20 Example question and answers for Group By clause in SQL:

Here, I have used MSSQL server for creation of table and solving questions.

Creation of Table:

```
CREATE TABLE orders (
   order_id INT,
   customer_id VARCHAR(10),
   order_date DATE,
   amount DECIMAL(10, 2),
   product_category VARCHAR(50)
);
```

INSERTING Data into Table:

```
INSERT INTO orders (order_id, customer_id, order_date, amount, product_category)
VALUES  (1, 'C1', '2024-01-01', 100.00, 'Electronics'),
(2, 'C1', '2024-01-05', 200.00, 'Clothing'),
(3, 'C2', '2024-01-07', 150.00, 'Electronics'),
(4, 'C3', '2024-01-10', 300.00, 'Clothing'),
(5, 'C3', '2024-02-15', 250.00, 'Furniture'),
(6, 'C4', '2024-01-20', 400.00, 'Electronics'),
(7, 'C4', '2024-02-22', 350.00, 'Furniture'),
(8, 'C5', '2024-01-25', 500.00, 'Clothing'),
(9, 'C5', '2024-01-30', 600.00, 'Furniture'),
(10,'C5', '2024-02-10', 800.00, 'Clothing'),
(11, 'C1', '2023-01-01', 100.00, 'Electronics'),
(12, 'C1', '2023-01-05', 200.00, 'Clothing'),
(13, 'C2', '2023-01-07', 150.00, 'Electronics'),
(14, 'C3', '2023-01-10', 300.00, 'Clothing'),
(15, 'C3', '2023-02-15', 250.00, 'Furniture'),
(16, 'C4', '2023-01-20', 400.00, 'Electronics');
```

Query 1 : Total amount spent by each customer

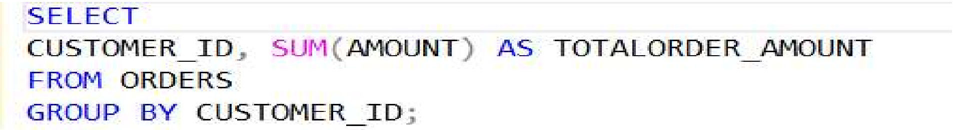
SELECT

CUSTOMER_ID,

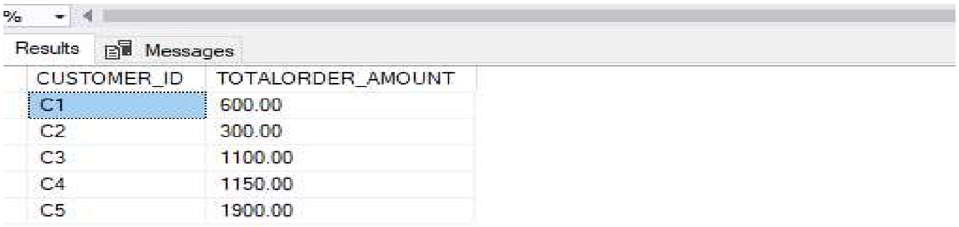
SUM(AMOUNT) AS TOTALORDER_AMOUNT

FROM ORDERS

GROUP BY CUSTOMER_ID;



```
SELECT
CUSTOMER_ID, SUM(AMOUNT) AS TOTALORDER_AMOUNT
FROM ORDERS
GROUP BY CUSTOMER_ID;
```



CUSTOMER_ID	TOTALORDER_AMOUNT
C1	600.00
C2	300.00
C3	1100.00
C4	1150.00
C5	1900.00

Query 2 : Total amount spent by each customer in each product category

SELECT

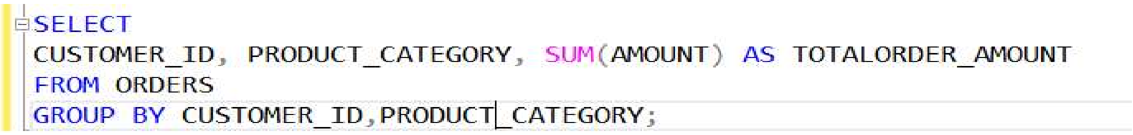
CUSTOMER_ID,

PRODUCT_CATEGORY,

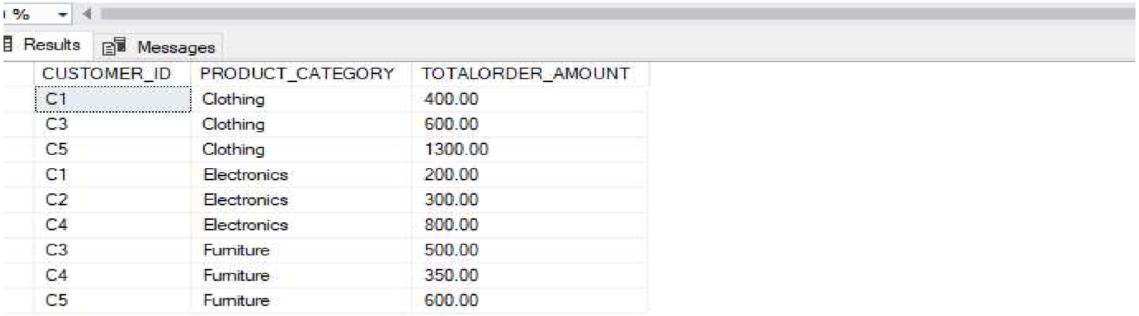
SUM(AMOUNT) AS TOTALORDER_AMOUNT

FROM ORDERS

GROUP BY CUSTOMER_ID, PRODUCT_CATEGORY;



```
SELECT
CUSTOMER_ID, PRODUCT_CATEGORY, SUM(AMOUNT) AS TOTALORDER_AMOUNT
FROM ORDERS
GROUP BY CUSTOMER_ID,PRODUCT_CATEGORY;
```



