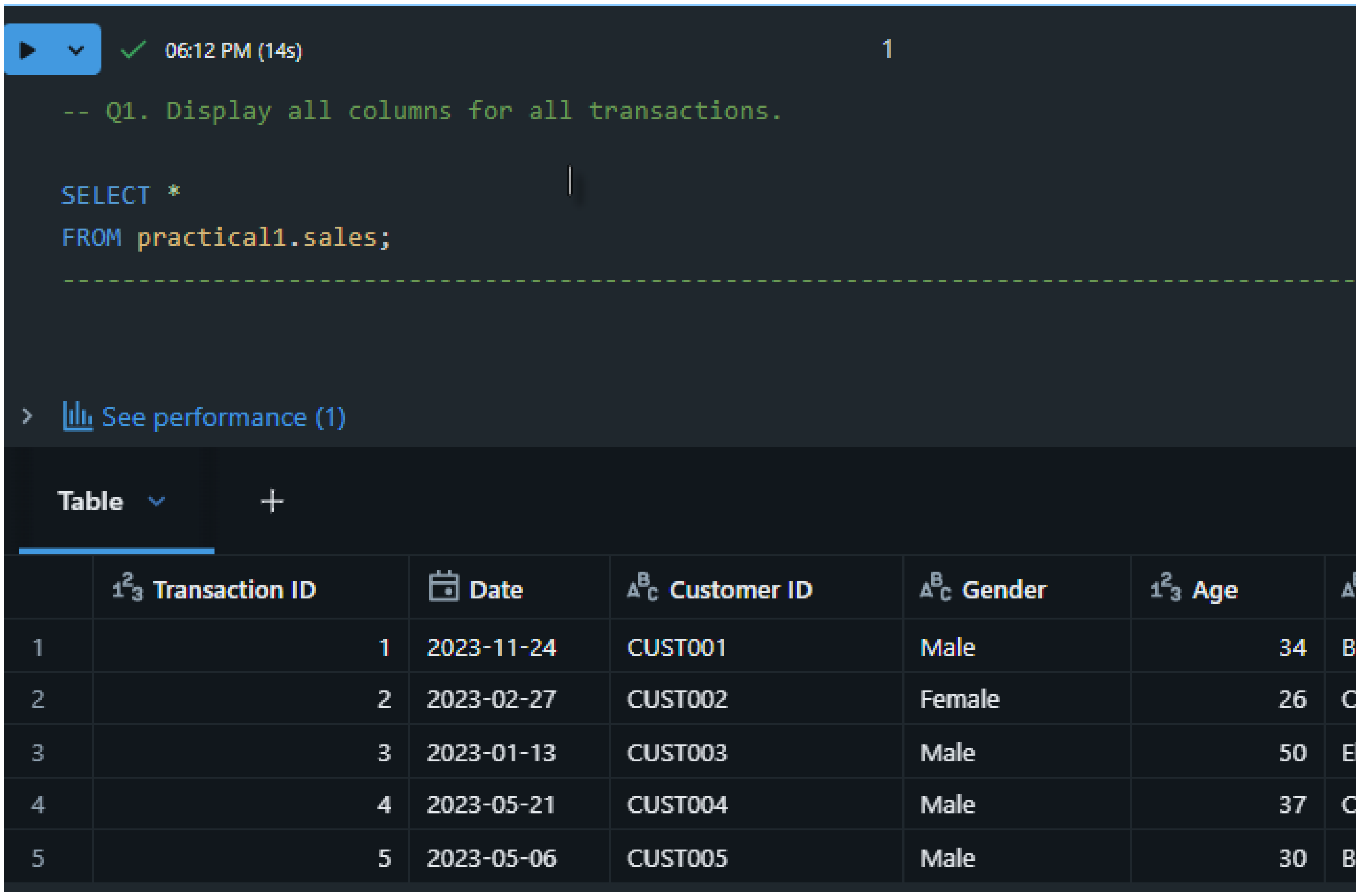
NOLWAZI NDIWENI

PRACTICAL 1: BASIC SQL SYNTAX

Question 1


06:12 PM (14s)

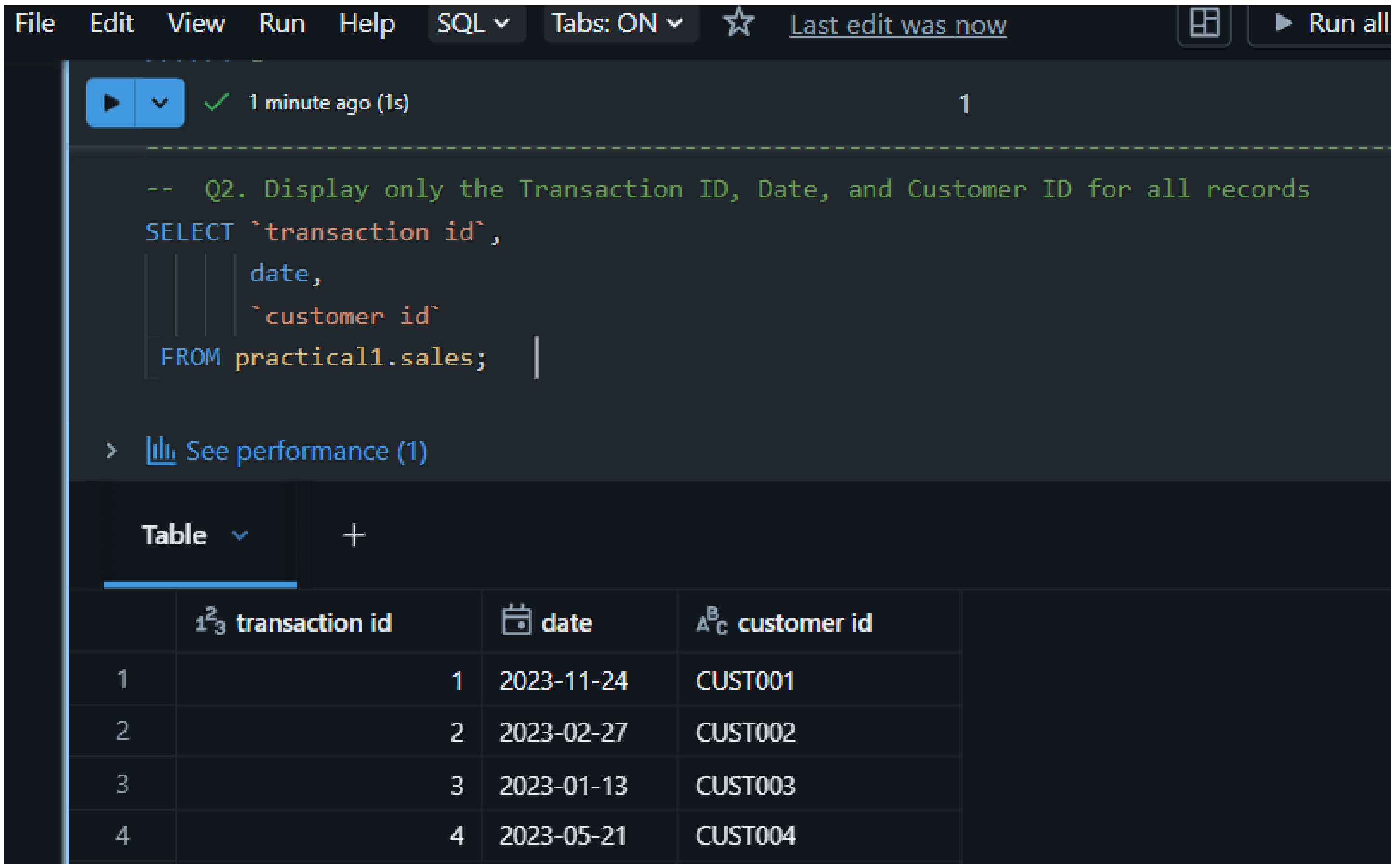
```
-- Q1. Display all columns for all transactions.

SELECT *
FROM practical1.sales;
------------------------------------------------------------------------
```

See performance (1)

Table

	Transaction ID	Date	Customer ID	Gender	Age
1	1	2023-11-24	CUST001	Male	34
2	2	2023-02-27	CUST002	Female	26
3	3	2023-01-13	CUST003	Male	50
4	4	2023-05-21	CUST004	Male	37
5	5	2023-05-06	CUST005	Male	30

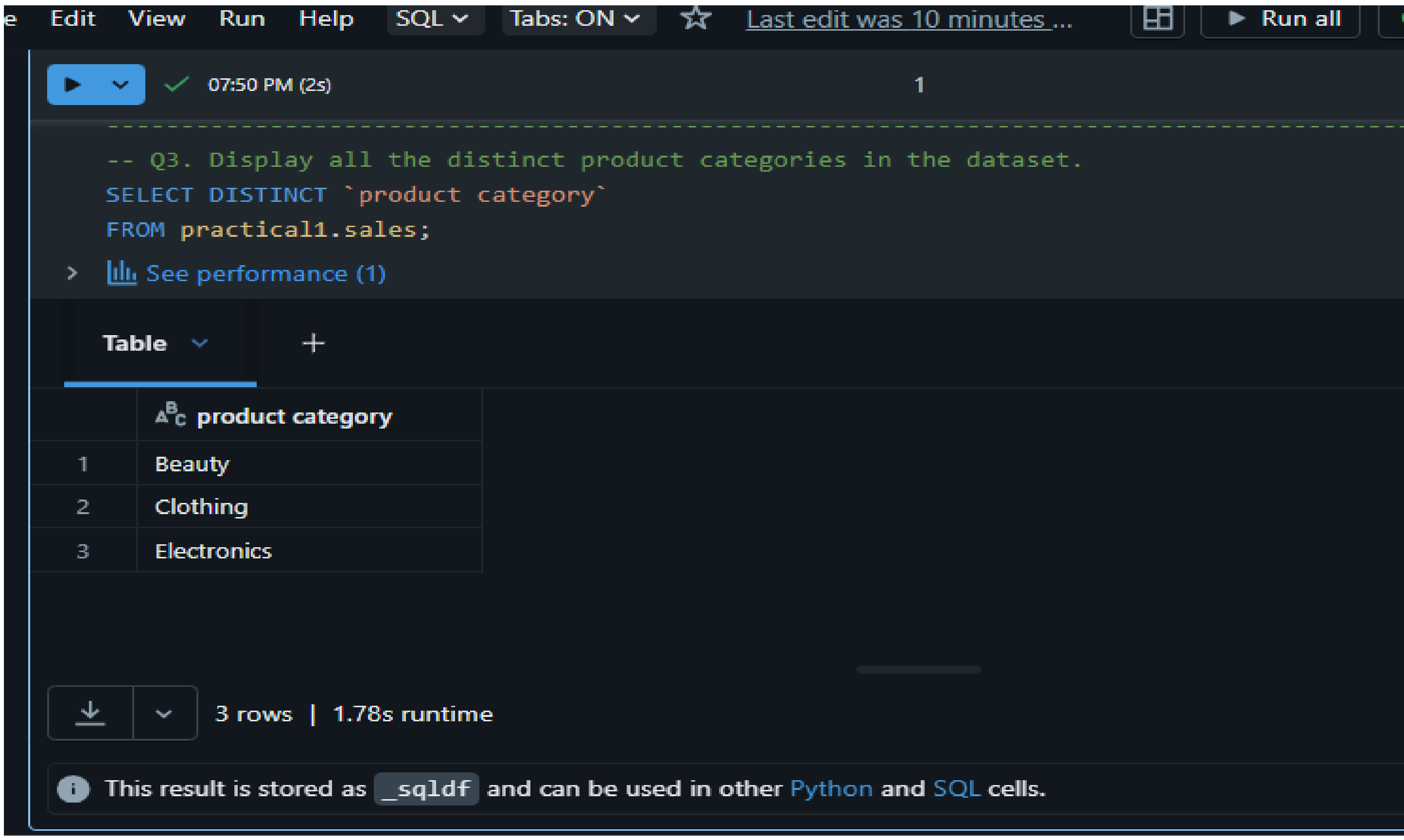
Question 2



```sql
-- Q2. Display only the Transaction ID, Date, and Customer ID for all records
SELECT `transaction id`,
       date,
       `customer id`
 FROM practical1.sales;
```

