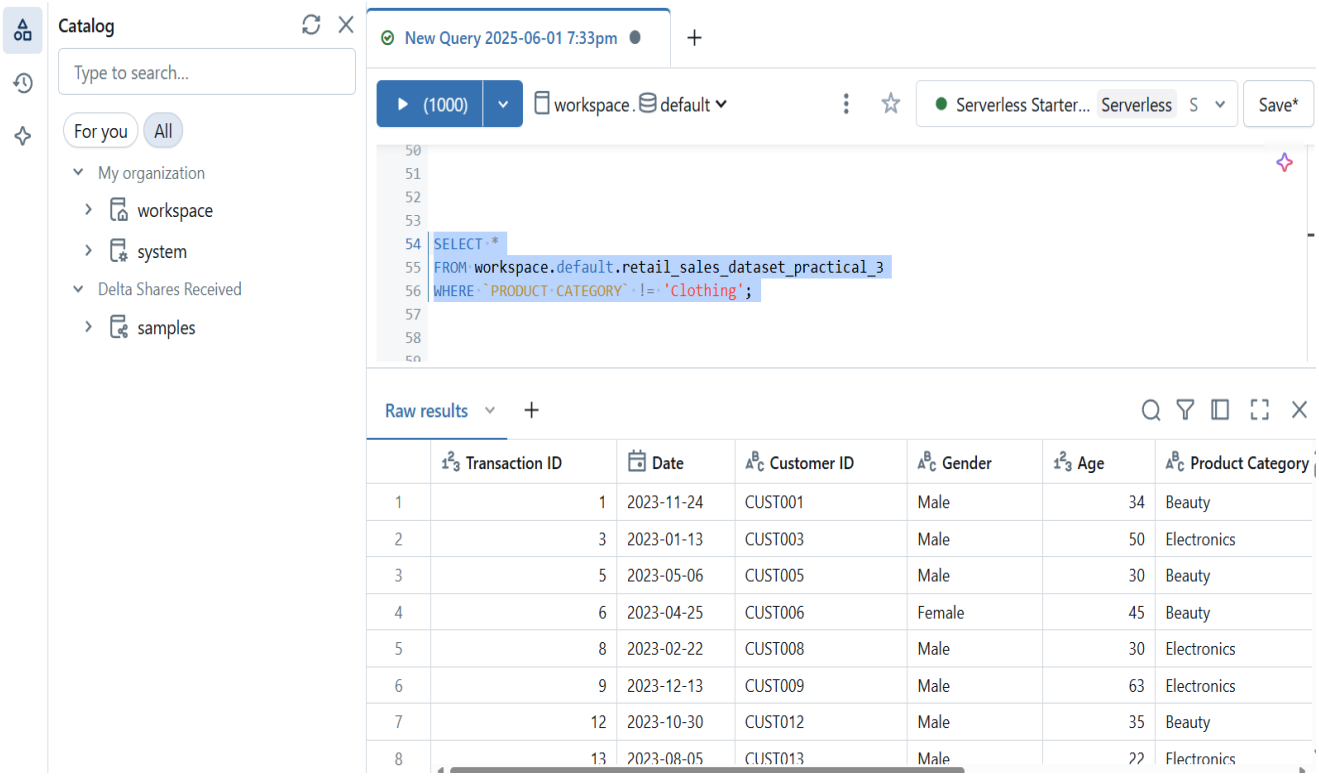
6. **WHERE Clause.** Display all transactions where the Price per Unit is between 100 and 500. Expected output: All columns.



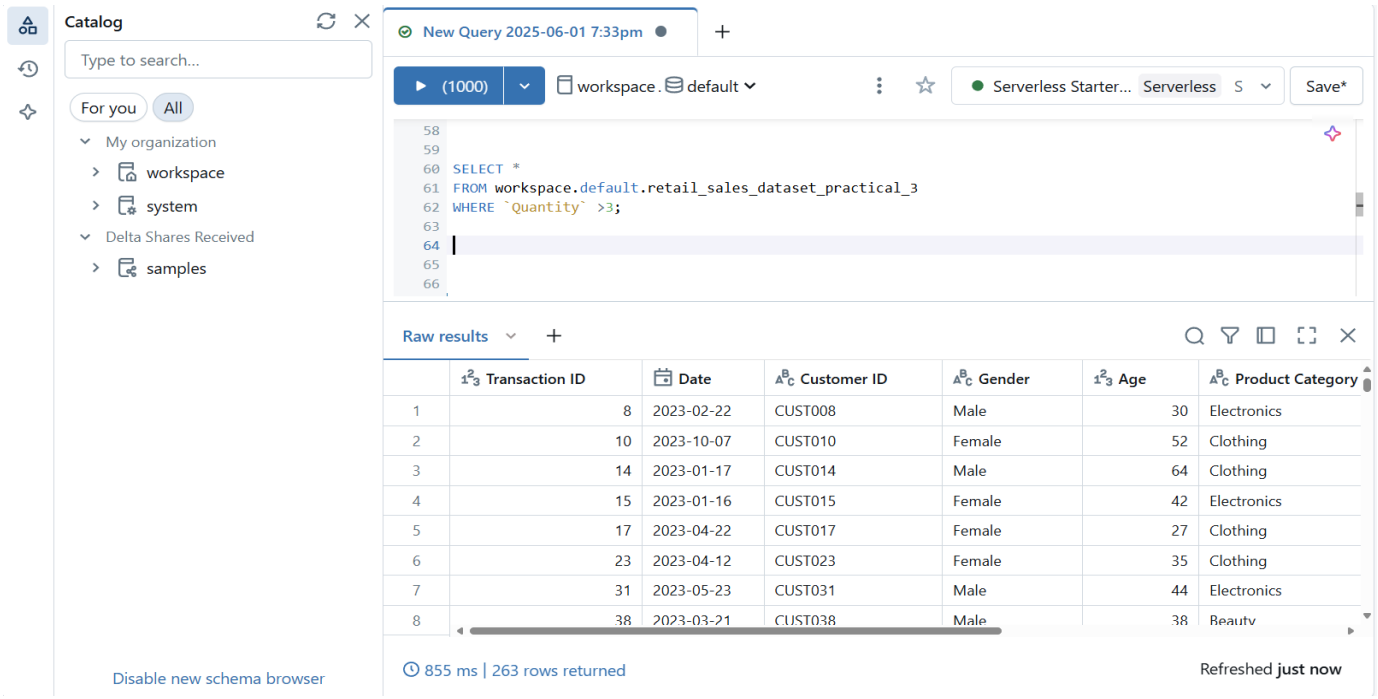
7. **WHERE Clause.** Display all transactions where the Product Category is either 'Beauty' or 'Electronics'. Expected output: All columns.