CUSTOMER_ID	PRODUCT_CATEGORY	TOTALORDER_AMOUNT
C1	Clothing	400.00
C3	Clothing	600.00
C5	Clothing	1300.00
C1	Electronics	200.00
C2	Electronics	300.00
C4	Electronics	800.00
C3	Furniture	500.00
C4	Furniture	350.00
C5	Furniture	600.00

Query 3 : Number of orders placed in each product category

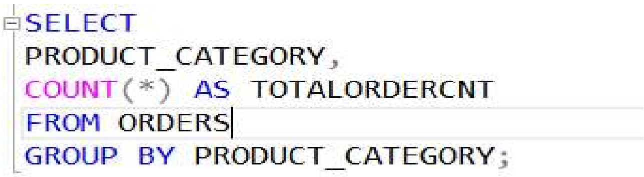
SELECT

PRODUCT_CATEGORY,

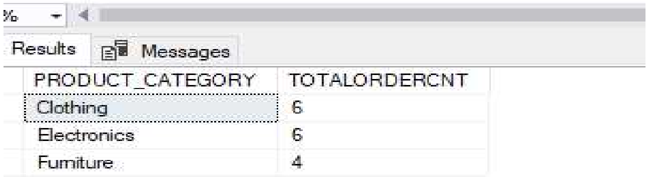
COUNT (*) AS TOTALORDERCNT

FROM ORDERS

GROU BY PRODUCT_CATEGORY;



```
SELECT
PRODUCT_CATEGORY,
COUNT(*) AS TOTALORDERCNT
FROM ORDERS
GROUP BY PRODUCT_CATEGORY;
```



PRODUCT_CATEGORY	TOTALORDERCNT
Clothing	6
Electronics	6
Furniture	4

Query 4 : Average order amount by product category

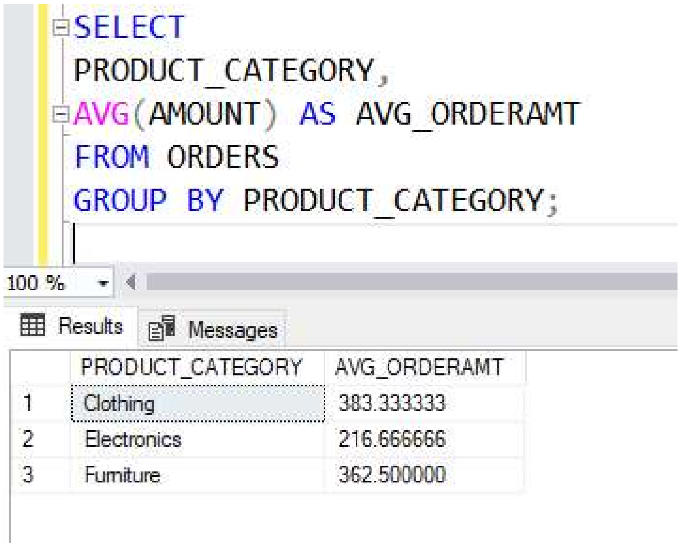
SELECT

PRODUCT_CATEGORY,

AVG(AMOUNT) AS AVG_ORDERAMT

FROM ORDERS

GROUP BY PRODUCT_CATEGORY;



```
SELECT
PRODUCT_CATEGORY,
AVG(AMOUNT) AS AVG_ORDERAMT
FROM ORDERS
GROUP BY PRODUCT_CATEGORY;
```

	PRODUCT_CATEGORY	AVG_ORDERAMT
1	Clothing	383.333333
2	Electronics	216.666666
3	Furniture	362.500000

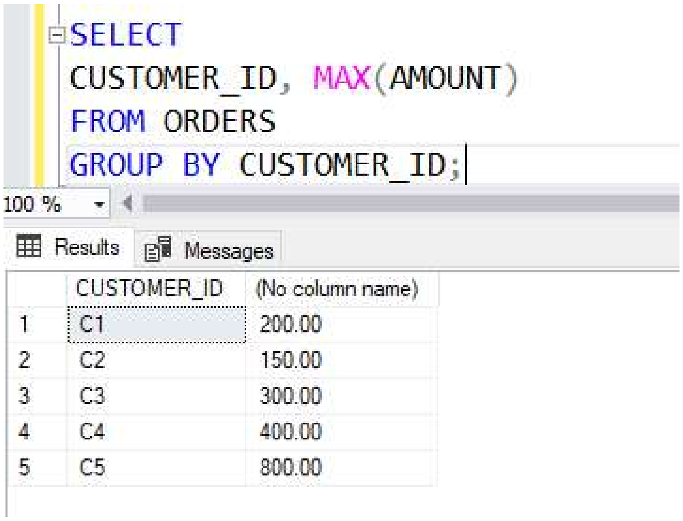
Query 5: Maximum order amount spent by each customer

SELECT

CUSTOMER_ID, MAX(AMOUNT)

FROM ORDERS

GROUP BY CUSTOMER_ID;



```
SELECT
CUSTOMER_ID, MAX(AMOUNT)
FROM ORDERS
GROUP BY CUSTOMER_ID;
```

	CUSTOMER_ID	(No column name)
1	C1	200.00
2	C2	150.00
3	C3	300.00
4	C4	400.00
5	C5	800.00

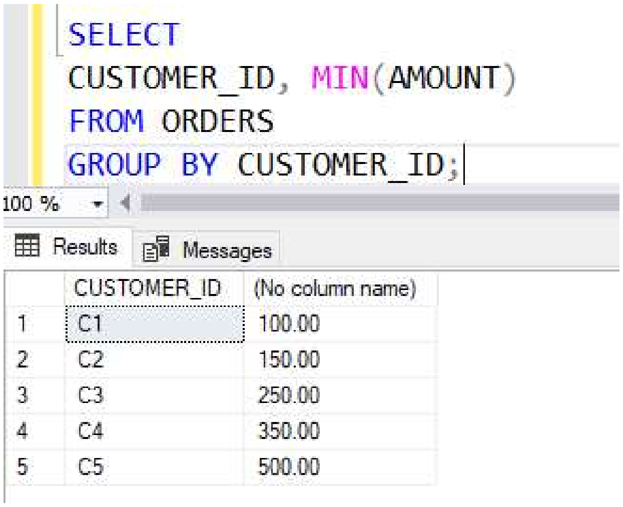
Query 6: Minimum order amount spent by each customer