	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

QUESTION 3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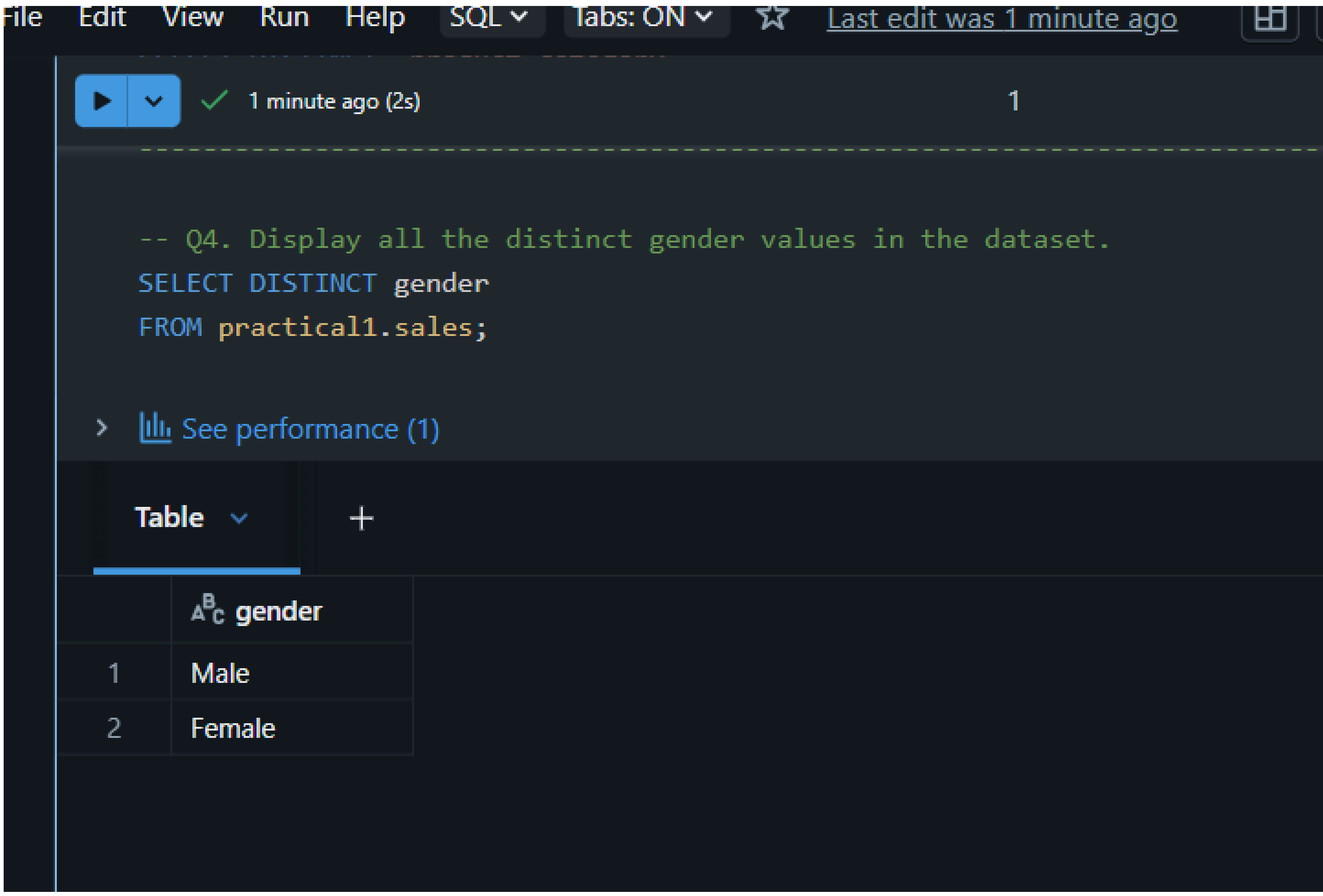
```sql
-----------------------------------------------------------------------------
-- Q3. Display all the distinct product categories in the dataset.
SELECT DISTINCT `product category`
FROM practical1.sales;
```

	product category
1	Beauty
2	Clothing
3	Electronics

3 rows | 1.78s runtime

This result is stored as `_sqldf` and can be used in other Python and SQL cells.

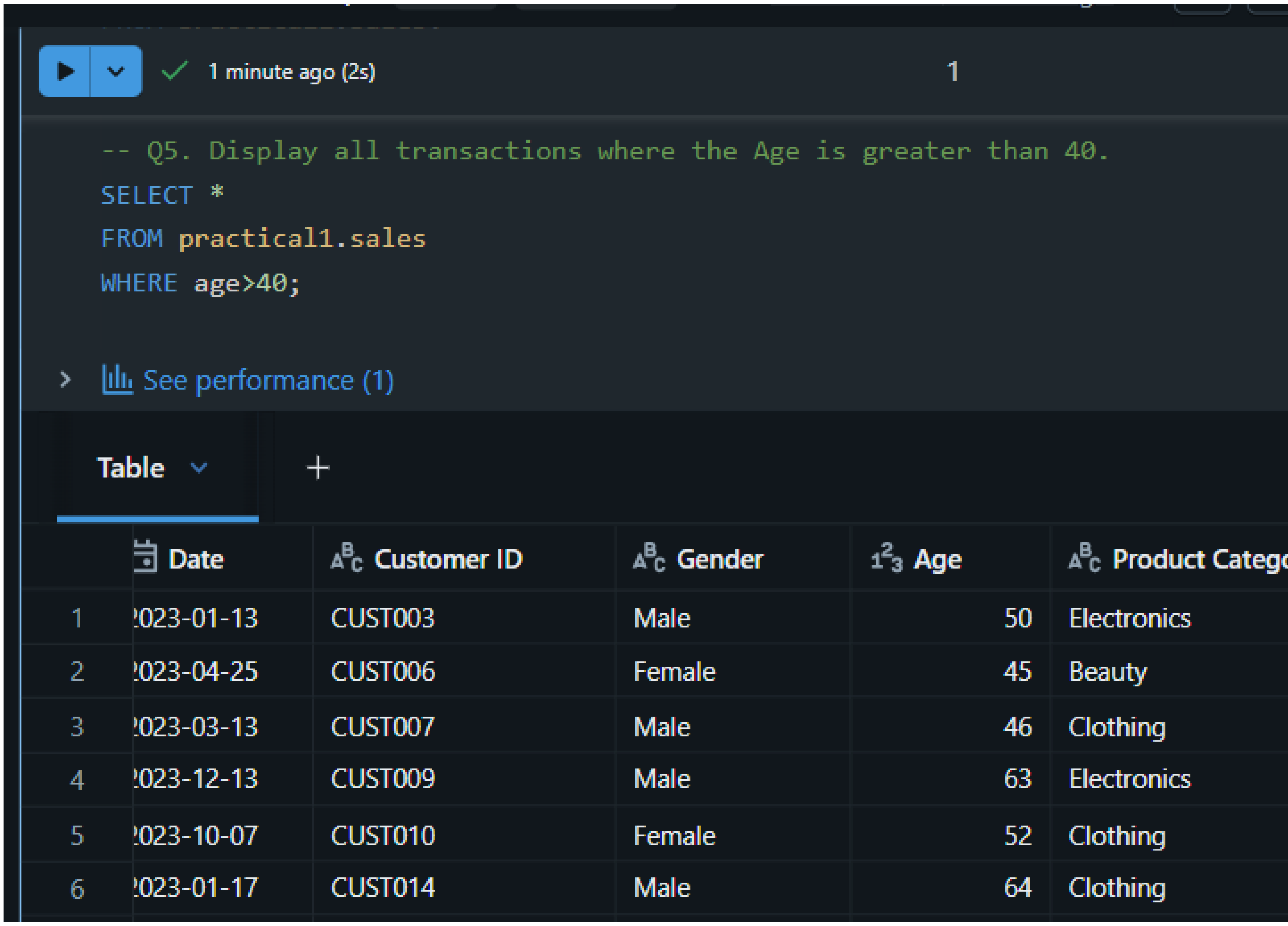
QUESTION 4


File Edit View Run Help SQL Tabs: ON Last edit was 1 minute ago
1 minute ago (2s)
See performance (1)
Table

```
-- Q4. Display all the distinct gender values in the dataset.
SELECT DISTINCT gender
FROM practical1.sales;
```

	gender
1	Male
2	Female

QUESTION 5


1 minute ago (2s)