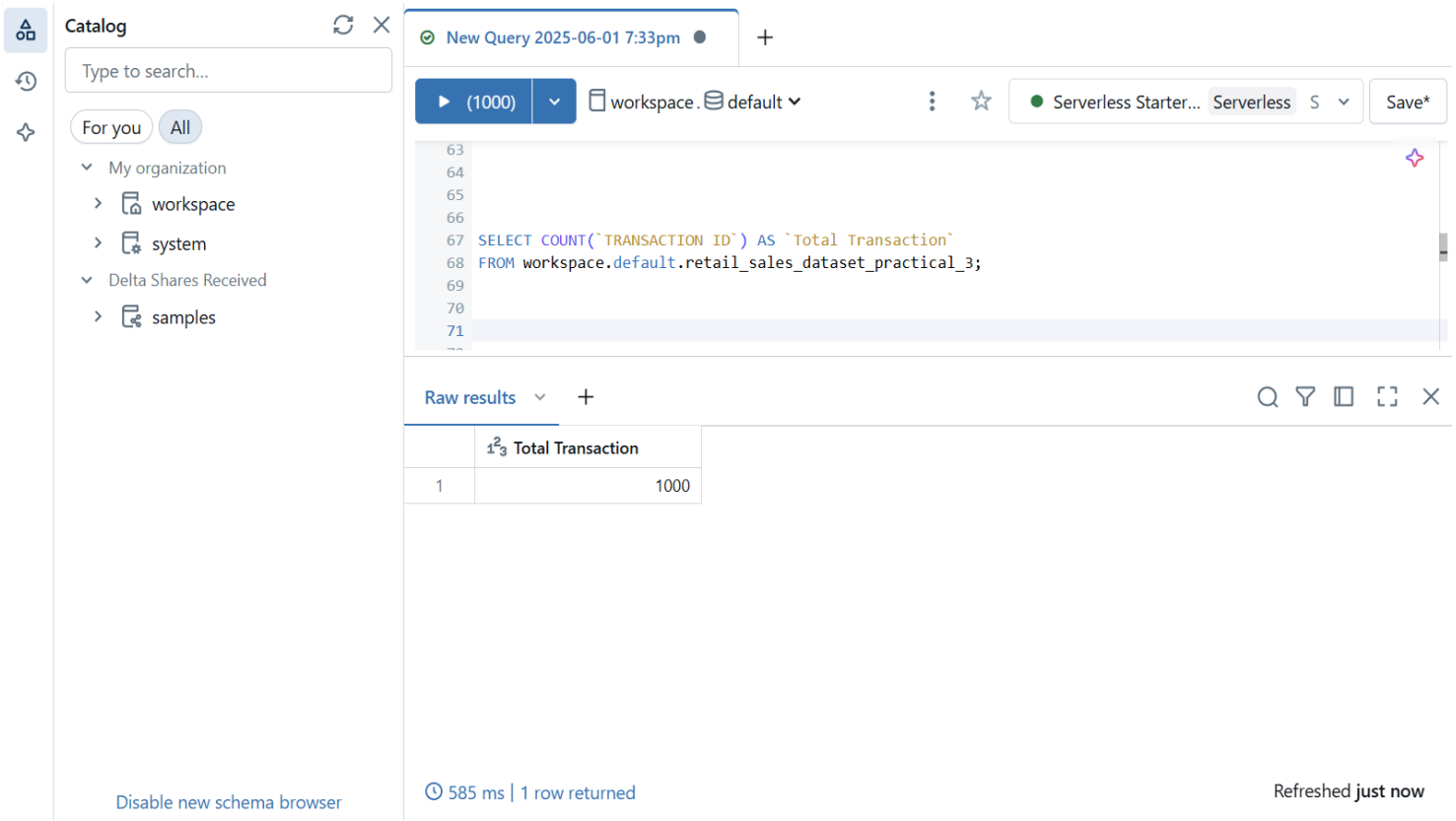
8. **WHERE Clause.** Display all transactions where the Product Category is not 'Clothing'. Expected output: All columns.