SELECT

CUSTOMER_ID, MIN(AMOUNT)

FROM ORDERS

GROUP BY CUSTOMER_ID;



```
SELECT
CUSTOMER_ID, MIN(AMOUNT)
FROM ORDERS
GROUP BY CUSTOMER_ID;
```

	CUSTOMER_ID	(No column name)
1	C1	100.00
2	C2	150.00
3	C3	250.00
4	C4	350.00
5	C5	500.00

Query 7: Total number of orders placed by each customer

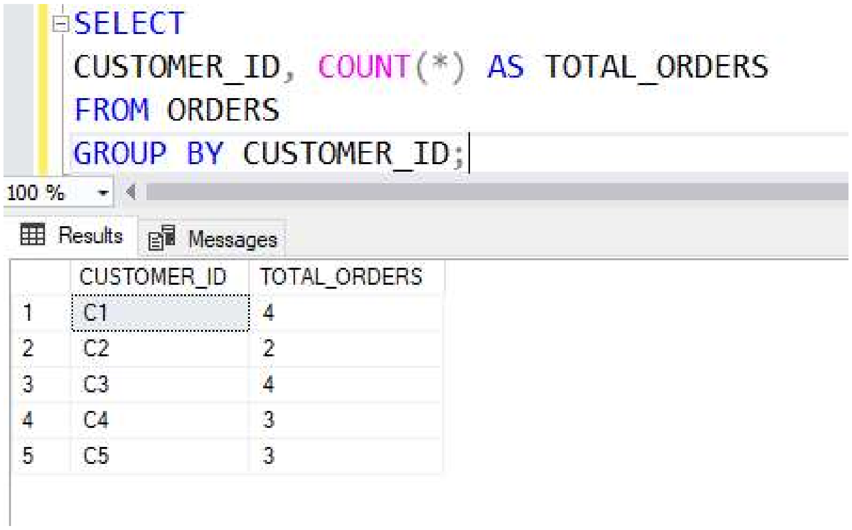
SELECT

CUSTOMER_ID,

COUNT (*) AS TOTAL_ORDERS

FROM ORDERS

GROUP BY CUSTOMER_ID;



```
SELECT
CUSTOMER_ID, COUNT(*) AS TOTAL_ORDERS
FROM ORDERS
GROUP BY CUSTOMER_ID;
```

	CUSTOMER_ID	TOTAL_ORDERS
1	C1	4
2	C2	2
3	C3	4
4	C4	3
5	C5	3

Query 8: Total sales amount for each product category

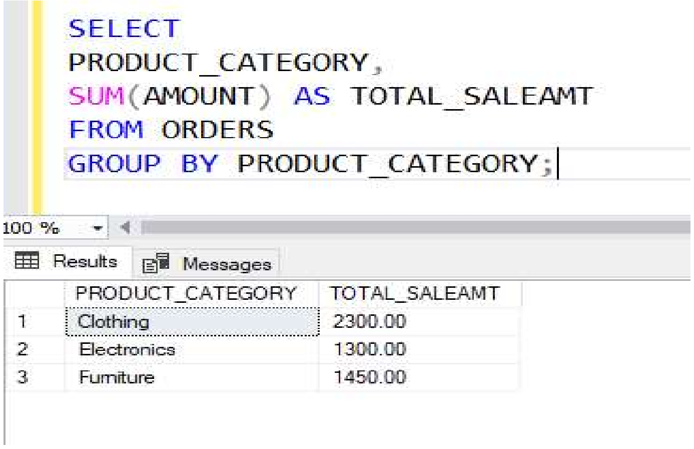
SELECT

PRODUCT_CATEGORY,

SUM(AMOUNT) AS TOTAL_SALEAMT

FROM ORDERS

GROUP BY PRODUCT_CATEGORY;



```
SELECT
PRODUCT_CATEGORY,
SUM(AMOUNT) AS TOTAL_SALEAMT
FROM ORDERS
GROUP BY PRODUCT_CATEGORY;
```

	PRODUCT_CATEGORY	TOTAL_SALEAMT
1	Clothing	2300.00
2	Electronics	1300.00
3	Furniture	1450.00

Query 9 : Average order amount for each customer

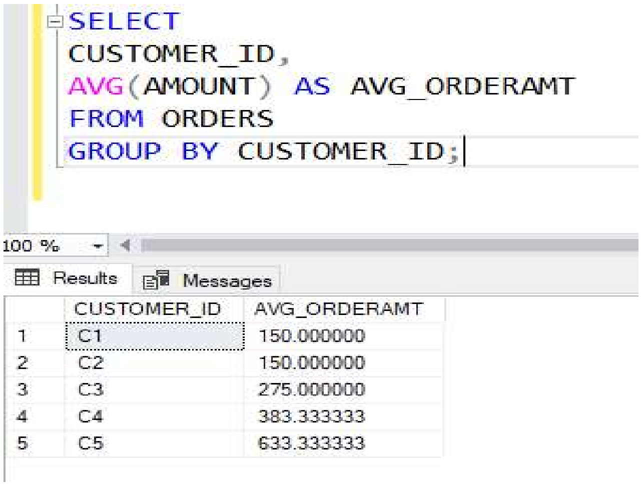
SELECT

CUSTOMER_ID,

AVG(AMOUNT) AS AVG_ORDERAMT

FROM ORDERS

GROUP BY CUSTOMER_ID;



```
SELECT
CUSTOMER_ID,
AVG(AMOUNT) AS AVG_ORDERAMT
FROM ORDERS
GROUP BY CUSTOMER_ID;
```

	CUSTOMER_ID	AVG_ORDERAMT
1	C1	150.000000
2	C2	150.000000
3	C3	275.000000
4	C4	383.333333
5	C5	633.333333

Query 10: Number of customers for each product category (distinct count of customers)