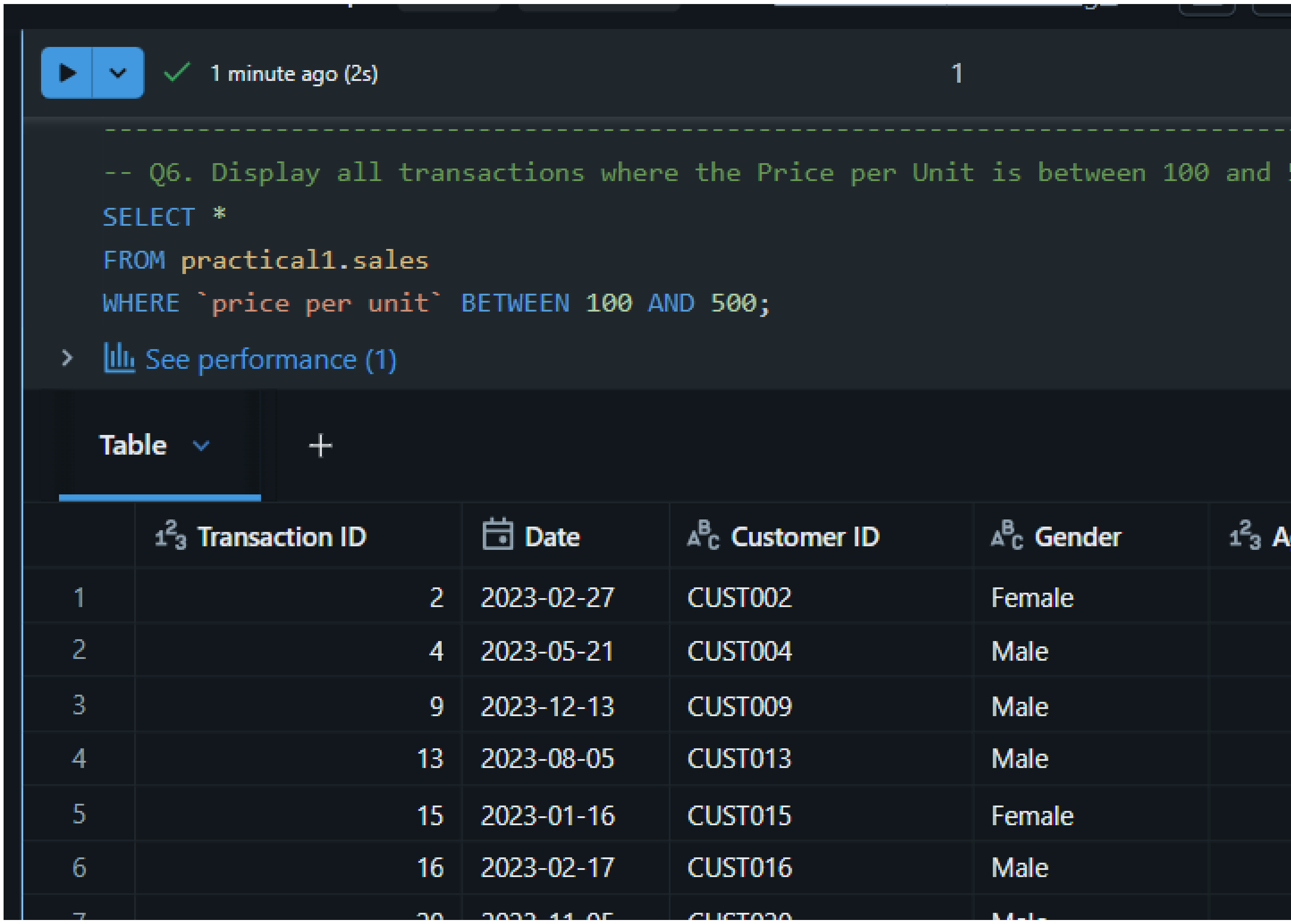
```
-- Q5. Display all transactions where the Age is greater than 40.
SELECT *
FROM practical1.sales
WHERE age>40;
```

See performance (1)

Table

	Date	Customer ID	Gender	Age	Product Catego
1	!023-01-13	CUST003	Male	50	Electronics
2	!023-04-25	CUST006	Female	45	Beauty
3	!023-03-13	CUST007	Male	46	Clothing
4	!023-12-13	CUST009	Male	63	Electronics
5	!023-10-07	CUST010	Female	52	Clothing
6	!023-01-17	CUST014	Male	64	Clothing

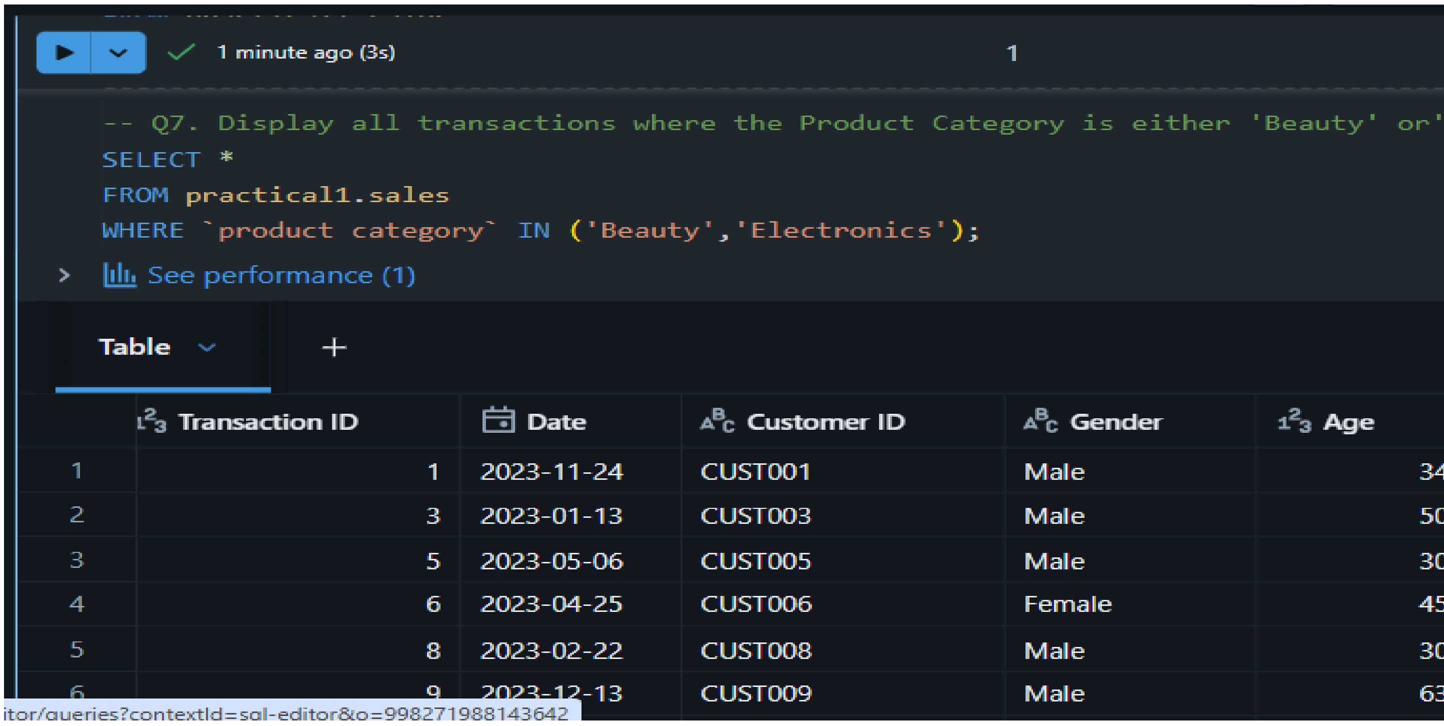
QUESTION 6



```
------------------------------------------------------------------------
-- Q6. Display all transactions where the Price per Unit is between 100 and
SELECT *
FROM practical1.sales
WHERE `price per unit` BETWEEN 100 AND 500;
```

	Transaction ID	Date	Customer ID	Gender	A
1	2	2023-02-27	CUST002	Female	
2	4	2023-05-21	CUST004	Male	
3	9	2023-12-13	CUST009	Male	
4	13	2023-08-05	CUST013	Male	
5	15	2023-01-16	CUST015	Female	
6	16	2023-02-17	CUST016	Male	

QUESTION 7



1 minute ago (3s)

```
-- Q7. Display all transactions where the Product Category is either 'Beauty' or'
SELECT *
FROM practical1.sales
WHERE `product category` IN ('Beauty','Electronics');
```

See performance (1)

Table

	Transaction ID	Date	Customer ID	Gender	Age
1	1	2023-11-24	CUST001	Male	34
2	3	2023-01-13	CUST003	Male	50
3	5	2023-05-06	CUST005	Male	30
4	6	2023-04-25	CUST006	Female	45
5	8	2023-02-22	CUST008	Male	30
6	9	2023-12-13	CUST009	Male	63