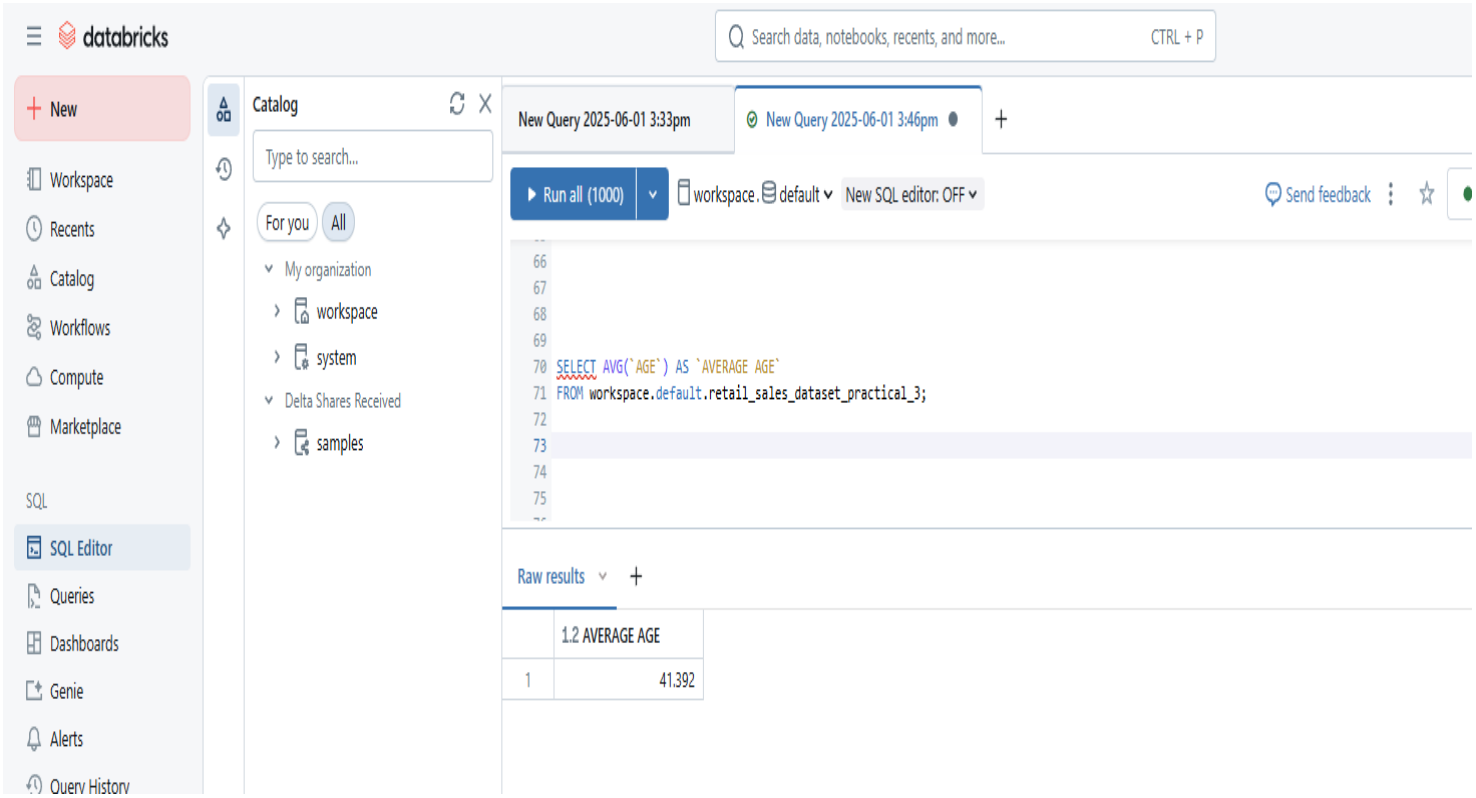
9. **WHERE Clause.** Display all transactions where the Quantity is greater than or equal to 3. Expected output: All columns.



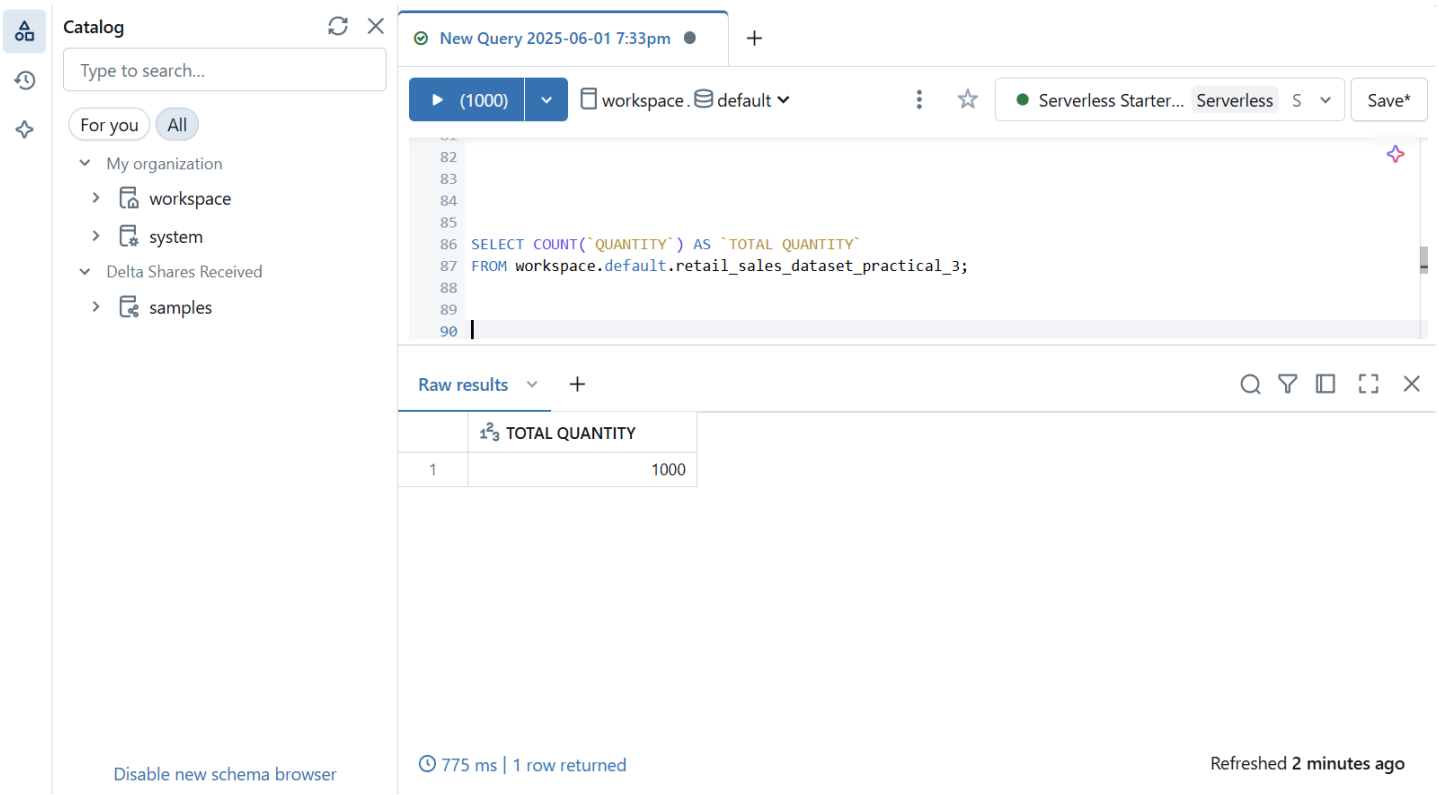
10. **Aggregate Functions.** Count the total number of transactions. Expected output: Total Transactions.



