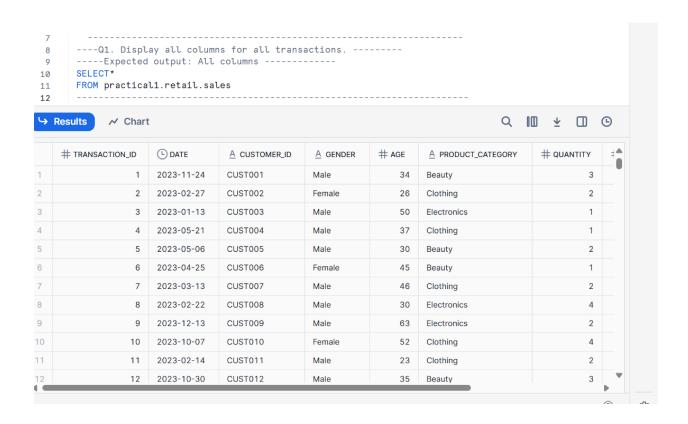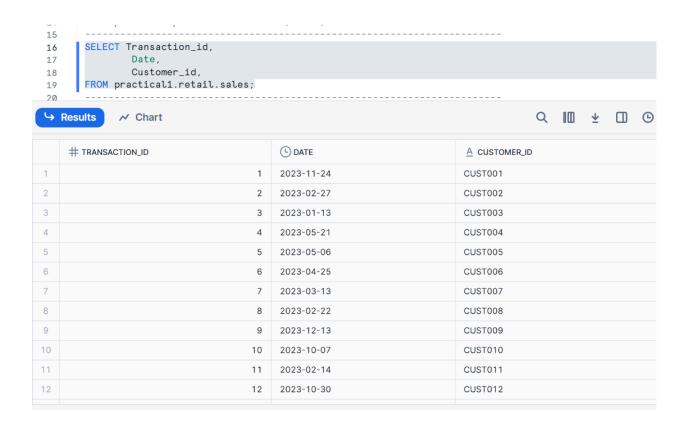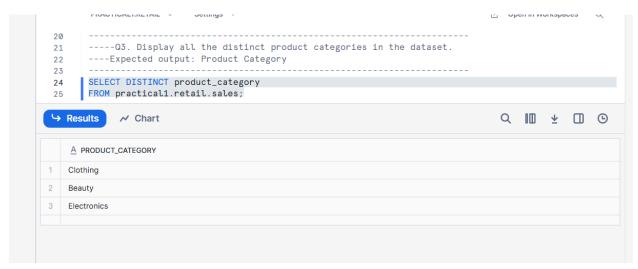Nonhlanhla Msimango

Practical 1
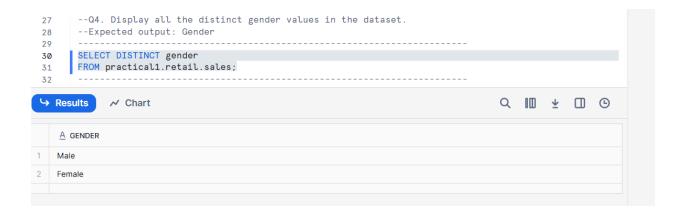
Question 1

```
 7        ----------------------------------------------------------------
 8     ----Q1. Display all columns for all transactions. ---------
 9     -----Expected output: All columns ------------
10     SELECT*
11     FROM practical1.retail.sales
12        ----------------------------------------------------------------
```

# TRANSACTION_ID	🕓 DATE	A CUSTOMER_ID	A GENDER	# AGE	A PRODUCT_CATEGORY	# QUANTITY
1	2023-11-24	CUST001	Male	34	Beauty	3
2	2023-02-27	CUST002	Female	26	Clothing	2
3	2023-01-13	CUST003	Male	50	Electronics	1
4	2023-05-21	CUST004	Male	37	Clothing	1
5	2023-05-06	CUST005	Male	30	Beauty	2
6	2023-04-25	CUST006	Female	45	Beauty	1
7	2023-03-13	CUST007	Male	46	Clothing	2
8	2023-02-22	CUST008	Male	30	Electronics	4
9	2023-12-13	CUST009	Male	63	Electronics	2
10	2023-10-07	CUST010	Female	52	Clothing	4
11	2023-02-14	CUST011	Male	23	Clothing	2
12	2023-10-30	CUST012	Male	35	Beauty	3

