

# NULL FUNCTIONS

1. Find all records where Size is missing and the purchase\_amount is greater than 50. Expected Columns: Customer ID, Size, purchase\_amount, Item Purchased

The screenshot shows a database management interface with a sidebar on the left containing a tree view of databases and tables. The main area displays a SQL query and its results. The query is:

```
1 SELECT CUSTOMER_ID,  
2       SIZE,  
3       PURCHASE_AMOUNT,  
4       ITEM_PURCHASED  
5 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS  
6 WHERE SIZE IS NULL AND PURCHASE_AMOUNT >50
```

The results are displayed in a table with the following columns: #, CUSTOMER\_ID, SIZE, PURCHASE\_AMOUNT, and ITEM\_PURCHASED. The table contains 22 rows of data.

#	CUSTOMER_ID	SIZE	PURCHASE_AMOUNT	ITEM_PURCHASED
1	11	null	74.0	Handbag
2	15	null	54.0	Jeans
3	22	null	88.0	Shirt
4	32	null	54.0	Blouse
5	62	null	57.0	Blouse
6	73	null	65.0	Sandals
7	91	null	54.0	Shoes
8	97	null	56.0	Shoes
9	100	null	55.0	Sneakers
10	160	null	84.0	Coat

On the right side of the interface, there is a 'Query Details' panel showing the query duration (319ms), the number of rows (22), and the query ID (01bc5783-0001-04e3-0...). Below this, there is a small bar chart titled 'CUSTOMER\_ID' showing the distribution of customer IDs.

2. List the total number of purchases grouped by Season, treating NULL values as 'Unknown Season'. Expected Columns: Season, Total Purchases

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COFFEE\_SALES\_DATABASE

EXERCISES

PRACTICAL2

PRACTICAL\_4

INFORMATION\_SCHEMA

PUBLIC

Tables

SHOPPING\_TRENDS

RETAIL\_SALES\_DATABASE

SNOWFLAKE

SNOWFLAKE\_LEARNING\_DB

SHOPPING\_TRENDS 300 Rows

SEASON VARCHAR(16777216)

REVIEW\_RATING NUMBER(38,1)

SUBSCRIPTION\_STATUS BOOLEAN

SHIPPING\_TYPE VARCHAR(16777216)

DISCOUNT\_APPLIED BOOLEAN

PROMO\_CODE\_USED BOOLEAN

PREVIOUS\_PURCHASES NUMBER(38,1)

PAYMENT\_METHOD VARCHAR(16777216)

FREQUENCY\_OF\_PUR... VARCHAR(16777216)

PRACTICAL\_4.PUBLIC Settings

Code Versions

```

10 SELECT COUNT (ITEM_PURCHASED) AS TOTAL_PURCHASES,
11        IFNULL (SEASON, 'Unknown_Season')
12 FROM "PRACTICAL_4"."PUBLIC"."SHOPPING_TRENDS"
13 GROUP BY ALL;
14
15
16
17
18
19
20

```

Results Chart

#	TOTAL_PURCHASES	IFNULL (SEASON, 'UNKNOWN_SEASON')
1	71	Winter
2	68	Spring
3	28	Unknown_Season
4	58	Summer
5	50	Fall

Query Details

Query duration 64ms

Rows 5

Query ID 01bc578a-0001-048b-0...

Show more

TOTAL\_PURCHASES #

28 71

IFNULL (SEASON, 'UNKNOWN\_S...)

100% filled

### 3. Count how many customers used each Payment Method, treating NULLs as 'Not Provided'. Expected Columns: Payment Method, Customer Count

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RETAIL\_SALES\_DATABASE

SNOWFLAKE

SNOWFLAKE\_LEARNING\_DB

SHOPPING\_TRENDS 300 Rows

SEASON VARCHAR(16777216)

REVIEW\_RATING NUMBER(38,1)

SUBSCRIPTION\_STATUS BOOLEAN

SHIPPING\_TYPE VARCHAR(16777216)

DISCOUNT\_APPLIED BOOLEAN

PROMO\_CODE\_USED BOOLEAN

PREVIOUS\_PURCHASES NUMBER(38,1)

PAYMENT\_METHOD VARCHAR(16777216)

FREQUENCY\_OF\_PUR... VARCHAR(16777216)

PRACTICAL\_4.PUBLIC Settings

Code Versions

```

22 SELECT COUNT (CUSTOMER_ID) AS CUSTOMER_COUNT,
23        IFNULL (PAYMENT_METHOD, 'Not_Provided')
24 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
25 GROUP BY ALL
26
27
28
29
30
31
32

```

Results Chart

#	CUSTOMER_COUNT	IFNULL (PAYMENT_METHOD, 'NOT_PROVIDED')
1	51	PayPal
2	42	Debit Card
3	30	Not_Provided
4	38	Bank Transfer
5	53	Verimo
6	42	Cash
7	44	Credit Card

Query Details

Query duration 51ms

Rows 7

Query ID 01bc578c-0001-04e2-0...