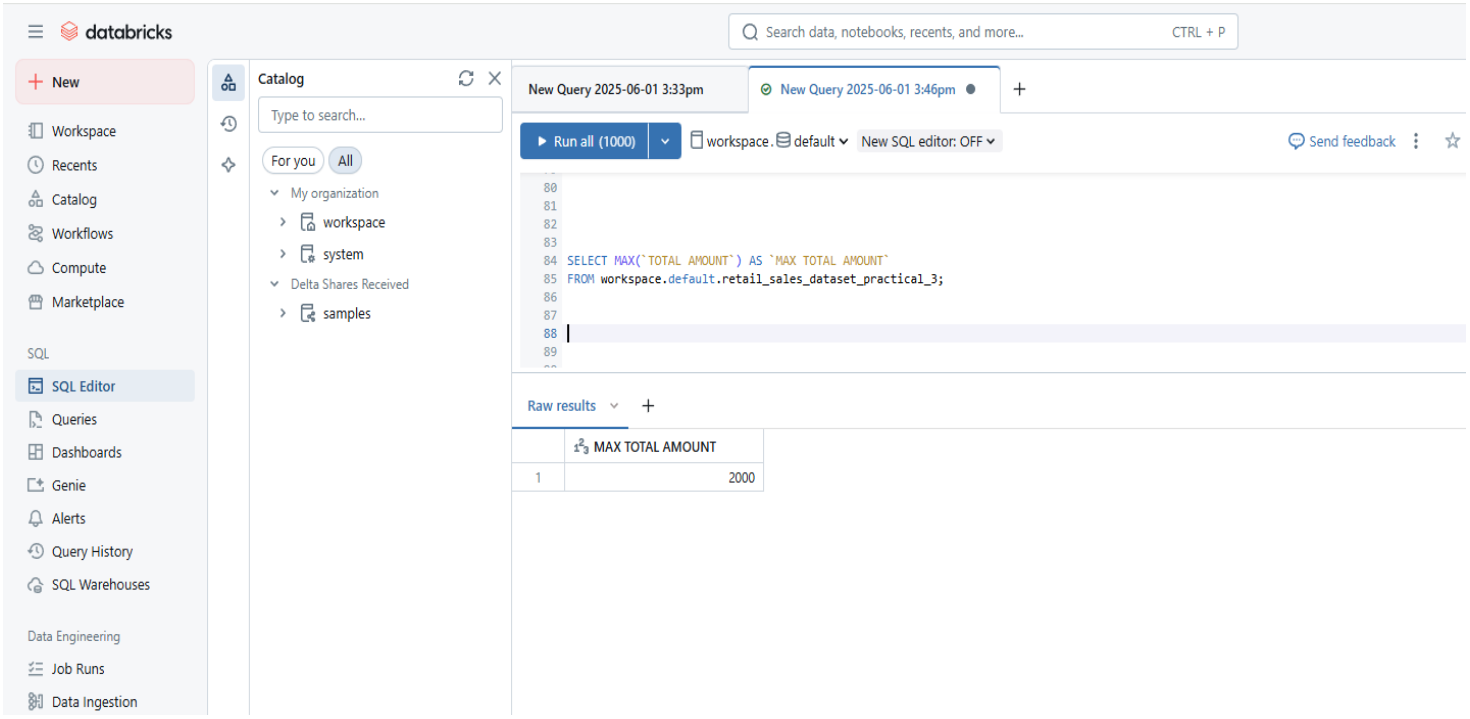
11. **Aggregate Functions.** Find the average Age of customers. Expected output: Average_Age.



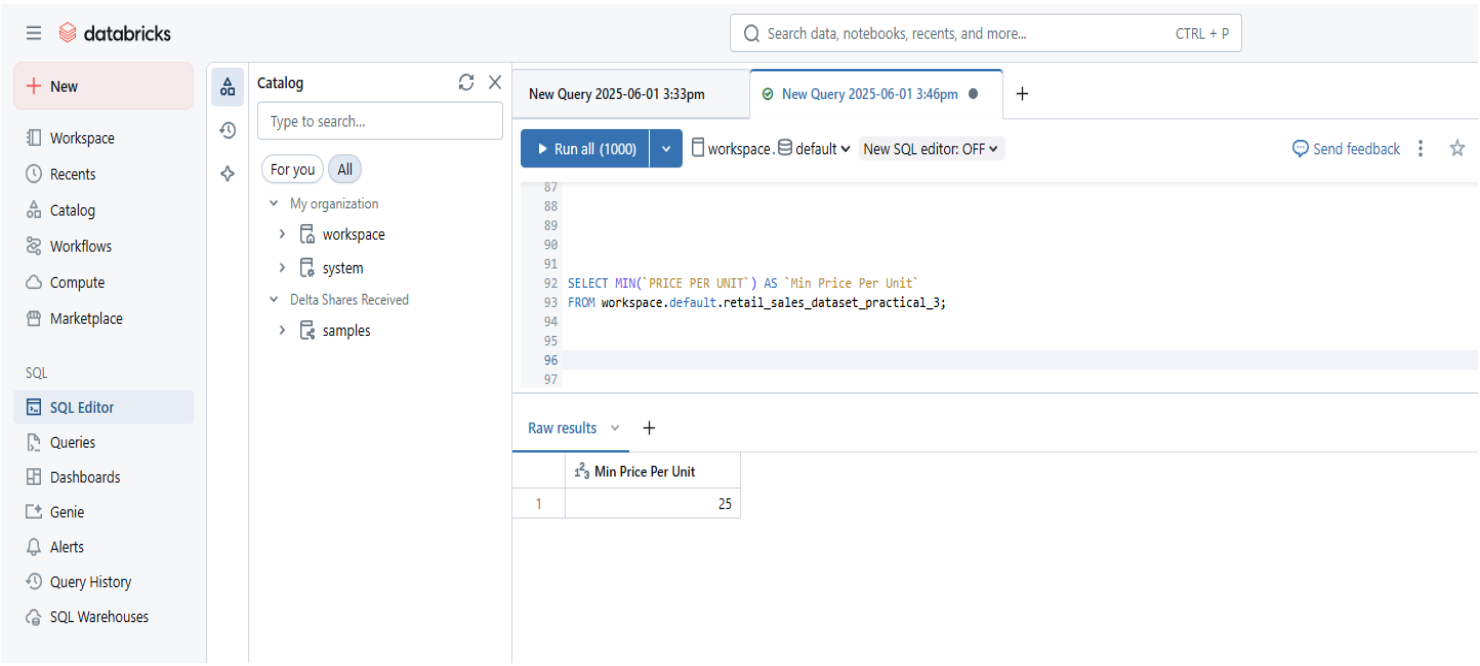
12. **Aggregate Functions.** Find the total quantity of products sold. Expected output: Total_Quantity.