Question 2

```
 15  -----------------------------------------------------------------
 16  SELECT Transaction_id,
 17         Date,
 18         Customer_id,
 19  FROM practical1.retail.sales;
 20  -----------------------------------------------------------------
```

Results **Chart**

# TRANSACTION_ID	DATE	A CUSTOMER_ID
1	2023-11-24	CUST001
2	2023-02-27	CUST002
3	2023-01-13	CUST003
4	2023-05-21	CUST004
5	2023-05-06	CUST005
6	2023-04-25	CUST006
7	2023-03-13	CUST007
8	2023-02-22	CUST008
9	2023-12-13	CUST009
10	2023-10-07	CUST010
11	2023-02-14	CUST011
12	2023-10-30	CUST012

Question 3

```
 20  -----------------------------------------------------------------
 21  -----Q3. Display all the distinct product categories in the dataset.
 22  ----Expected output: Product Category
 23  -----------------------------------------------------------------
 24  SELECT DISTINCT product_category
 25  FROM practical1.retail.sales;
```

Results **Chart**

A PRODUCT_CATEGORY
1 Clothing
2 Beauty
3 Electronics

Question4

```
27    --Q4. Display all the distinct gender values in the dataset.
28    --Expected output: Gender
29    --------------------------------------------------------------
30    SELECT DISTINCT gender
31    FROM practical1.retail.sales;
32    --------------------------------------------------------------
```

	A GENDER
1	Male
2	Female

Question 5

```
33    --SELECTQ5. Display all transactions where the Age is greater than 40.
34    --Expected output: All columns
35    --------------------------------------------------------------
36    SELECT*
37    FROM practical1.retail.sales
38    WHERE age> '40';
```

	# TRANSACTION_ID	⏱ DATE	A CUSTOMER_ID	A GENDER	# AGE	A PRODUCT_CATEGORY	# QUANTITY	#
1	3	2023-01-13	CUST003	Male	50	Electronics	1	
2	6	2023-04-25	CUST006	Female	45	Beauty	1	
3	7	2023-03-13	CUST007	Male	46	Clothing	2	
4	9	2023-12-13	CUST009	Male	63	Electronics	2	
5	10	2023-10-07	CUST010	Female	52	Clothing	4	
6	14	2023-01-17	CUST014	Male	64	Clothing	4	
7	15	2023-01-16	CUST015	Female	42	Electronics	4	
8	18	2023-04-30	CUST018	Female	47	Electronics	2	
9	19	2023-09-16	CUST019	Female	62	Clothing	2	
10	21	2023-01-14	CUST021	Female	50	Beauty	1	
11	24	2023-11-29	CUST024	Female	49	Clothing	1	
12	25	2023-12-26	CUST025	Female	64	Beauty	1	

Question 6

```
40    --Q6. Display all transactions where the Price per Unit is between 100 and 500.
41    --Expected output: All columns
42    ----------------------------------------------------------------
43    SELECT *
44    FROM practical1.retail.sales
45    WHERE price_per_unit BETWEEN 100 AND 500;
```