Show more

CUSTOMER\_COUNT #

30 53

IFNULL (PAYMENT\_METHOD, 'N...)

100% filled

### 4. Show customers where Promo Code Used is NULL and Review Rating is below 3.0. Expected Columns: Customer ID, Promo Code Used, Review Rating, Item Purchased

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SNOWFLAKE

SNOWFLAKE\_LEARNING\_DB

SHOPPING\_TRENDS

300 Rows

...

#

CUSTOMER\_ID

NUMBER(38,0)

#

AGE

NUMBER(38,0)

#

GENDER

VARCHAR(16777216)

#

ITEM\_PURCHASED

VARCHAR(16777216)

#

CATEGORY

VARCHAR(16777216)

#

PURCHASE\_AMOUNT

NUMBER(38,0)

#

LOCATION

VARCHAR(16777216)

#

SIZE

VARCHAR(16777216)

#

COLOR

VARCHAR(16777216)

#

SEASON

VARCHAR(16777216)

PRACTICAL\_4.PUBLIC

Settings

Code Versions

21

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SELECT CUSTOMER\_ID,

PROMO\_CODE\_USED,

REVIEW\_RATING,

ITEM\_PURCHASED

FROM PRACTICAL\_4.PUBLIC.SHOPPING\_TRENDS

WHERE PROMO\_CODE\_USED IS NULL AND REVIEW\_RATING <3.0

Results

Chart

#

CUSTOMER\_ID

01

PROMO\_CODE\_USED

#

REVIEW\_RATING

#

ITEM\_PURCHASED

1

21

null

2.5

Jeans

2

38

null

2.6

Jeans

3

61

null

2.5

Jeans

4

80

null

2.6

Sneakers

5

125

null

2.8

Sneakers

6

128

null

2.5

Shoes

7

180

null

2.5

Shorts

8

285

null

2.9

Blouse

Query Details

...

Query duration

68ms

Rows

8

Query ID

01bc57a2-0001-04e7-0...

Show more

...

CUSTOMER\_ID

#

21

285

PROMO\_CODE\_USED

01

0% filled

100% null

5. Group customers by Shipping Type, and return the average purchase\_amount, treating missing values as 0. Expected Columns: Shipping Type, Average purchase\_amount

5:24pm

Practical 2

2025-04-29 4:55pm

2025-04-29 5:11pm

2025-04-29 5:22pm

CASE STUDY 2

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SNOWFLAKE

SNOWFLAKE\_LEARNING\_DB

SHOPPING\_TRENDS

300 Rows

...

#

SEASON

VARCHAR(16777216)

#

REVIEW\_RATING

NUMBER(38,0)

01

SUBSCRIPTION\_STATUS

BOOLEAN

#

SHIPPING\_TYPE

VARCHAR(16777216)

01

DISCOUNT\_APPLIED

BOOLEAN

01

PROMO\_CODE\_USED

BOOLEAN

#

PREVIOUS\_PURCHASES

NUMBER(38,0)

#

PAYMENT\_METHOD

VARCHAR(16777216)

#

FREQUENCY\_OF...

VARCHAR(16777216)

PRACTICAL\_4.PUBLIC

Settings

Code Versions

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44

45

SELECT SHIPPING\_TYPE,

AVG (IFNULL (PURCHASE\_AMOUNT, '0')) AS AVERAGE\_PURCHASE\_AMOUNT ,

FROM PRACTICAL\_4.PUBLIC.SHOPPING\_TRENDS

GROUP BY ALL

Results

Chart

#

SHIPPING\_TYPE

#

AVERAGE\_PURCHASE\_AMOUNT

#

AVERAGE\_PURCHASE\_AMOUNT

1

Standard

47.67

54.87

2

Store Pickup

55.33

3

null

52.70

4

Express

53.45

5

2-Day Shipping

51.56

6

Free Shipping

50.21

7

Next Day Air

54.87

6. Display the number of purchases per Location only for those with more than 5 purchases and no NULL Payment Method. Expected Columns: Location, Total Purchases

The screenshot shows the Snowflake SQL IDE interface. On the left, the database schema is visible, including the 'SHOPPING\_TRENDS' table. The central pane contains the following SQL query:

```

38
39
40 SELECT LOCATION,
41        COUNT (CUSTOMER_ID) AS TOTAL_PURCHASES
42 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
43 GROUP BY ALL
44
45
46
47

```

The 'Results' tab is active, displaying a table with two columns: 'LOCATION' and '# TOTAL\_PURCHASES'. The results are as follows:

LOCATION	# TOTAL_PURCHASES
1 Maine	45
2 Rhode Island	37
3 null	25
4 Oregon	32
5 Florida	37
6 Kentucky	34
7 Massachusetts	33
8 Texas	25
9 New York	32

On the right, the 'Query Details' panel shows a query duration of 324ms and 9 rows returned. A 'Show more' button is visible.