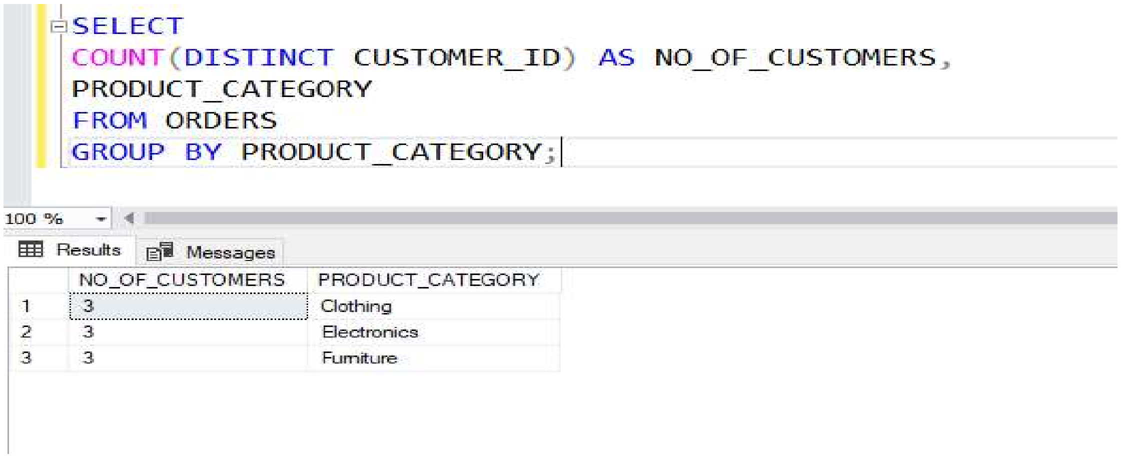
SELECT

COUNT (DISTINCT CUSTOMER_ID) AS NO_OF_CUSTOMERS,

PRODUCT_CATEGORY

FROM ORDERS

GROUP BY PRODUCT_CATEGORY;



```
SELECT
COUNT(DISTINCT CUSTOMER_ID) AS NO_OF_CUSTOMERS,
PRODUCT_CATEGORY
FROM ORDERS
GROUP BY PRODUCT_CATEGORY;
```

	NO_OF_CUSTOMERS	PRODUCT_CATEGORY
1	3	Clothing
2	3	Electronics
3	3	Furniture

Query 11: Total amount spent per month

SELECT

MONTH(ORDER_DATE) AS Month,

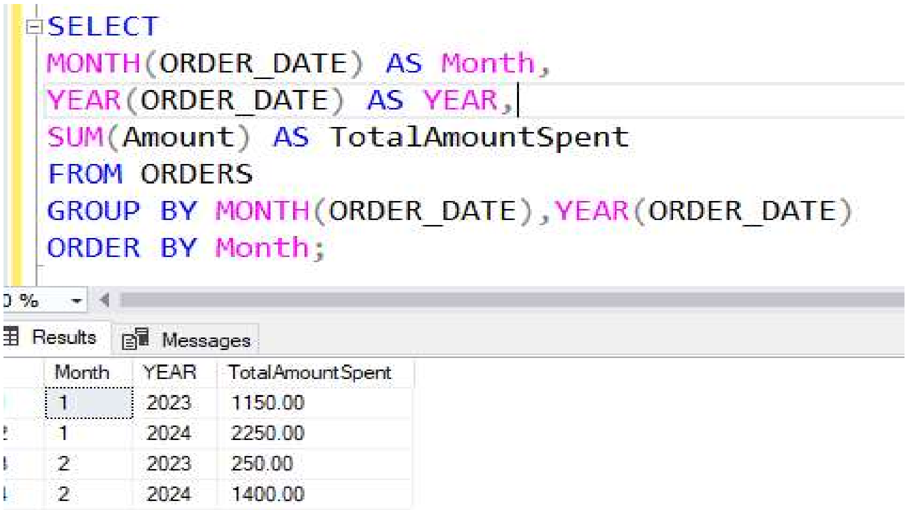
YEAR(ORDER_DATE) AS YEAR,

SUM(Amount) AS TotalAmountSpent

FROM ORDERS

GROUP BY MONTH(ORDER_DATE), YEAR(ORDER_DATE)

ORDER BY Month;



```
SELECT
MONTH(ORDER_DATE) AS Month,
YEAR(ORDER_DATE) AS YEAR,
SUM(Amount) AS TotalAmountSpent
FROM ORDERS
GROUP BY MONTH(ORDER_DATE),YEAR(ORDER_DATE)
ORDER BY Month;
```

Month	YEAR	TotalAmountSpent
1	2023	1150.00
1	2024	2250.00
2	2023	250.00
2	2024	1400.00