Results   ∿ Chart

	TRANSACTION_ID	DATE	CUSTOMER_ID	GENDER	AGE	PRODUCT_CATEGORY	QUANTITY	#
1	2	2023-02-27	CUST002	Female	26	Clothing	2	
2	4	2023-05-21	CUST004	Male	37	Clothing	1	
3	9	2023-12-13	CUST009	Male	63	Electronics	2	
4	13	2023-08-05	CUST013	Male	22	Electronics	3	
5	15	2023-01-16	CUST015	Female	42	Electronics	4	
6	16	2023-02-17	CUST016	Male	19	Clothing	3	
7	20	2023-11-05	CUST020	Male	22	Clothing	3	
8	21	2023-01-14	CUST021	Female	50	Beauty	1	
9	24	2023-11-29	CUST024	Female	49	Clothing	1	
10	26	2023-10-07	CUST026	Female	28	Electronics	2	
11	28	2023-04-23	CUST028	Female	43	Beauty	1	
12	30	2023-10-29	CUST030	Female	39	Beauty	3	

Question 7

```
7     ---Q7. Display all transactions where the Product Category is either 'Beauty' or
8     --'Electronics'.
9     ----------------------------------------------------------------
0     SELECT*
1     FROM practical1.retail.sales
2     WHERE product_category IN ('Beauty','Electronics');
```

Results   ∿ Chart

TRANSACTION_ID	DATE	CUSTOMER_ID	GENDER	AGE	PRODUCT_CATEGORY	QUANTITY	#
2	2023-02-27	CUST002	Female	26	Clothing	2	
4	2023-05-21	CUST004	Male	37	Clothing	1	
9	2023-12-13	CUST009	Male	63	Electronics	2	
13	2023-08-05	CUST013	Male	22	Electronics	3	
15	2023-01-16	CUST015	Female	42	Electronics	4	
16	2023-02-17	CUST016	Male	19	Clothing	3	
20	2023-11-05	CUST020	Male	22	Clothing	3	
21	2023-01-14	CUST021	Female	50	Beauty	1	
24	2023-11-29	CUST024	Female	49	Clothing	1	
26	2023-10-07	CUST026	Female	28	Electronics	2	
28	2023-04-23	CUST028	Female	43	Beauty	1	
30	2023-10-29	CUST030	Female	39	Beauty	3	

Question 8


```
54   --Q8. Display all transactions where the Product Category is not 'Clothing'.
55   --Expected output: All columns
56   ----------------------------------------------------------------
57   SELECT *
58   FROM practical1.retail.sales
59   WHERE  NOT product_category = 'Clothing';
```

	# TRANSACTION_ID	DATE	A CUSTOMER_ID	A GENDER	# AGE	A PRODUCT_CATEGORY	# QUANTITY	#
1	1	2023-11-24	CUST001	Male	34	Beauty	3	
2	3	2023-01-13	CUST003	Male	50	Electronics	1	
3	5	2023-05-06	CUST005	Male	30	Beauty	2	
4	6	2023-04-25	CUST006	Female	45	Beauty	1	
5	8	2023-02-22	CUST008	Male	30	Electronics	4	
6	9	2023-12-13	CUST009	Male	63	Electronics	2	
7	12	2023-10-30	CUST012	Male	35	Beauty	3	
8	13	2023-08-05	CUST013	Male	22	Electronics	3	
9	15	2023-01-16	CUST015	Female	42	Electronics	4	
10	18	2023-04-30	CUST018	Female	47	Electronics	2	
11	21	2023-01-14	CUST021	Female	50	Beauty	1	
12	25	2023-12-26	CUST025	Female	64	Beauty	1	

Question 9

```
62   --Expected output: All columns
63   --------------------------------------------------------------
64   SELECT *
65   FROM practical1.retail.sales
66   WHERE QUANTITY >= 3;
67
```

↳ **Results**   ~ Chart   🔍 ▥ ⬇ ▯ 🕐

# TRANSACTION_ID	🕐 DATE	A CUSTOMER_ID	A GENDER	# AGE	A PRODUCT_CATEGORY	# QUANTITY	
1	1	2023-11-24	CUST001	Male	34	Beauty	3
2	8	2023-02-22	CUST008	Male	30	Electronics	4
3	10	2023-10-07	CUST010	Female	52	Clothing	4
4	12	2023-10-30	CUST012	Male	35	Beauty	3
5	13	2023-08-05	CUST013	Male	22	Electronics	3
6	14	2023-01-17	CUST014	Male	64	Clothing	4
7	15	2023-01-16	CUST015	Female	42	Electronics	4
8	16	2023-02-17	CUST016	Male	19	Clothing	3
9	17	2023-04-22	CUST017	Female	27	Clothing	4
10	20	2023-11-05	CUST020	Male	22	Clothing	3
11	23	2023-04-12	CUST023	Female	35	Clothing	4
12	30	2023-10-29	CUST030	Female	39	Beauty	3