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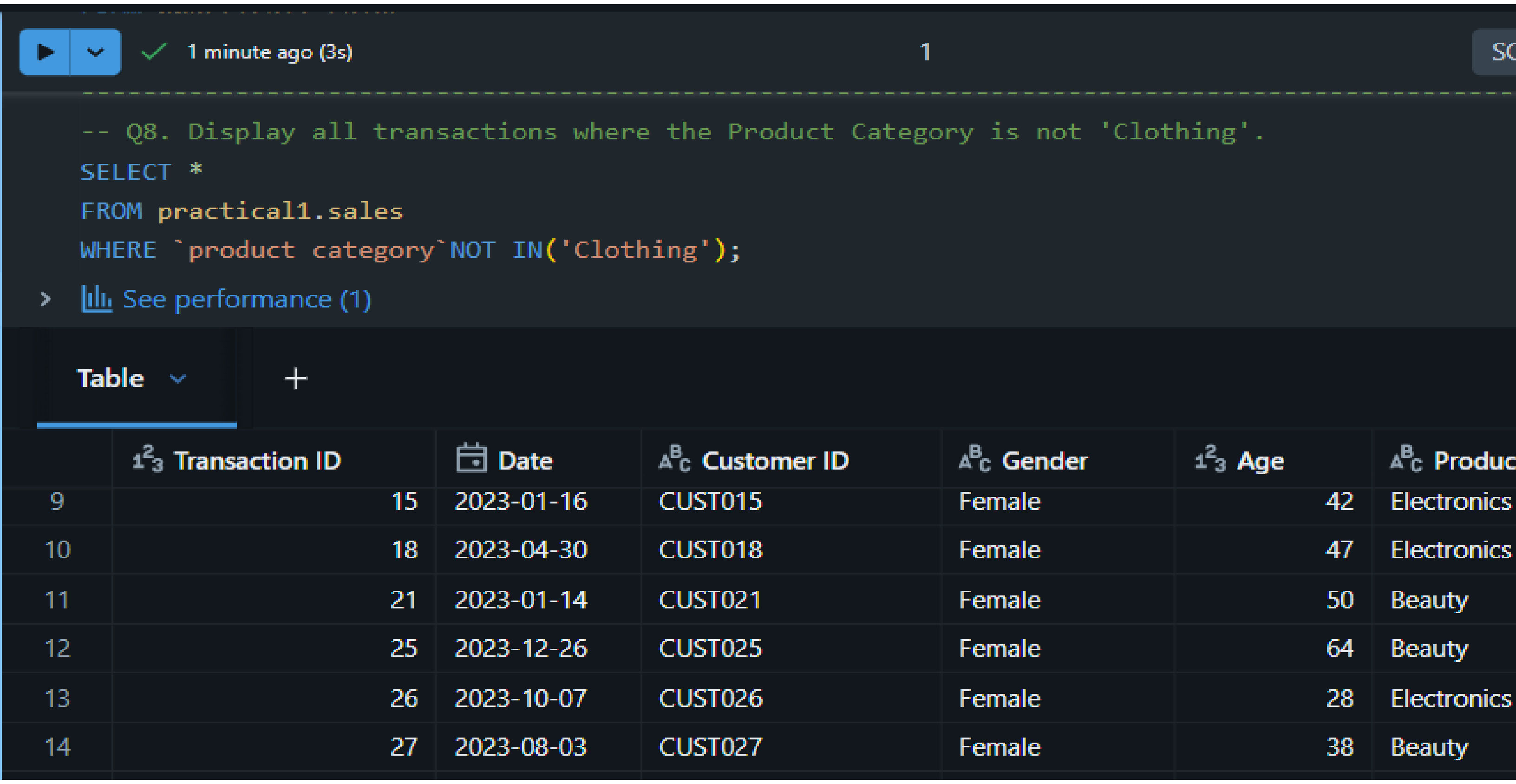
QUESTION 8



1 minute ago (3s)

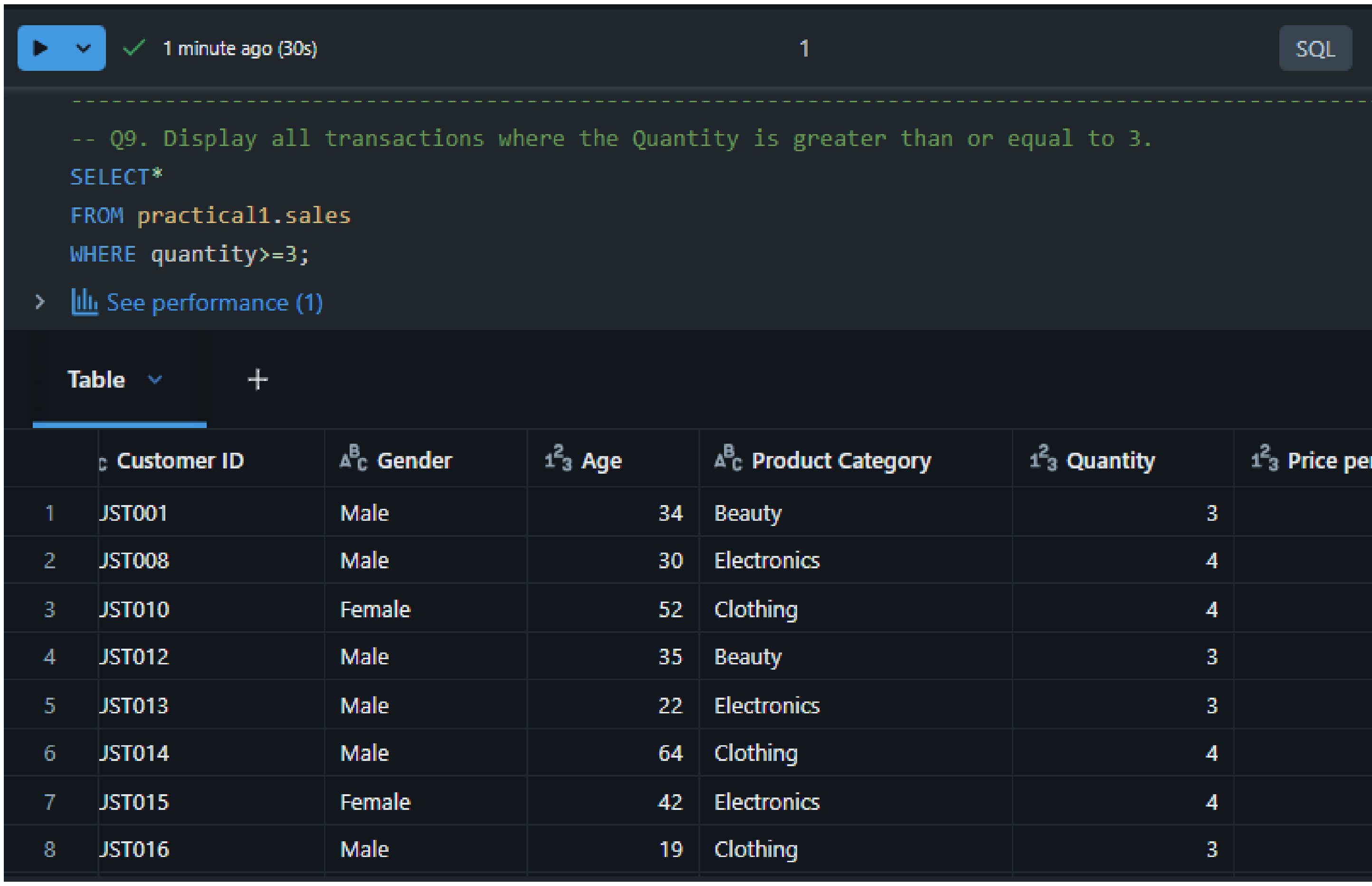
```
-- Q8. Display all transactions where the Product Category is not 'Clothing'.
SELECT *
FROM practical1.sales
WHERE `product category`NOT IN('Clothing');
```

See performance (1)

Table

	Transaction ID	Date	Customer ID	Gender	Age	Produc
9	15	2023-01-16	CUST015	Female	42	Electronics
10	18	2023-04-30	CUST018	Female	47	Electronics
11	21	2023-01-14	CUST021	Female	50	Beauty
12	25	2023-12-26	CUST025	Female	64	Beauty
13	26	2023-10-07	CUST026	Female	28	Electronics
14	27	2023-08-03	CUST027	Female	38	Beauty

QUESTION 9



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1

SQL

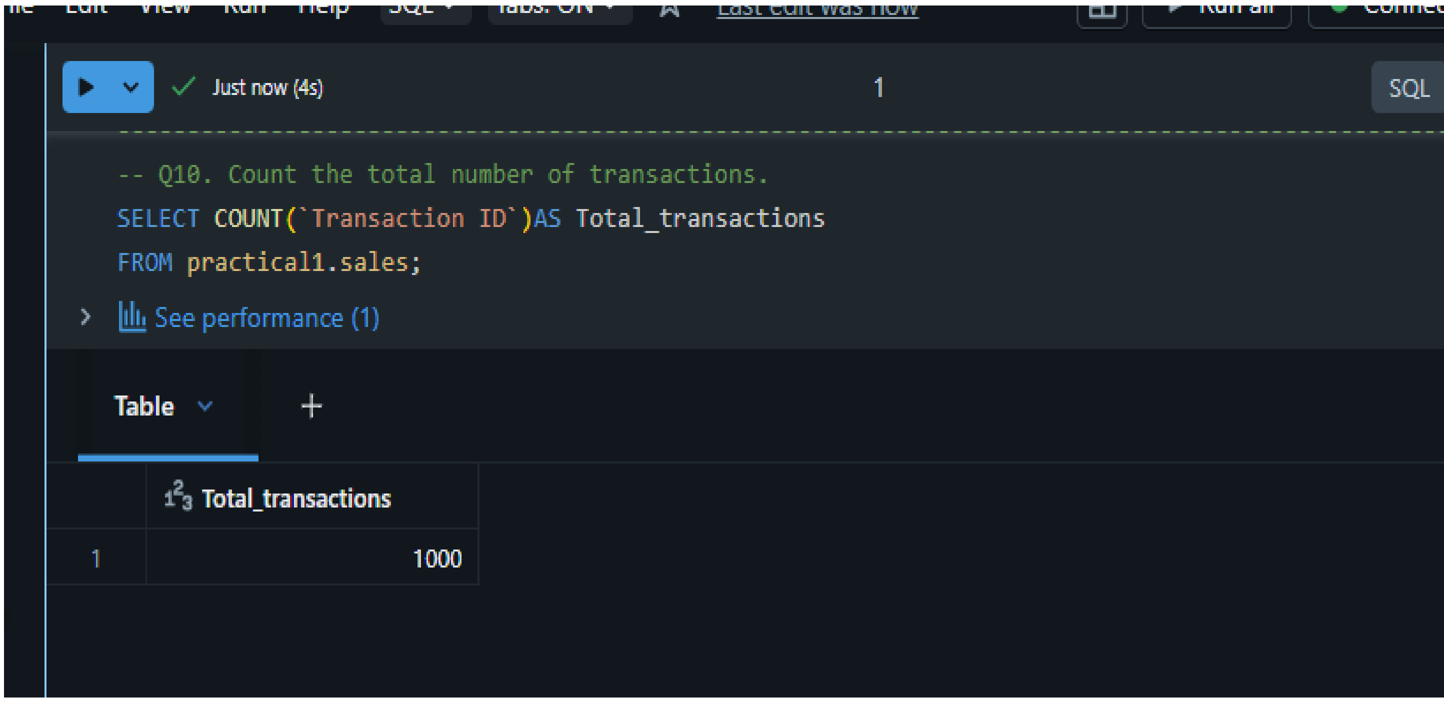
```
-----------------------------------------------------------------------------------------
-- Q9. Display all transactions where the Quantity is greater than or equal to 3.
SELECT*
FROM practical1.sales
WHERE quantity>=3;
```

See performance (1)