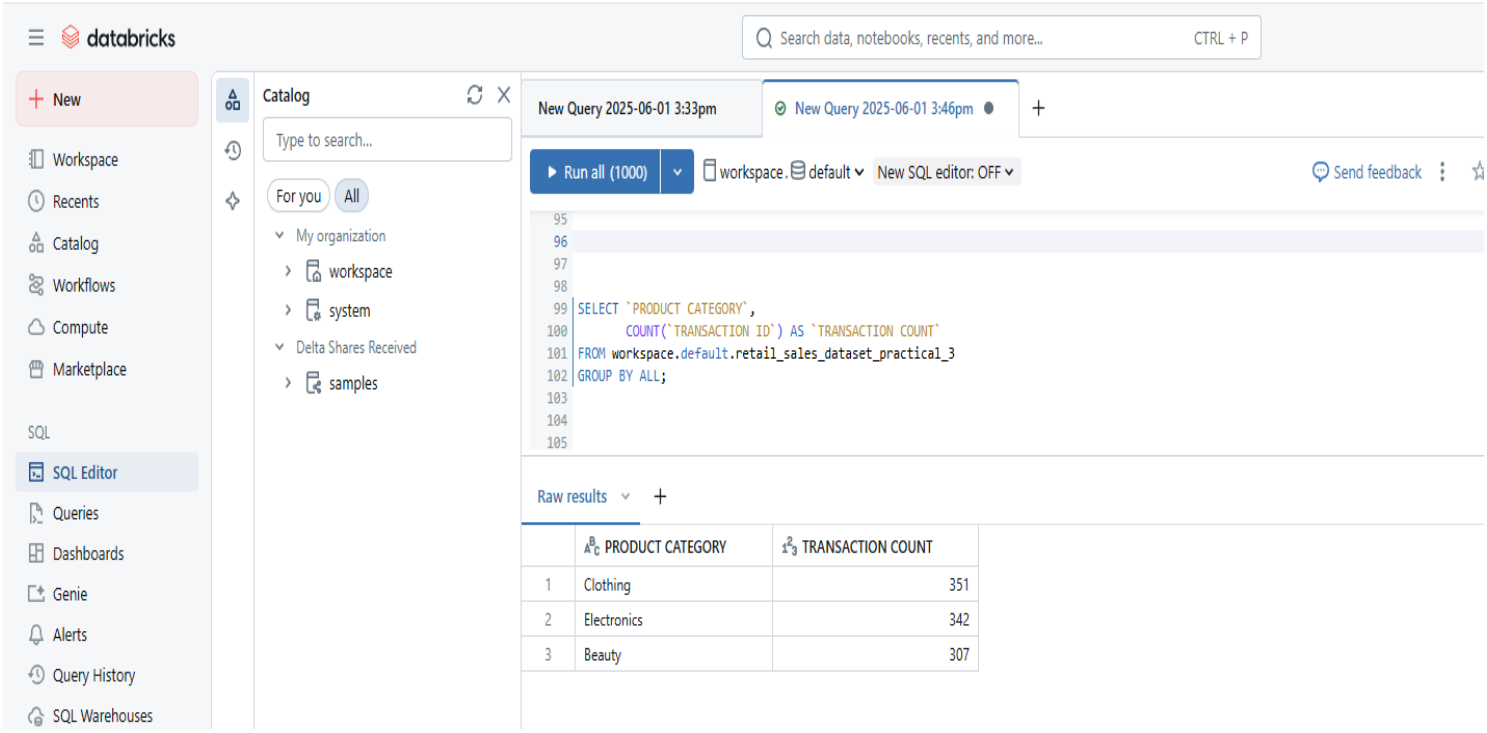
13. **Aggregate Functions.** Find the maximum Total Amount spent in a single transaction. Expected output: Max_Total_Amount.