Question 10

```
--Q10. Count the total number of transactions.
--Expected output: Total_Transactions
--------------------------------------------------------------
SELECT COUNT(*)AS total_transactions
FROM practical1.retail.sales
--------------------------------------------------------------
```

Results   ~ Chart   🔍 ▥ ⬇ ▯ 🕐

TOTAL_TRANSACTIONS
1000

Question 11

```
74    ---Q11. Find the average Age of customers.
75    --Expected output: Average_Age
76    -----------------------------------------------------------------
77    SELECT AVG(age) As avg_age
78    FROM practical1.retail.sales;
79
```

Results ~ **Chart**

AVG_AGE
1	41.392000

Question 12

```
80    --Q12. Find the total quantity of products sold.
81    --Expected output: Total_Quantity
82    -----------------------------------------------------------------
83    SELECT SUM(quantity) As total_quanity
84    FROM practical1.retail.sales;
85    -----------------------------------------------------------------
```

Results ~ **Chart**

TOTAL_QUANITY
1	2514

Question 13

```
86    --Q13. Find the maximum Total Amount spent in a single transaction.
87    --Expected output: Max_Total_Amount
88    -----------------------------------------------------------------
89    SELECT MAX(total_amount) As Max_Total_Amount
90    FROM practical1.retail.sales;
91    -----------------------------------------------------------------
```

Results ~ **Chart**

MAX_TOTAL_AMOUNT
1	2000

Question 14

```
2    --Q14. Find the minimum Price per Unit in the dataset.
3    --Expected output: Min_Price_per_Unit
4    ----------------------------------------------------------------
5    SELECT MIN(price_per_unit) As Min_Price_Unit
6    FROM practical1.retail.sales;
7    ----------------------------------------------------------------
```

Results | ~ Chart

MIN_PRICE_UNIT
25

Question 15

```
100  ----------------------------------------------------------------
101  SELECT product_category,
102        COUNT (*)As Transaction_Count
103  FROM practical1.retail.sales
104  Group BY product_category;
105  ----------------------------------------------------------------
```

↳ Results | ~ Chart

	A PRODUCT_CATEGORY	# TRANSACTION_COUNT
1	Clothing	351
2	Beauty	307
3	Electronics	342

Question 16

```
108   ----------------------------------------------------------------
109   SELECT gender,
110         SUM(Total_Amount) As Total_Revenue
111   FROM practical1.retail.sales
112   GROUP BY gender;
113
```

GENDER	TOTAL_REVENUE
Male	223160
Female	232840

Question 17

```
116   ----------------------------------------------------------------
117   SELECT product_category,
118         AVG(price_per_unit) AS Average_Price
119   FROM practical1.retail.sales
120   GROUP BY product_category;
121   ----------------------------------------------------------------
```

PRODUCT_CATEGORY	AVERAGE_PRICE
Beauty	184.055375
Clothing	174.287749
Electronics	181.900585

Question 18

```
126  SELECT product_category,
127       SUM(total_amount) As total_revenue
128  FROM practical1.retail.sales
129  GROUP BY product_category
130  HAVING SUM(total_amount)>1000;
131  -------------------------------------------------------------------
```

↳ Results   ∿ Chart   🔍 ▥ ⬇ ◫ 🕐

A PRODUCT_CATEGORY	# TOTAL_REVENUE
1 Beauty	143515
2 Clothing	155580
3 Electronics	156905