Table

	Customer ID	Gender	Age	Product Category	Quantity	Price pe
1	JST001	Male	34	Beauty	3	
2	JST008	Male	30	Electronics	4	
3	JST010	Female	52	Clothing	4	
4	JST012	Male	35	Beauty	3	
5	JST013	Male	22	Electronics	3	
6	JST014	Male	64	Clothing	4	
7	JST015	Female	42	Electronics	4	
8	JST016	Male	19	Clothing	3	

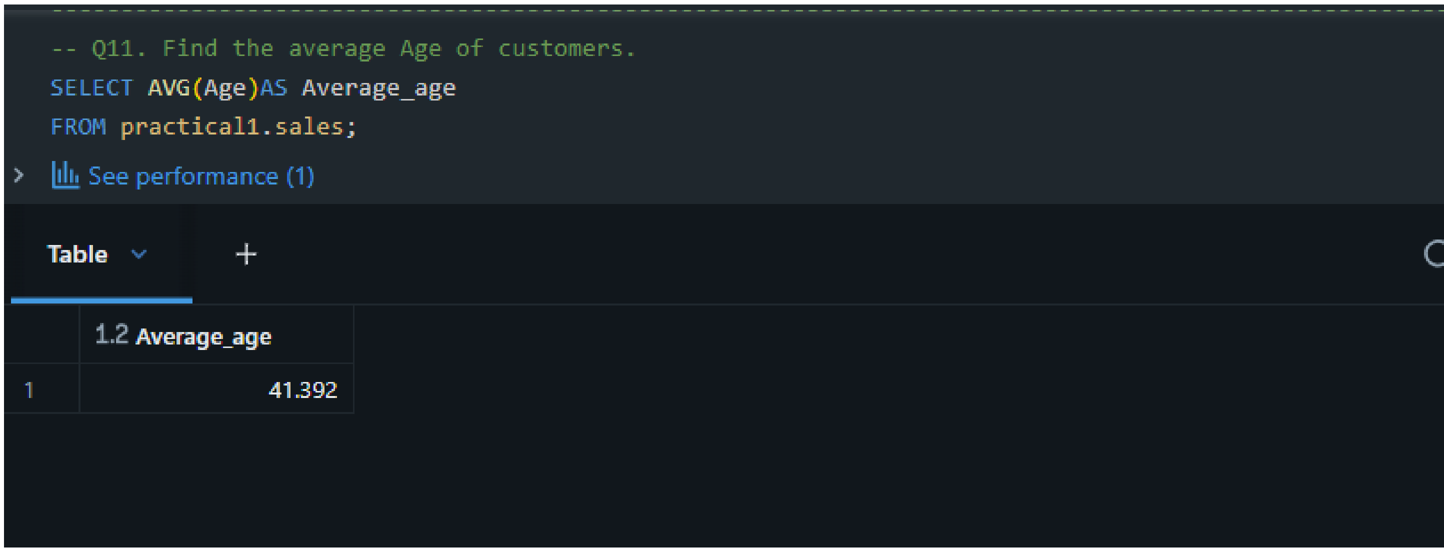
QUESTION 10



```
-- Q10. Count the total number of transactions.
SELECT COUNT(`Transaction ID`)AS Total_transactions
FROM practical1.sales;
```

```
  Total_transactions
1               1000
```

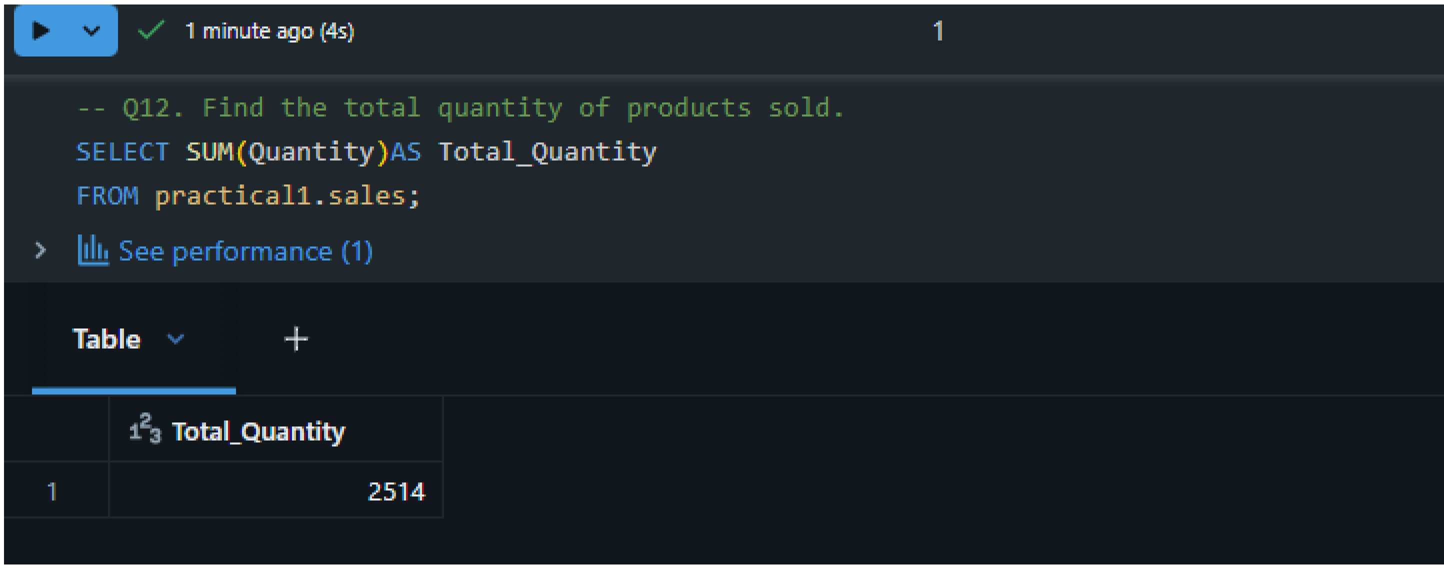
QUESTION 11



```
-- Q11. Find the average Age of customers.
SELECT AVG(Age)AS Average_age
FROM practical1.sales;
```

```
  1.2 Average_age
1          41.392
```

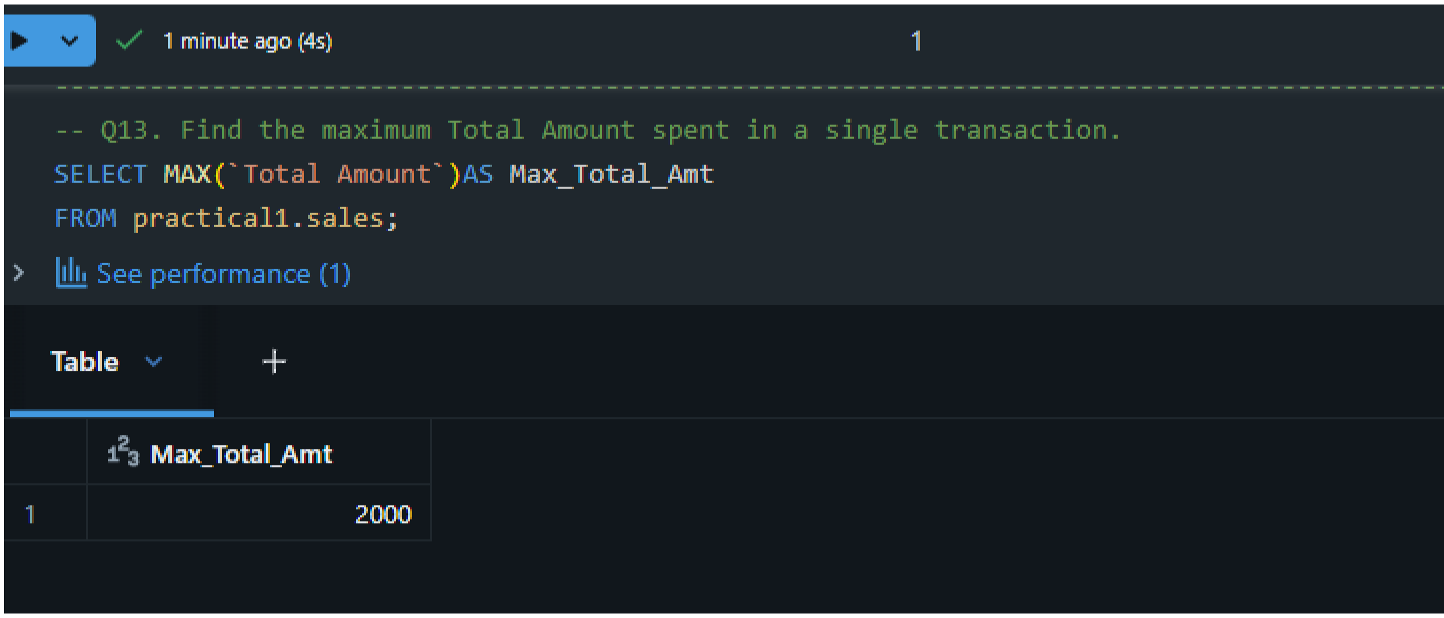
QUESTION 12



```sql
-- Q12. Find the total quantity of products sold.
SELECT SUM(Quantity)AS Total_Quantity
FROM practical1.sales;
```

```
   Total_Quantity
1            2514
```