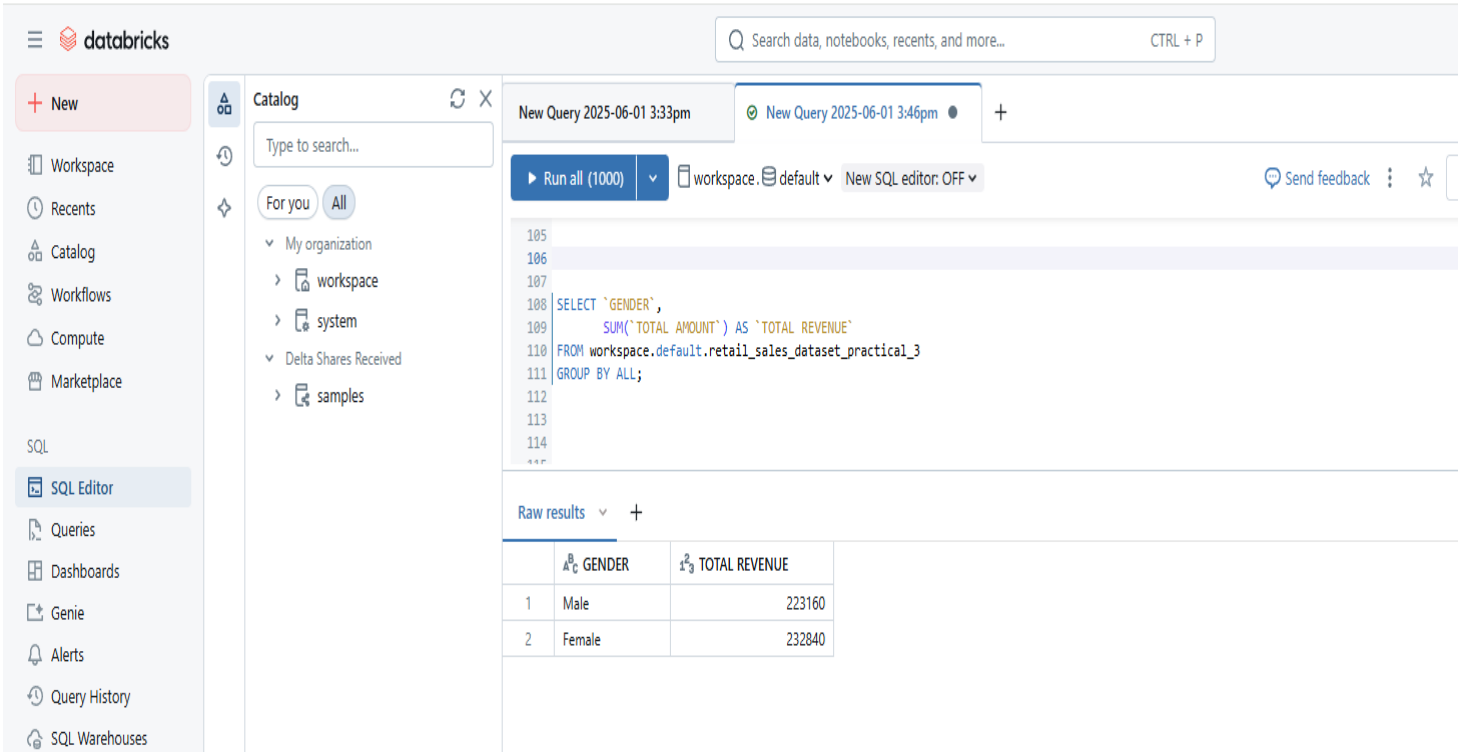
14. **Aggregate Functions.** Find the minimum Price per Unit in the dataset. Expected output: Min_Price_per_Unit.



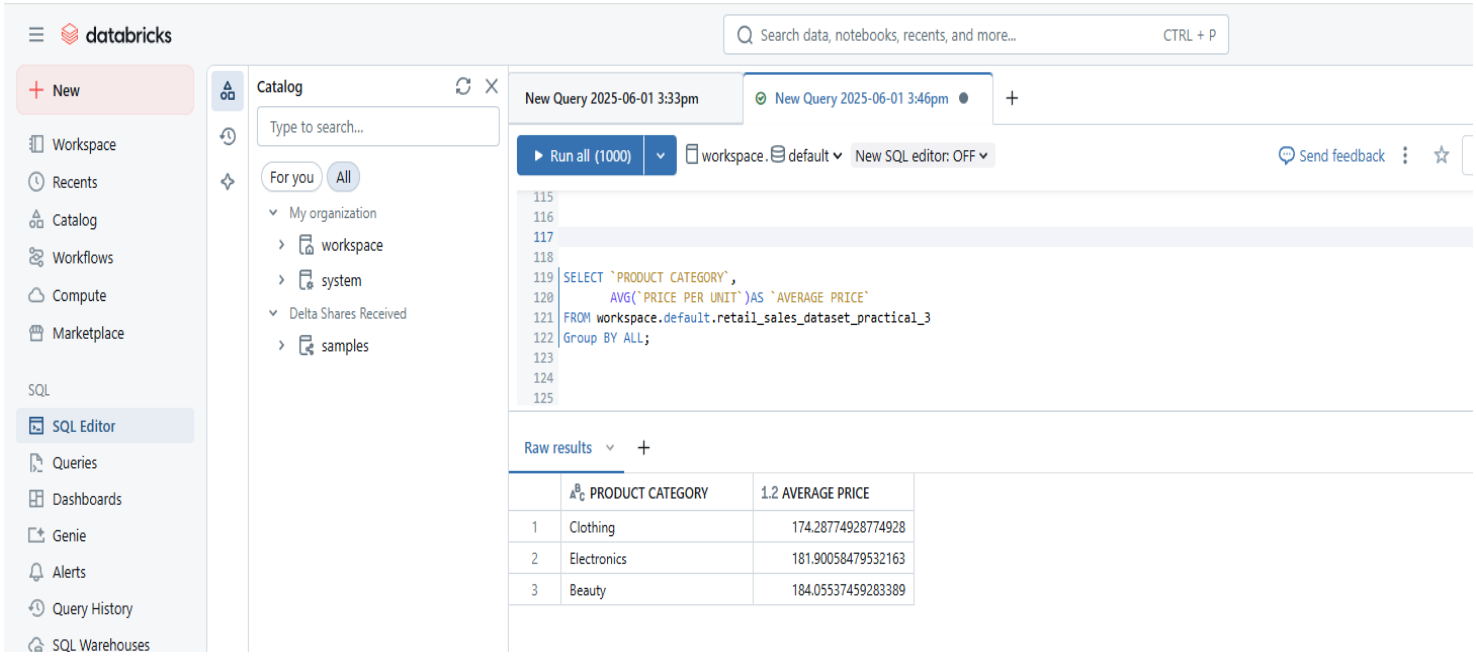
15. **GROUP BY Statement.** Find the number of transactions per Product Category. Expected output: Product Category, Transaction_Count.