Question 19

```
---
132     --Q19. Find the average quantity per product category where the average is more than 2.
133     --Expected output: Product Category, Average_Quantity
134     -------------------------------------------------------------------
135  SELECT product_category,
136       AVG(quantity) As avg_quanitity
137  FROM practical1.retail.sales
```

↳ Results   ∿ Chart   🔍 ▥ ⬇ ◫ 🕐

A PRODUCT_CATEGORY	# AVG_QUANITITY
1 Beauty	2.511401
2 Clothing	2.547009
3 Electronics	2.482456

```
137   FROM practical1.retail.sales
138   GROUP BY product_category
139   HAVING AVG(quantity)>2;
140   ----------------------------------------------------------------
141
142
```

↳ **Results**   ∿ Chart   🔍 ▥ ↓ ▢ ◷

A PRODUCT_CATEGORY	# AVG_QUANITITY
Beauty	2.511401
Clothing	2.547009
Electronics	2.482456

Question 20

PRACTICAL1.RETAIL ⌄   Settings ⌄   ☑ Open in Workspaces   🔍

```
143   --Expected output: Transaction ID, Total Amount, Spending_Level
144   ----------------------------------------------------------------
145   SELECT transaction_id,
146         total_amount,
147    CASE
148      WHEN total_amount>1000 THEN 'High'
```

↳ **Results**   ∿ Chart   🔍 ▥ ↓ ▢ ◷

	# TRANSACTION_ID	# TOTAL_AMOUNT	A SPENDING_LEVEL
1	1	150	Low
2	2	1000	Low
3	3	30	Low
4	4	500	Low
5	5	100	Low
6	6	30	Low
7	7	50	Low
8	8	100	Low
9	9	600	Low
10	10	200	Low
11	11	100	Low
12	12	75	Low

```
148        WHEN total_amount>1000 THEN 'High'
149        ELSE 'Low'
150   END As Spending_level
151   FROM practical1.retail.sales;
152   --------------------------------------------------------------
153
```

↳ Results   ∿ Chart   ⌕ ▥ ⬇ ▦ ◷

	# TRANSACTION_ID	# TOTAL_AMOUNT	A SPENDING_LEVEL
1	1	150	Low
2	2	1000	Low
3	3	30	Low
4	4	500	Low
5	5	100	Low
6	6	30	Low
7	7	50	Low
8	8	100	Low
9	9	600	Low
10	10	200	Low
11	11	100	Low
12	12	75	Low

⑦

Question 21

```
157   --Expected output: Customer ID, Age, Age_Group
158   --------------------------------------------------------------
159   SELECT customer_id,
160        age,
161     CASE
162        WHEN age < 30 THEN 'Youth'
```

↳ Results   ∿ Chart   ⌕ ▥ ⬇ ▦ ◷

	A CUSTOMER_ID	# AGE	A AGE_GROUP
1	CUST001	34	Adult
2	CUST002	26	Youth
3	CUST003	50	Adult
4	CUST004	37	Adult
5	CUST005	30	Adult
6	CUST006	45	Adult
7	CUST007	46	Adult
8	CUST008	30	Adult
9	CUST009	63	Senior
10	CUST010	52	Adult
11	CUST011	23	Youth
12	CUST012	35	Adult

```
162        WHEN age < 30 THEN 'Youth'
163        WHEN age BETWEEN  30 AND 59 THEN 'Adult'
164        ELSE 'Senior'
165   END As Age_Group
166   FROM practical1.retail.sales;
167
```

Results ~ Chart

	A CUSTOMER_ID	# AGE	A AGE_GROUP
1	CUST001	34	Adult
2	CUST002	26	Youth
3	CUST003	50	Adult
4	CUST004	37	Adult
5	CUST005	30	Adult
6	CUST006	45	Adult
7	CUST007	46	Adult
8	CUST008	30	Adult
9	CUST009	63	Senior
10	CUST010	52	Adult
11	CUST011	23	Youth
12	CUST012	35	Adult