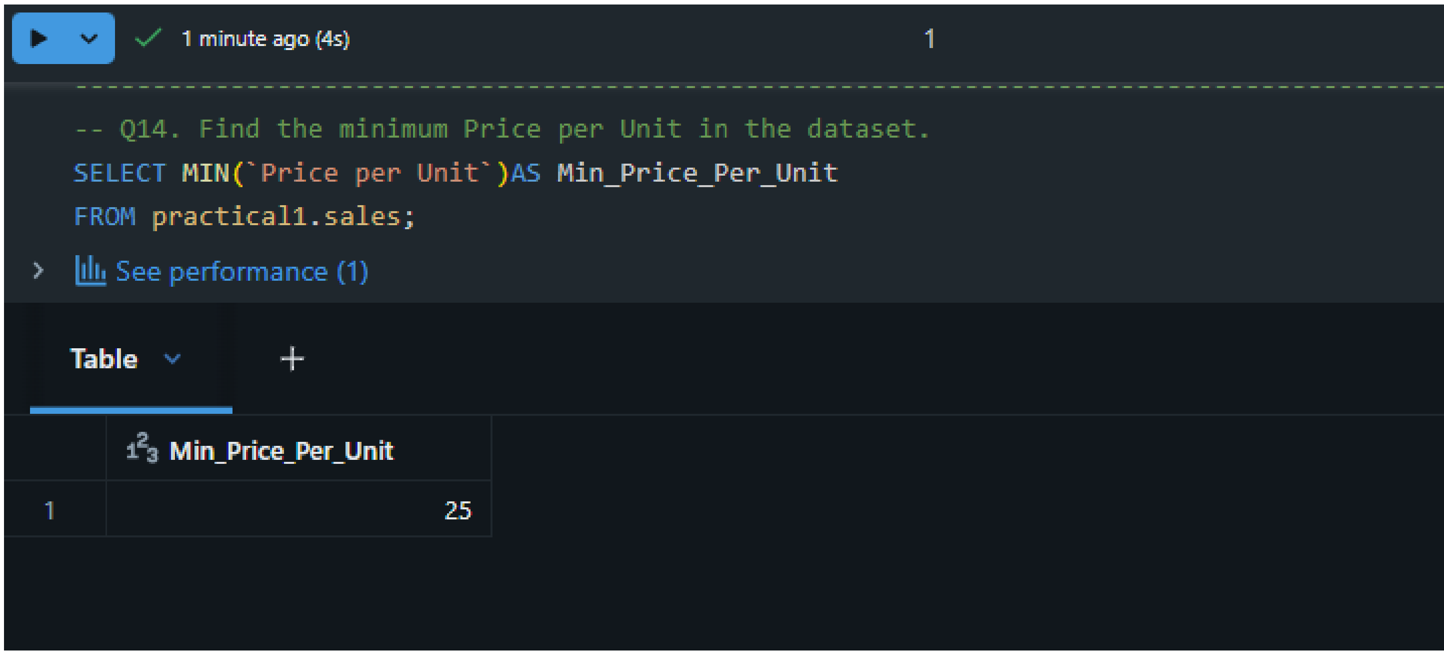
QUESTION 13



```sql
------------------------------------------------------------------------------
-- Q13. Find the maximum Total Amount spent in a single transaction.
SELECT MAX(`Total Amount`)AS Max_Total_Amt
FROM practical1.sales;
```

```
   Max_Total_Amt
1           2000
```

QUESTION 14



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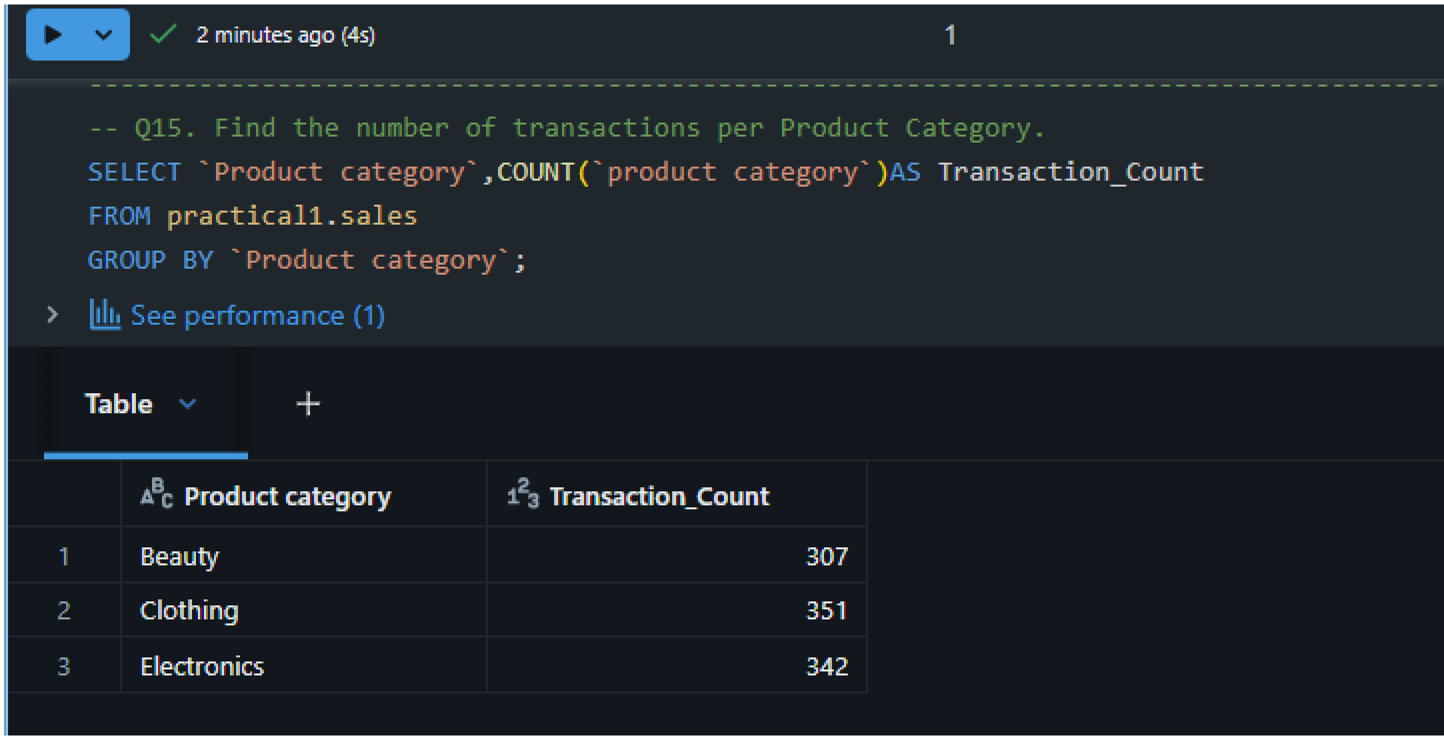
```
------------------------------------------------------------------------------------
-- Q14. Find the minimum Price per Unit in the dataset.
SELECT MIN(`Price per Unit`)AS Min_Price_Per_Unit
FROM practical1.sales;
```

See performance (1)

Table

	Min_Price_Per_Unit
1	25

QUESTION 15



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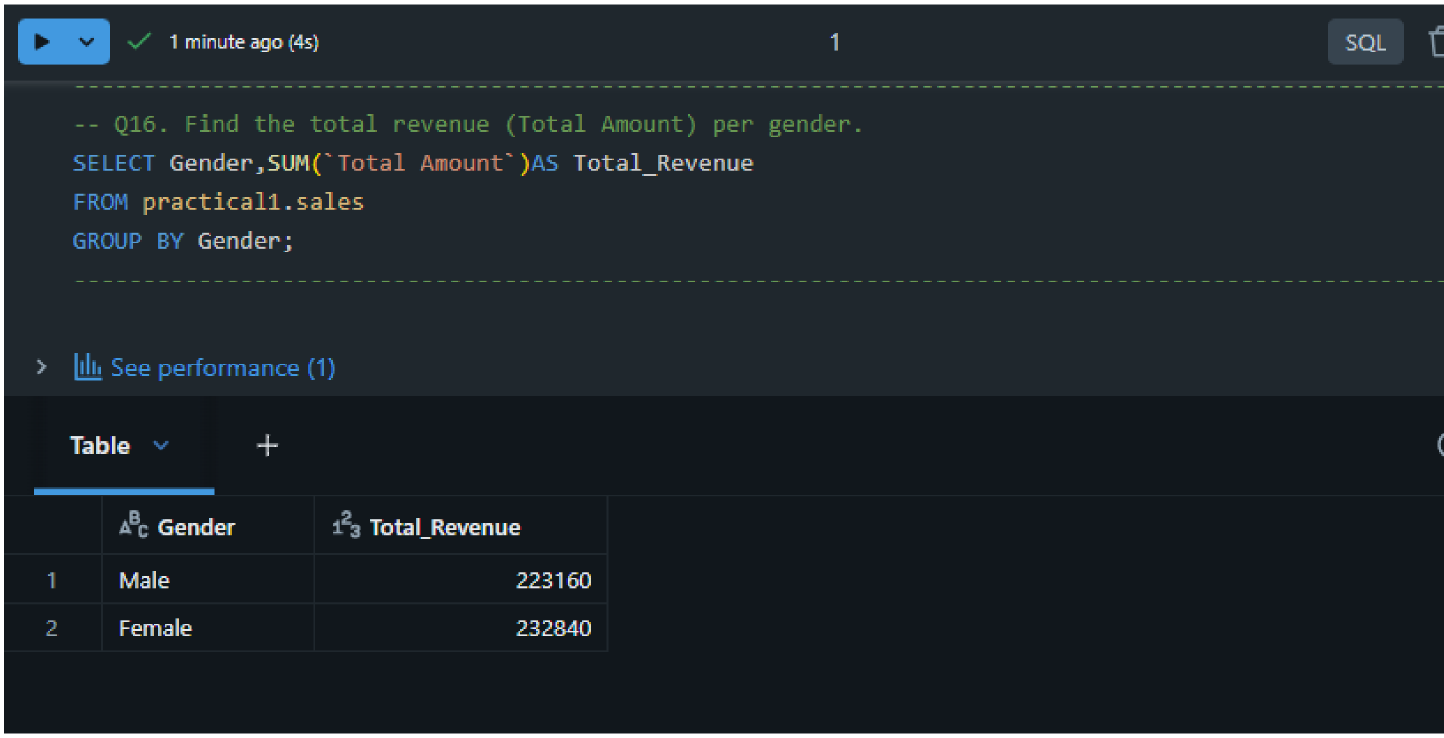
```
------------------------------------------------------------------------------------
-- Q15. Find the number of transactions per Product Category.
SELECT `Product category`,COUNT(`product category`)AS Transaction_Count
FROM practical1.sales
GROUP BY `Product category`;
```

See performance (1)

Table

	Product category	Transaction_Count
1	Beauty	307
2	Clothing	351
3	Electronics	342

QUESTION 16



1 minute ago (4s)