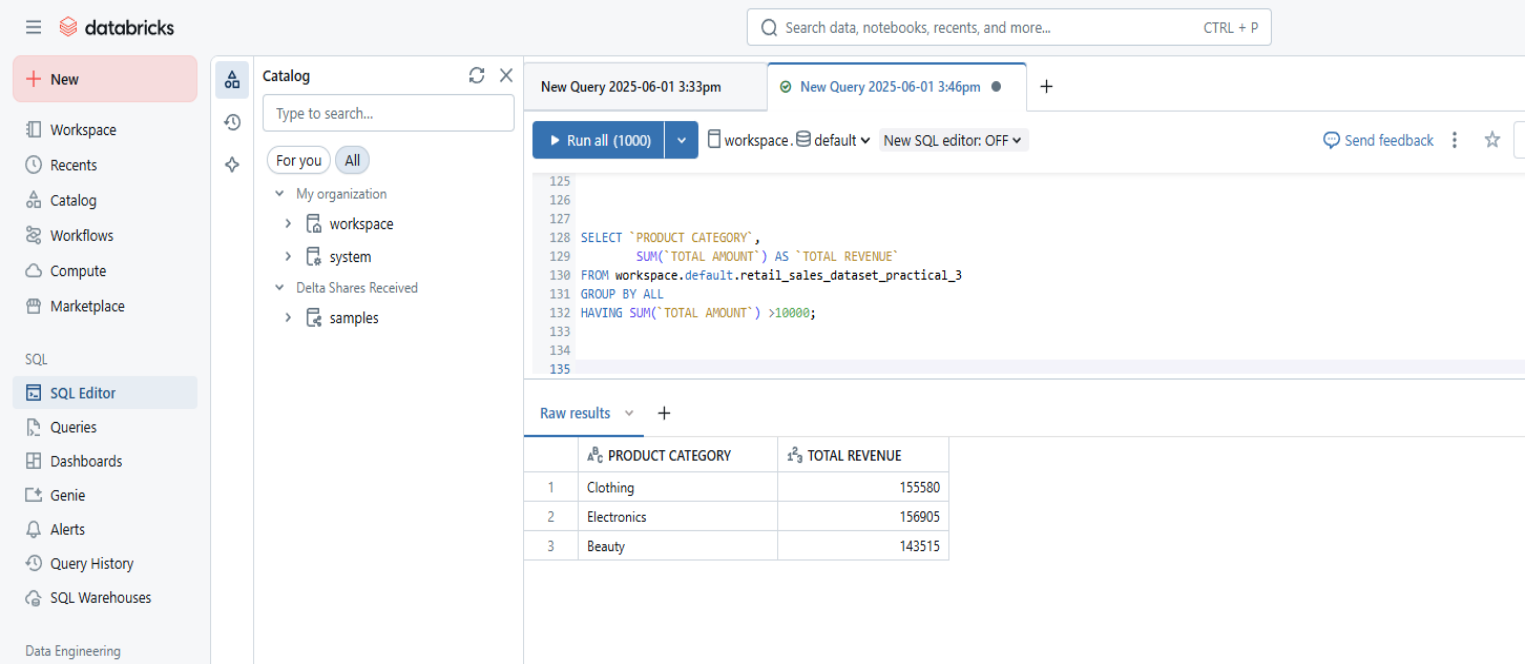
16. **GROUP BY Statement.** Find the total revenue (Total Amount) per gender. Expected output: Gender, Total_Revenue.



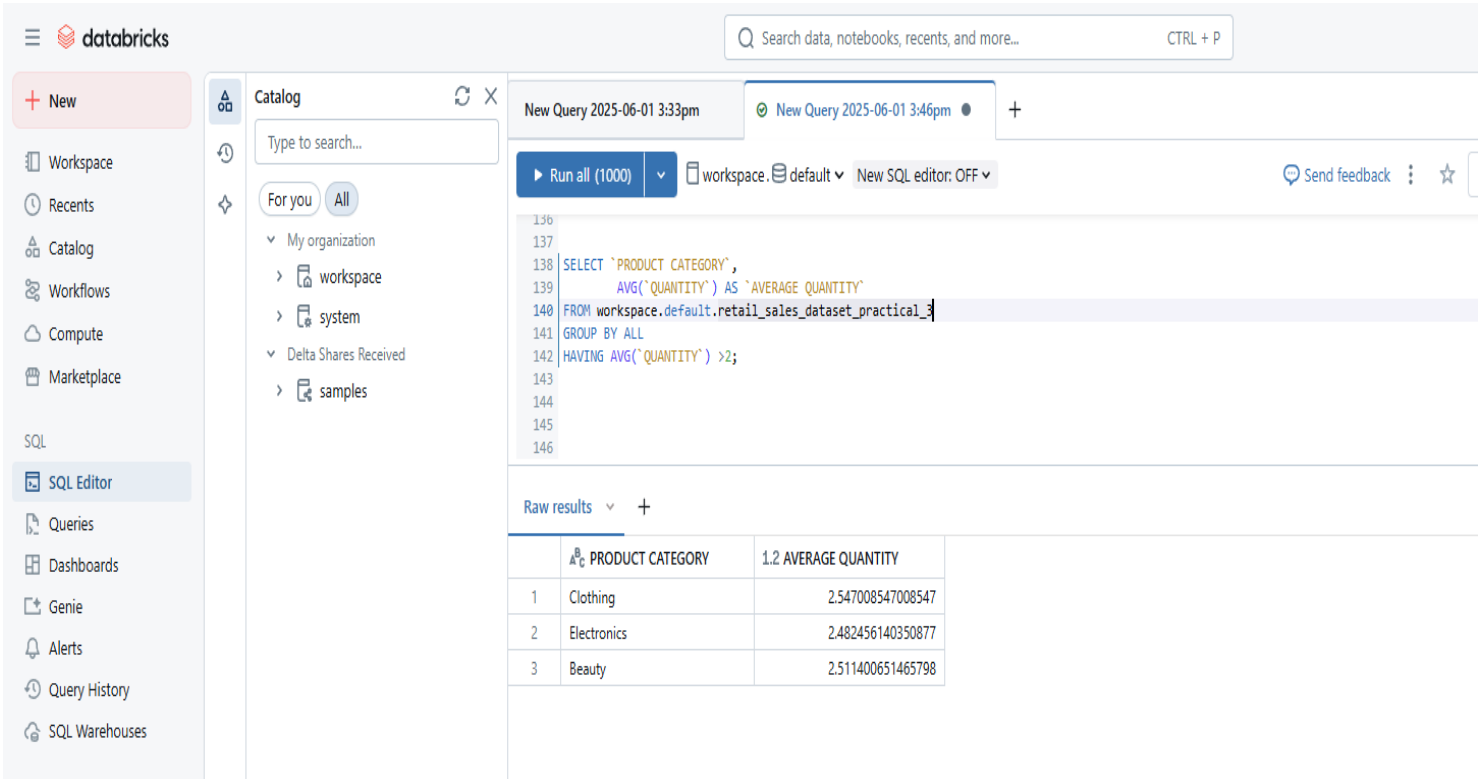
17. **GROUP BY Statement.** Find the average Price per Unit per product category. Expected output: Product Category, Average_Price.