Query 12: Average order amount per month

SELECT

MONTH(ORDER_DATE) AS Month,

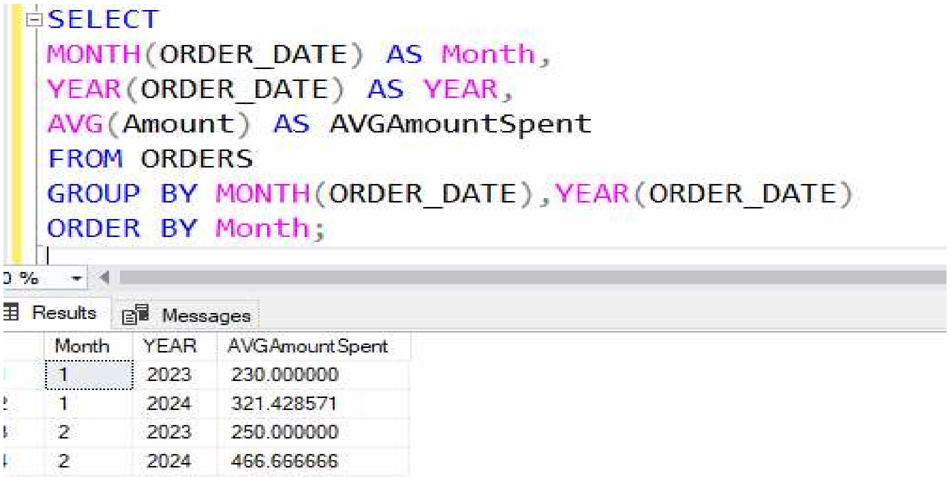
YEAR(ORDER_DATE) AS YEAR,

AVG(Amount) AS AVGAmountSpent

FROM ORDERS

GROUP BY MONTH(ORDER_DATE), YEAR(ORDER_DATE)

ORDER BY Month;



```
SELECT
MONTH(ORDER_DATE) AS Month,
YEAR(ORDER_DATE) AS YEAR,
AVG(Amount) AS AVGAmountSpent
FROM ORDERS
GROUP BY MONTH(ORDER_DATE),YEAR(ORDER_DATE)
ORDER BY Month;
```

	Month	YEAR	AVGAmountSpent
	1	2023	230.000000
2	1	2024	321.428571
3	2	2023	250.000000
4	2	2024	466.666666

Query 13: Total number of orders per month

SELECT

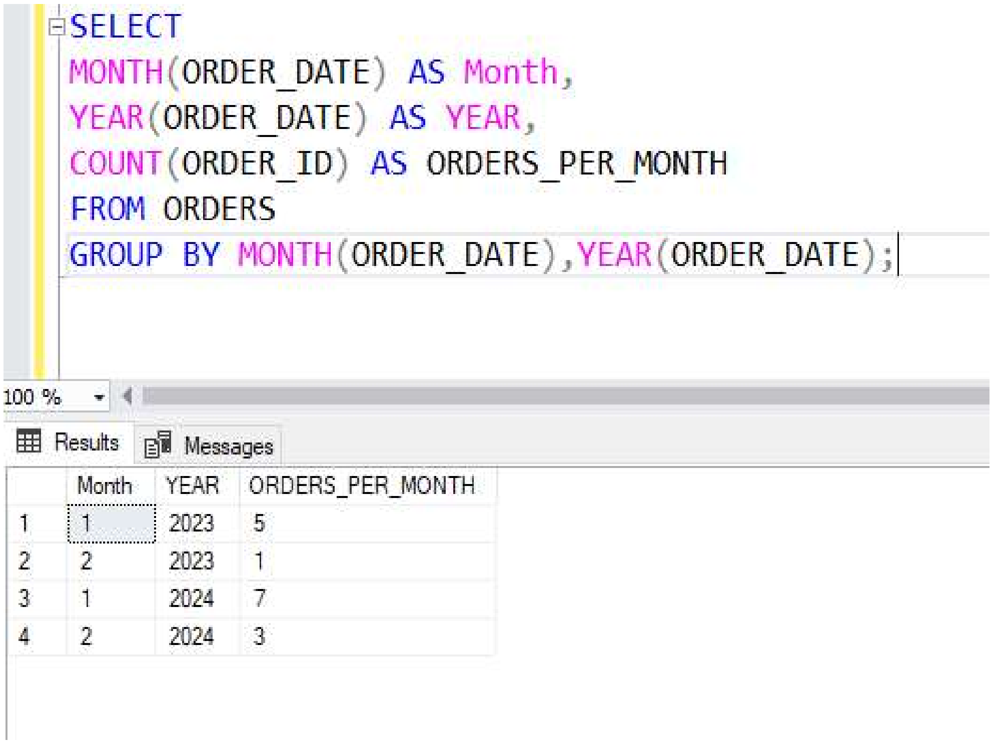
MONTH(ORDER_DATE) AS Month,

YEAR(ORDER_DATE) AS YEAR,

COUNT(ORDER_ID) AS ORDERS_PER_MONTH

FROM ORDERS

GROUP BY MONTH(ORDER_DATE), YEAR(ORDER_DATE);



```
SELECT
MONTH(ORDER_DATE) AS Month,
YEAR(ORDER_DATE) AS YEAR,
COUNT(ORDER_ID) AS ORDERS_PER_MONTH
FROM ORDERS
GROUP BY MONTH(ORDER_DATE),YEAR(ORDER_DATE);
```