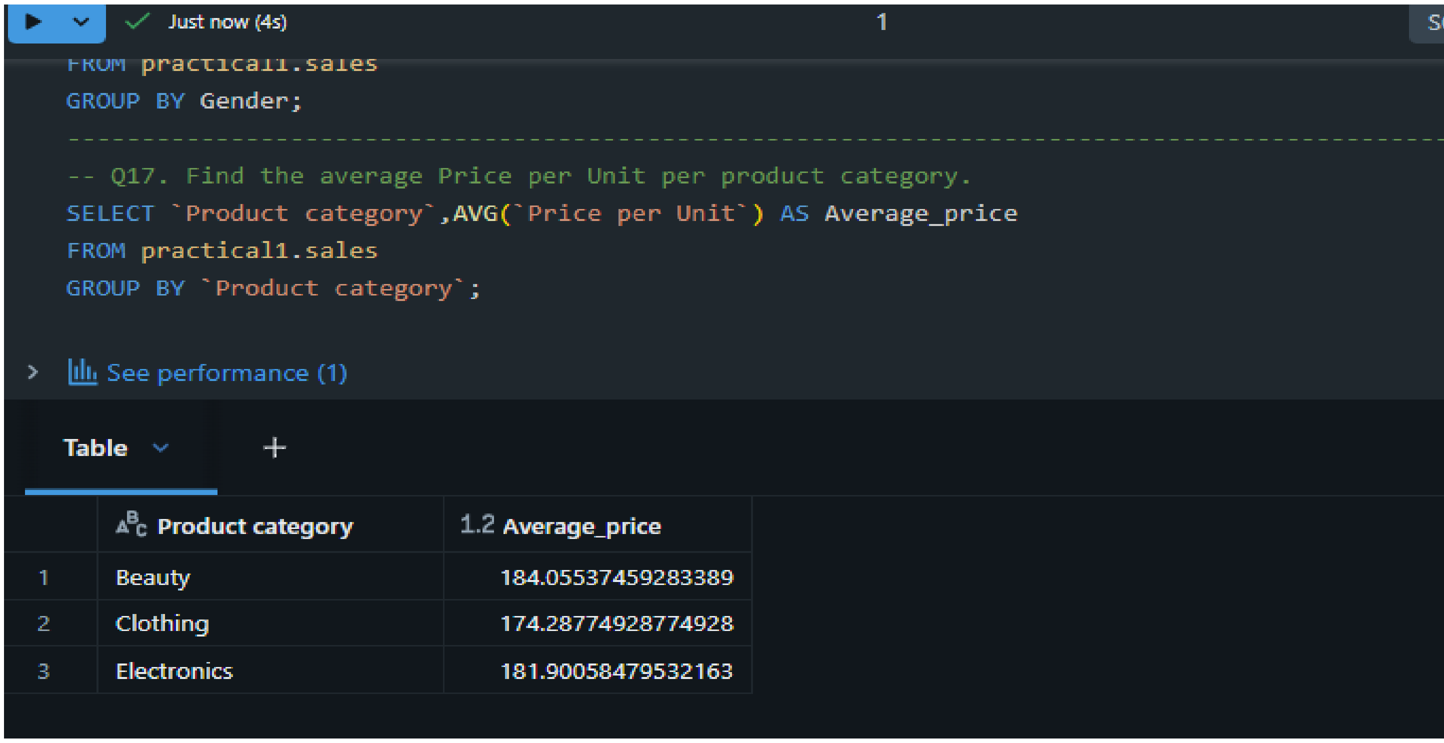
```
-- Q16. Find the total revenue (Total Amount) per gender.
SELECT Gender,SUM(`Total Amount`)AS Total_Revenue
FROM practical1.sales
GROUP BY Gender;
```

See performance (1)

Table

	Gender	Total_Revenue
1	Male	223160
2	Female	232840

QUESTION 17



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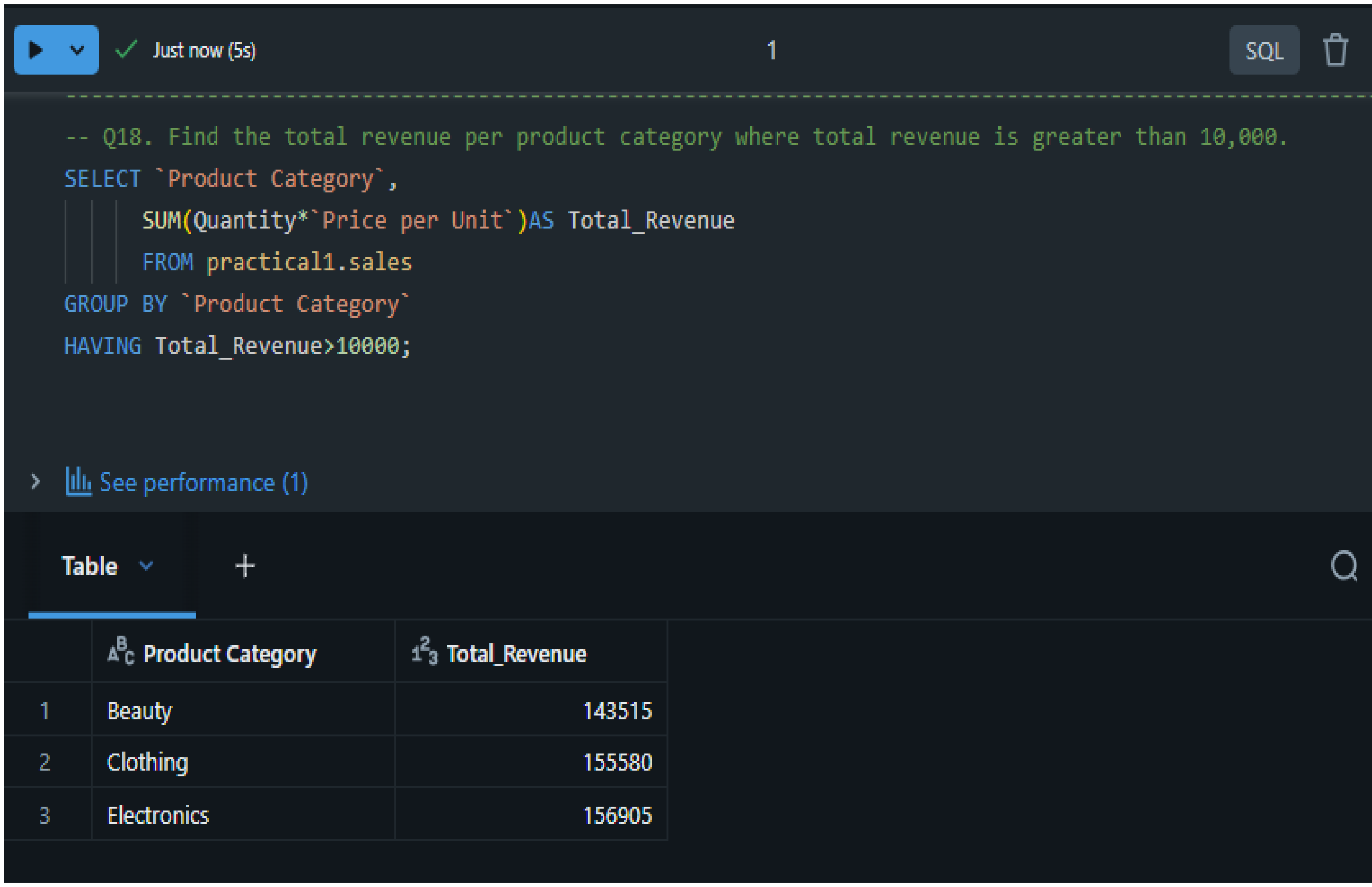
```
FROM practical1.sales
GROUP BY Gender;
--------------------------------------------------------------------------------
-- Q17. Find the average Price per Unit per product category.
SELECT `Product category`,AVG(`Price per Unit`) AS Average_price
FROM practical1.sales
GROUP BY `Product category`;
```

See performance (1)

Table

	Product category	Average_price
1	Beauty	184.05537459283389
2	Clothing	174.28774928774928
3	Electronics	181.90058479532163

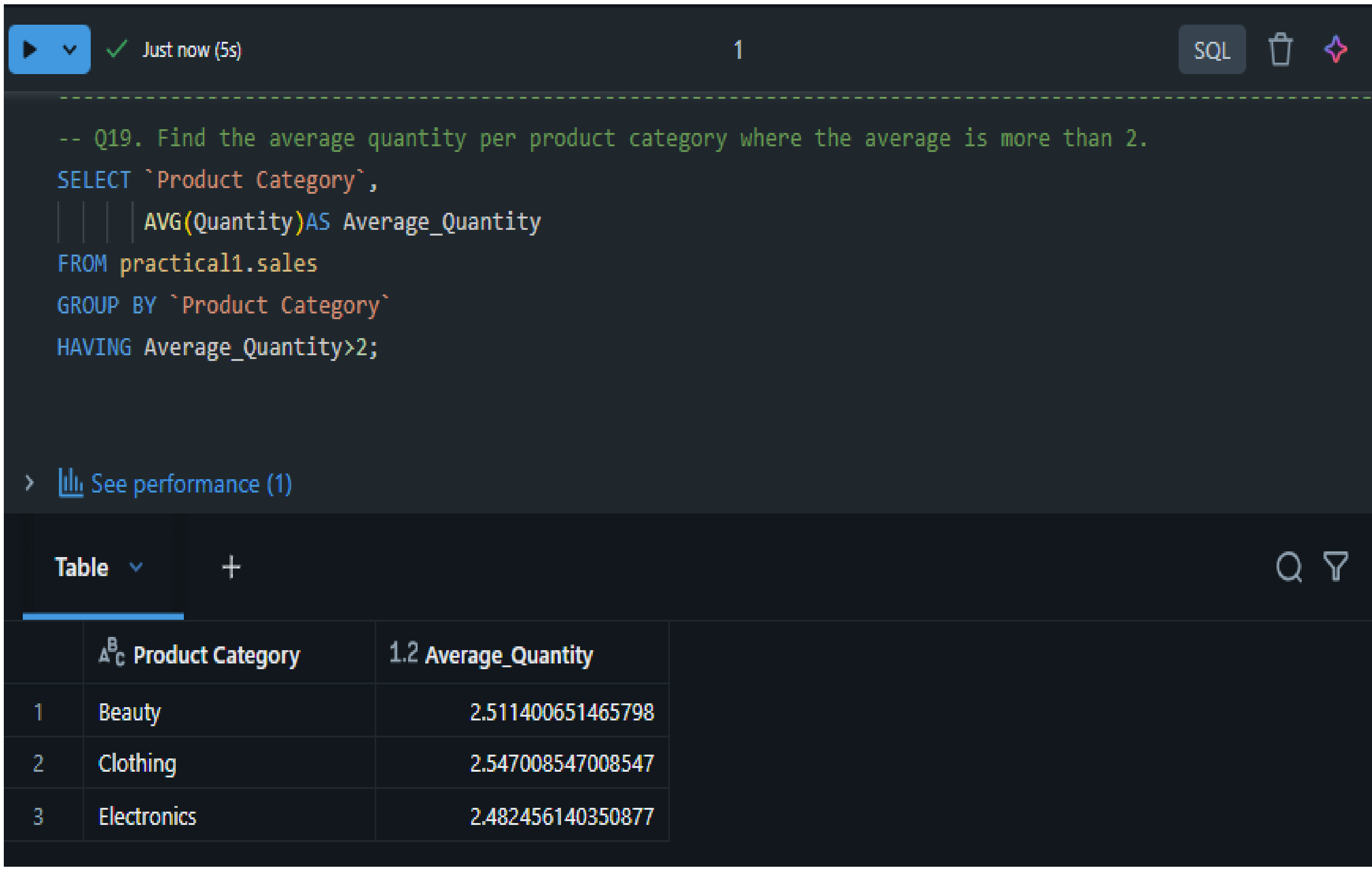
QUESTION 18



```
-- Q18. Find the total revenue per product category where total revenue is greater than 10,000.
SELECT `Product Category`,
        SUM(Quantity*`Price per Unit`)AS Total_Revenue
        FROM practical1.sales
GROUP BY `Product Category`
HAVING Total_Revenue>10000;
```