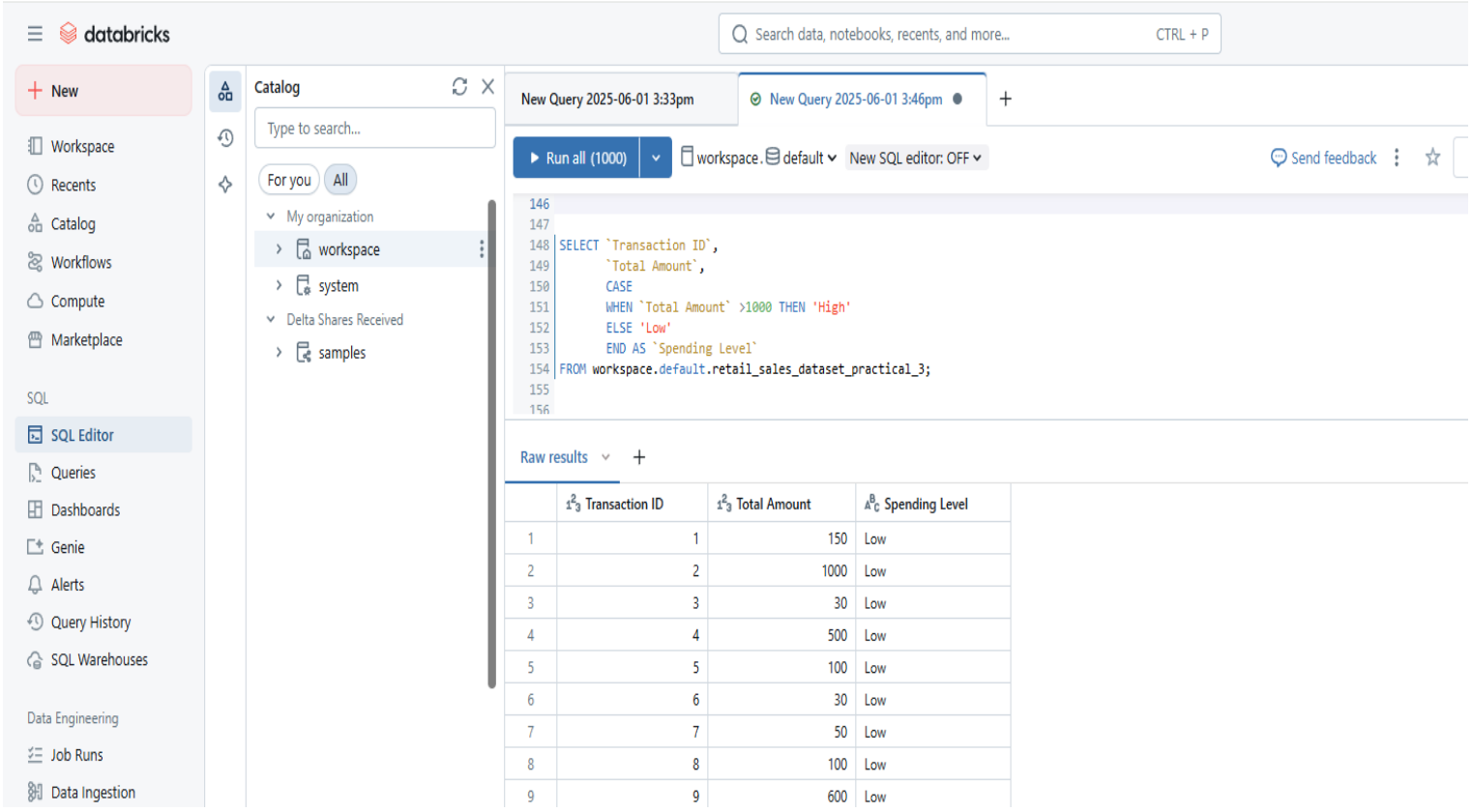
18. **HAVING Clause.** Find the total revenue per product category where total revenue is greater than 10,000. Expected output: Product Category, Total_Revenue.



19. **HAVING Clause.** Find the average quantity per product category where the average is more than 2. Expected output: Product Category, Average_Quantity.



20. **CASE Statement.** Display a column called Spending_Level that shows 'High' if Total Amount > 1000, otherwise 'Low'. Expected output: Transaction ID, Total Amount, Spending_Level.



21. **CASE Statement.** Display a new column called Age_Group that labels customers as: • 'Youth' if Age < 30 • 'Adult' if Age is between 30 and 59 • 'Senior' if Age >= 60 Expected output: Customer ID, Age, Age_Group.