	Month	YEAR	ORDERS_PER_MONTH
1	1	2023	5
2	2	2023	1
3	1	2024	7
4	2	2024	3

Query 14: Total sales amount per year

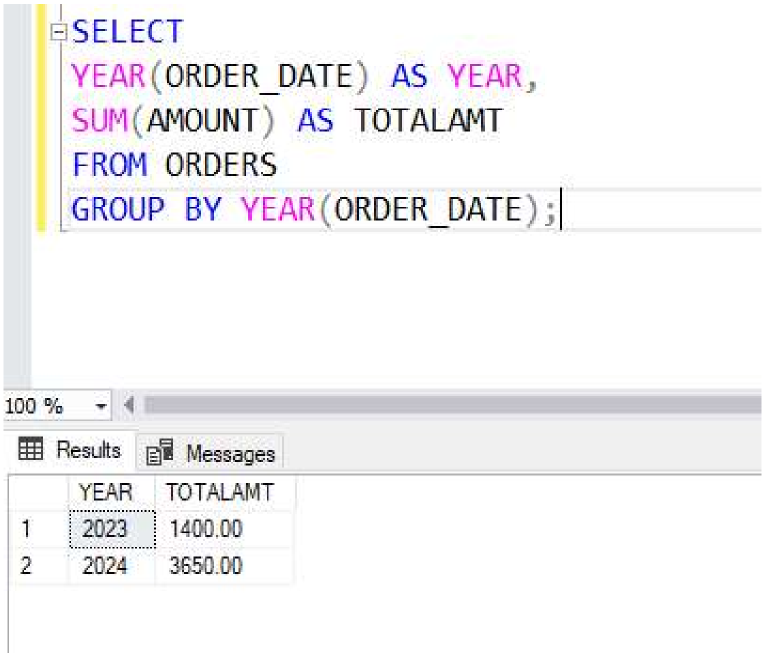
SELECT

YEAR(ORDER_DATE) AS YEAR,

SUM(AMOUNT) AS TOTALAMT

FROM ORDERS

GROUP BY YEAR(ORDER_DATE);



```
SELECT
YEAR(ORDER_DATE) AS YEAR,
SUM(AMOUNT) AS TOTALAMT
FROM ORDERS
GROUP BY YEAR(ORDER_DATE);
```

```
   YEAR  TOTALAMT
1  2023  1400.00
2  2024  3650.00
```

Query 15: Average order amount per year

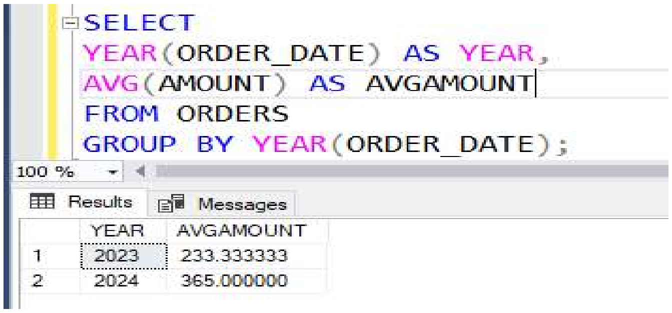
SELECT

YEAR(ORDER_DATE) AS YEAR,

AVG(AMOUNT) AS AVGAMOUNT

FROM ORDERS

GROUP BY YEAR(ORDER_DATE);

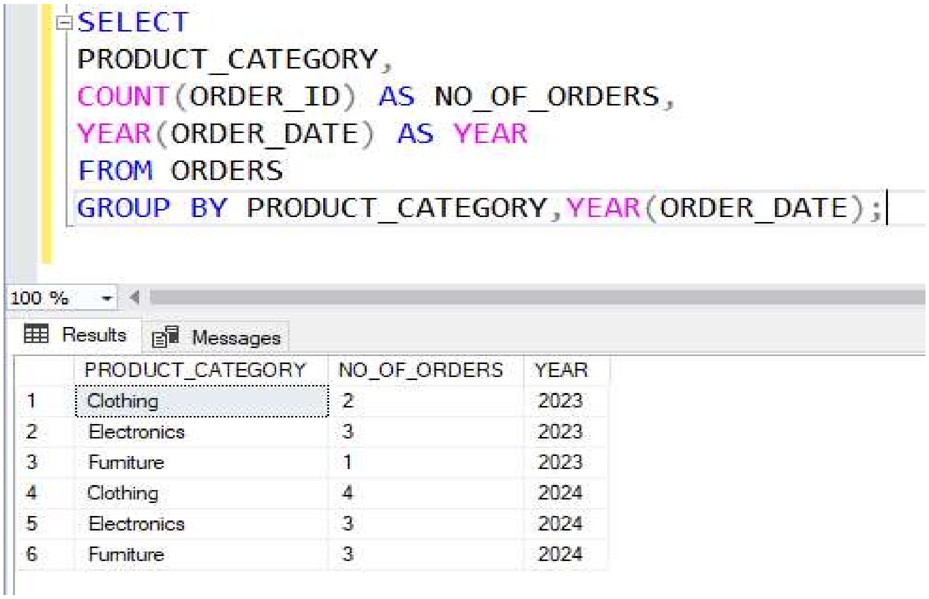


```
SELECT
YEAR(ORDER_DATE) AS YEAR,
AVG(AMOUNT) AS AVGAMOUNT
FROM ORDERS
GROUP BY YEAR(ORDER_DATE);
```

```
   YEAR  AVGAMOUNT
1  2023  233.333333
2  2024  365.000000
```

Query 16: Number of orders placed by product category each year

```
SELECT

PRODUCT_CATEGORY,

COUNT(ORDER_ID) AS NO_OF_ORDERS,

YEAR(ORDER_DATE) AS YEAR

FROM ORDERS

GROUP BY PRODUCT_CATEGORY,YEAR(ORDER_DATE);
```