	Product Category	Total_Revenue
1	Beauty	143515
2	Clothing	155580
3	Electronics	156905

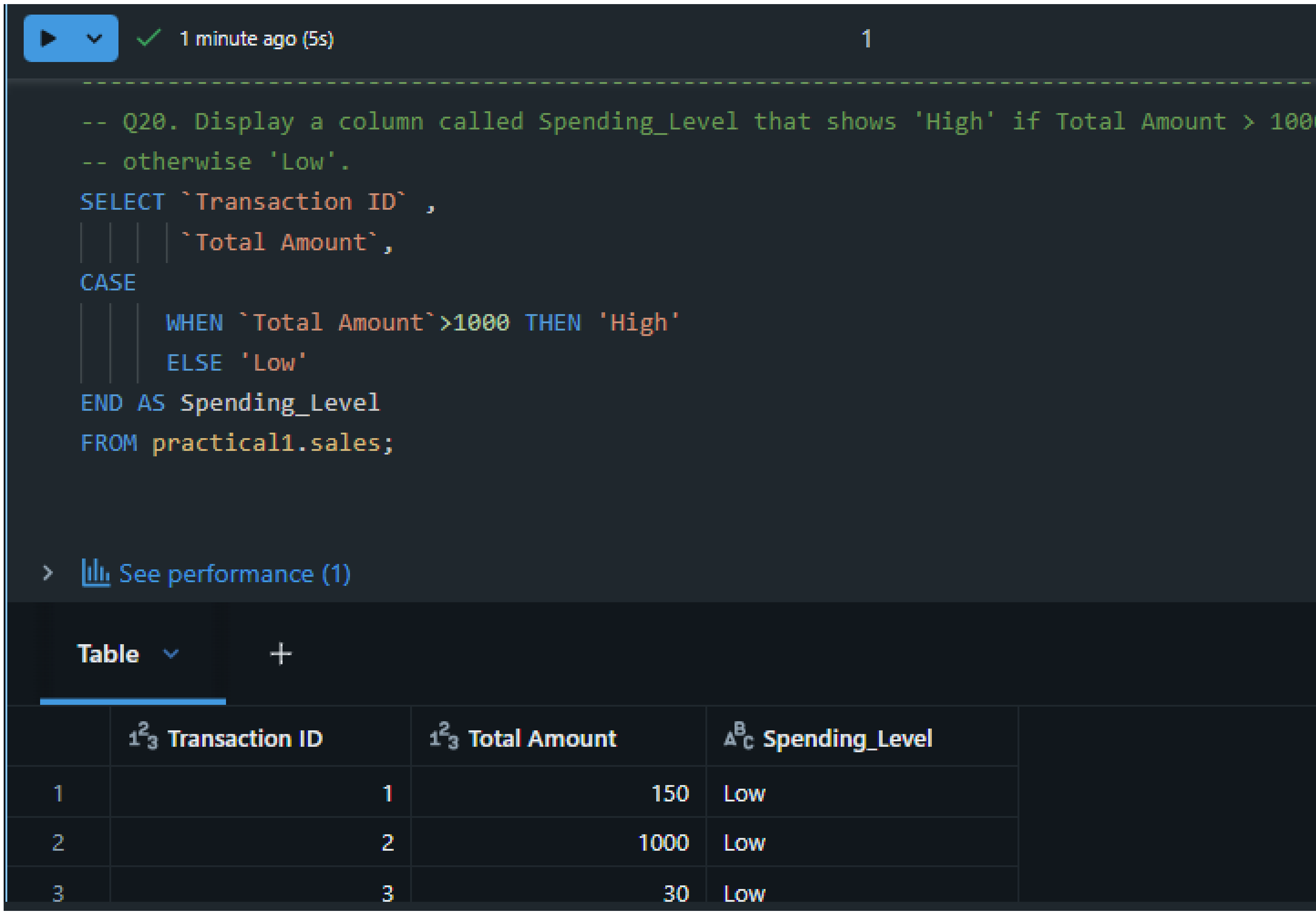
QUESTION 19



```sql
-- Q19. Find the average quantity per product category where the average is more than 2.
SELECT `Product Category`,
       AVG(Quantity)AS Average_Quantity
FROM practical1.sales
GROUP BY `Product Category`
HAVING Average_Quantity>2;
```

	Product Category	Average_Quantity
1	Beauty	2.511400651465798
2	Clothing	2.547008547008547
3	Electronics	2.482456140350877

QUESTION 20



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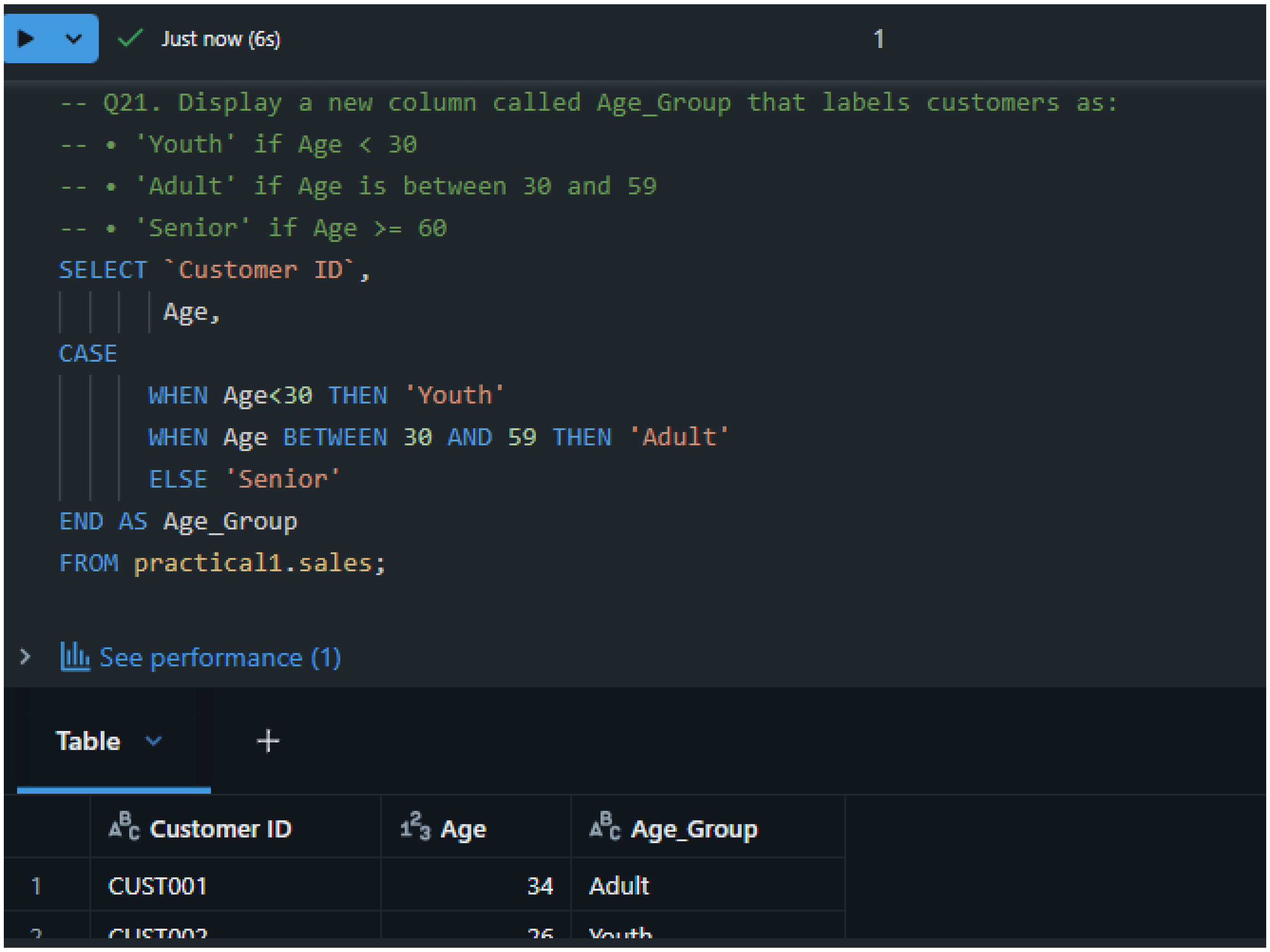
```sql
-------------------------------------------------------------------------------
-- Q20. Display a column called Spending_Level that shows 'High' if Total Amount > 100
-- otherwise 'Low'.
SELECT `Transaction ID` ,
       `Total Amount`,
CASE
      WHEN `Total Amount`>1000 THEN 'High'
      ELSE 'Low'
END AS Spending_Level
FROM practical1.sales;
```

	Transaction ID	Total Amount	Spending_Level
1	1	150	Low
2	2	1000	Low
3	3	30	Low

QUESTION 21



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```
-- Q21. 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
SELECT `Customer ID`,
       Age,
CASE
      WHEN Age<30 THEN 'Youth'
      WHEN Age BETWEEN 30 AND 59 THEN 'Adult'
      ELSE 'Senior'
END AS Age_Group
FROM practical1.sales;
```

See performance (1)

Table

	Customer ID	Age	Age_Group
1	CUST001	34	Adult
2	CUST002	26	Youth