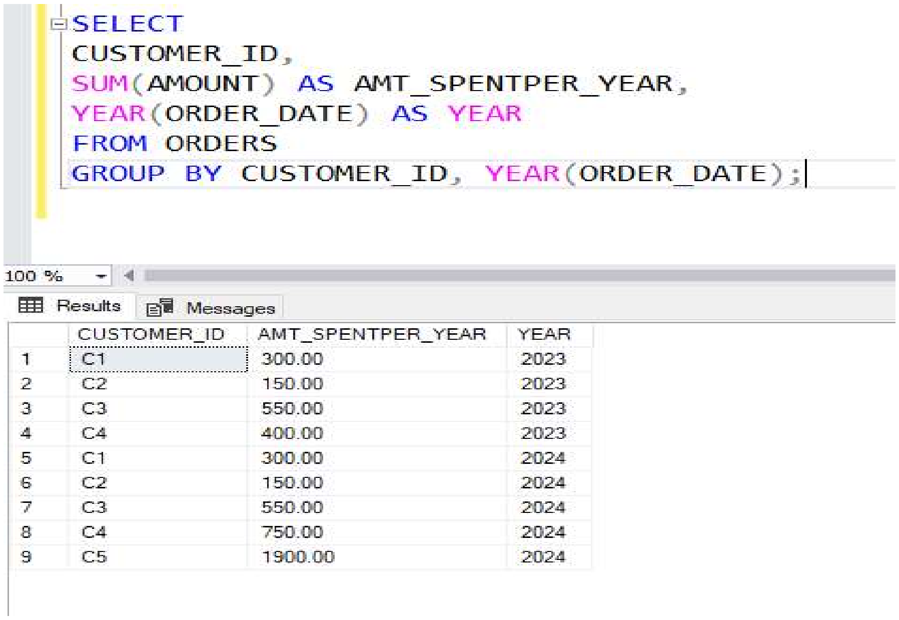


```
SELECT
PRODUCT_CATEGORY,
COUNT(ORDER_ID) AS NO_OF_ORDERS,
YEAR(ORDER_DATE) AS YEAR
FROM ORDERS
GROUP BY PRODUCT_CATEGORY,YEAR(ORDER_DATE);
```

	PRODUCT_CATEGORY	NO_OF_ORDERS	YEAR
1	Clothing	2	2023
2	Electronics	3	2023
3	Furniture	1	2023
4	Clothing	4	2024
5	Electronics	3	2024
6	Furniture	3	2024

Query 17: Total amount spent by each customer per year

```
SELECT

CUSTOMER_ID,

SUM(AMOUNT) AS AMT_SPENTPER_YEAR,

YEAR(ORDER_DATE) AS YEAR

FROM ORDERS

GROUP BY CUSTOMER_ID, YEAR(ORDER_DATE);
```



```
SELECT
CUSTOMER_ID,
SUM(AMOUNT) AS AMT_SPENTPER_YEAR,
YEAR(ORDER_DATE) AS YEAR
FROM ORDERS
GROUP BY CUSTOMER_ID, YEAR(ORDER_DATE);
```

	CUSTOMER_ID	AMT_SPENTPER_YEAR	YEAR
1	C1	300.00	2023
2	C2	150.00	2023
3	C3	550.00	2023
4	C4	400.00	2023
5	C1	300.00	2024
6	C2	150.00	2024
7	C3	550.00	2024
8	C4	750.00	2024
9	C5	1900.00	2024

Query 18: Maximum order amount per product category each year

SELECT

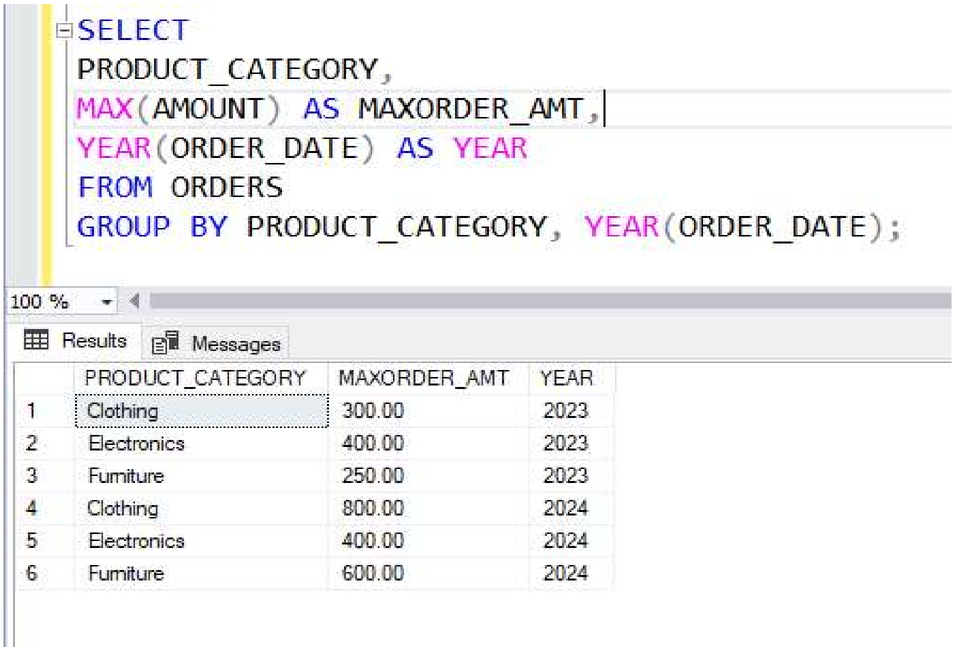
PRODUCT_CATEGORY,

MAX(AMOUNT) AS MAXORDER_AMT,

YEAR(ORDER_DATE) AS YEAR

FROM ORDERS

GROUP BY PRODUCT_CATEGORY, YEAR(ORDER_DATE);



```
SELECT
PRODUCT_CATEGORY,
MAX(AMOUNT) AS MAXORDER_AMT,
YEAR(ORDER_DATE) AS YEAR
FROM ORDERS
GROUP BY PRODUCT_CATEGORY, YEAR(ORDER_DATE);
```

	PRODUCT_CATEGORY	MAXORDER_AMT	YEAR
1	Clothing	300.00	2023
2	Electronics	400.00	2023
3	Furniture	250.00	2023
4	Clothing	800.00	2024
5	Electronics	400.00	2024
6	Furniture	600.00	2024

Query 19: Minimum order amount per product category each year

SELECT

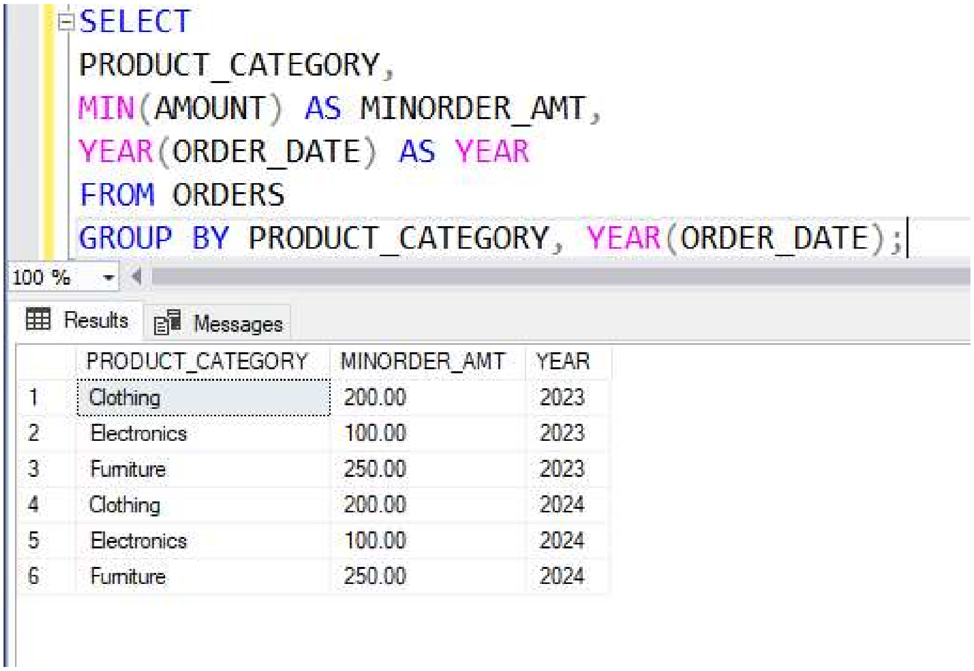
PRODUCT_CATEGORY,

MIN(AMOUNT) AS MINORDER_AMT,

YEAR(ORDER_DATE) AS YEAR

FROM ORDERS

GROUP BY PRODUCT_CATEGORY, YEAR(ORDER_DATE);



```
SELECT
PRODUCT_CATEGORY,
MIN(AMOUNT) AS MINORDER_AMT,
YEAR(ORDER_DATE) AS YEAR
FROM ORDERS
GROUP BY PRODUCT_CATEGORY, YEAR(ORDER_DATE);
```

	PRODUCT_CATEGORY	MINORDER_AMT	YEAR
1	Clothing	200.00	2023
2	Electronics	100.00	2023
3	Furniture	250.00	2023
4	Clothing	200.00	2024
5	Electronics	100.00	2024
6	Furniture	250.00	2024

Query 20: Average order amount per product category each month

SELECT

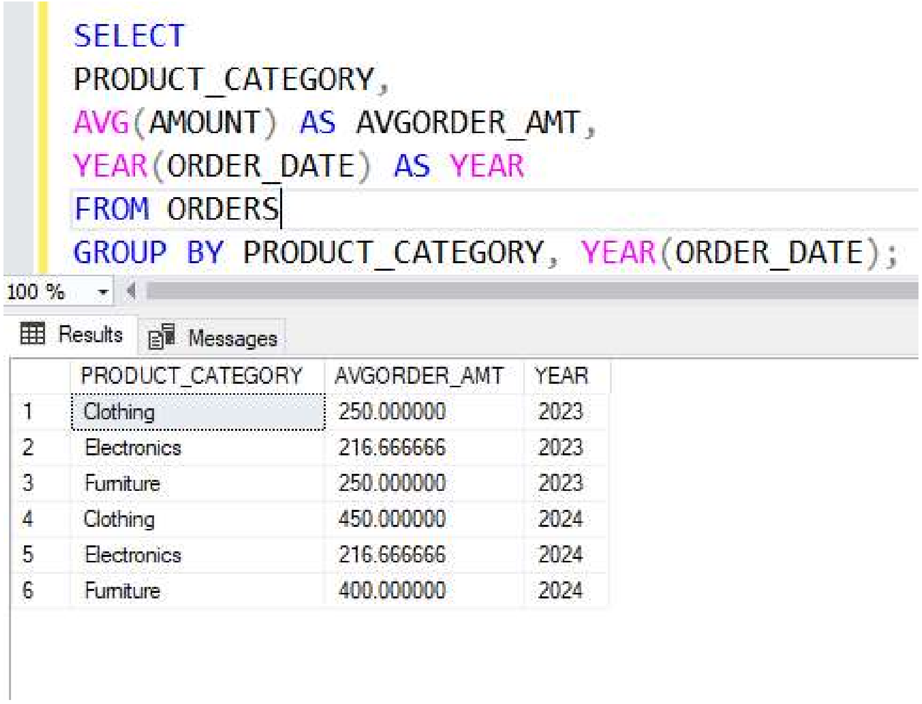
PRODUCT_CATEGORY,

AVG(AMOUNT) AS AVGORDER_AMT,

YEAR(ORDER_DATE) AS YEAR

FROM ORDERS

GROUP BY PRODUCT_CATEGORY, YEAR(ORDER_DATE);



```sql
SELECT
PRODUCT_CATEGORY,
AVG(AMOUNT) AS AVGORDER_AMT,
YEAR(ORDER_DATE) AS YEAR
FROM ORDERS
GROUP BY PRODUCT_CATEGORY, YEAR(ORDER_DATE);
```

	PRODUCT_CATEGORY	AVGORDER_AMT	YEAR
1	Clothing	250.000000	2023
2	Electronics	216.666666	2023
3	Furniture	250.000000	2023
4	Clothing	450.000000	2024
5	Electronics	216.666666	2024
6	Furniture	400.000000	2024