7. Create a column Spender Category that classifies customers using CASE: 'High' if amount > 80, 'Medium' if BETWEEN 50 AND 80, 'Low' otherwise. Replace NULLs in purchase\_amount with 0. Expected Columns: Customer ID, purchase\_amount, Spender Category

The screenshot shows the Snowflake SQL IDE interface. The central pane contains the following SQL query:

```

44
45
46 |
47
48 SELECT CUSTOMER_ID,
49        IFNULL (PURCHASE_AMOUNT, '0'),
50        CASE
51          WHEN PURCHASE_AMOUNT >80 THEN 'HIGH'
52          WHEN PURCHASE_AMOUNT BETWEEN 50 AND 80 THEN 'MEDIUM'
53          ELSE 'LOW'
54        END AS SPENDER_CATEGORY
55 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
56

```

The 'Results' tab is active, displaying a table with three columns: '# CUSTOMER\_ID', '# IFNULL (PURCHASE\_AMOUNT, '0')', and 'A SPENDER\_CATEGORY'. The results are as follows:

# CUSTOMER_ID	# IFNULL (PURCHASE_AMOUNT, '0')	A SPENDER_CATEGORY
1	1	20.0 LOW
2	2	21.0 LOW
3	3	27.0 LOW
4	4	45.0 LOW
5	5	80.0 MEDIUM
6	6	82.0 HIGH
7	7	50.0 MEDIUM
8	8	29.0 LOW
9	9	100.0 HIGH
10	10	97.0 HIGH

On the right, the 'Query Details' panel shows a query duration of 310ms and 300 rows returned. A 'Show more' button is visible.

8. Find customers who have no Previous Purchases value but whose Color is not NULL. Expected Columns: Customer ID, Color, Previous Purchases

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- SNOWFLAKE\_SAMPLE\_DATA

SHOPPING\_TRENDS 300 Rows

# CUSTOMER\_ID NUMBER(38,0)

# AGE NUMBER(38,1)

Δ GENDER VARCHAR(16777216)

Δ ITEM\_PURCHASED VARCHAR(16777216)

Δ CATEGORY VARCHAR(16777216)

# PURCHASE\_AMOUNT NUMBER(38,1)

Δ LOCATION VARCHAR(16777216)

Δ SIZE VARCHAR(16777216)

Δ COLOR VARCHAR(16777216)

Δ SEASON VARCHAR(16777216)

60

```

61 SELECT CUSTOMER_ID,
62        COLOR,
63        PREVIOUS_PURCHASES
64 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
65 WHERE PREVIOUS_PURCHASES IS NULL AND COLOR IS NOT NULL
66
67
68
69

```

Results Chart

#	CUSTOMER_ID	COLOR	PREVIOUS_PURCHASES
1	8	Green	null
2	21	Yellow	null
3	25	White	null
4	37	Maroon	null
5	40	Gray	null
6	43	Black	null
7	44	Green	null
8	70	White	null
9	73	Maroon	null
10	75	Pink	null
11	89	Black	null

Query Details

Query duration 172ms

Rows 36

Query ID 01bc582a-0001-04d7-9...

Show more

CUSTOMER\_ID

8 298

9. Group records by Frequency of Purchases and show the total amount spent per group, treating NULL frequencies as 'Unknown'. Expected Columns: Frequency of Purchases, Total purchase\_amount

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  - SNOWFLAKE
  - SNOWFLAKE\_LEARNING\_DB
  - SNOWFLAKE\_SAMPLE\_DATA

SHOPPING\_TRENDS 300 Rows

# CUSTOMER\_ID NUMBER(38,0)

# AGE NUMBER(38,1)

Δ GENDER VARCHAR(16777216)

Δ ITEM\_PURCHASED VARCHAR(16777216)

Δ CATEGORY VARCHAR(16777216)

# PURCHASE\_AMOUNT NUMBER(38,1)

Δ LOCATION VARCHAR(16777216)

Δ SIZE VARCHAR(16777216)

Δ COLOR VARCHAR(16777216)

Δ SEASON VARCHAR(16777216)

64

```

65
66
67 SELECT IFNULL (FREQUENCY_OF_PURCHASES, 'Unknown'),
68        SUM (PURCHASE_AMOUNT) AS TOTAL_PURCHASE_AMOUNT
69 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
70 GROUP BY ALL
71
72
73
74
75
76
77

```

Results Chart

IFNULL (FREQUENCY_OF_PURCHASES, 'UNKNOWN')	TOTAL_PURCHASE_AMOUNT
Every 3 Months	1749
Weekly	2184
Bi-Weekly	2099
Monthly	1780
Annually	1785
Unknown	1518
Quarterly	2541
Fortnightly	2033

2033



10. Display a list of all Category values with the number of times each was purchased, excluding rows where Category is NULL. Expected Columns: Category, Total Purchases

The screenshot shows the Snowflake SQL IDE interface. The left sidebar displays the database schema, including the **SHOPPING\_TRENDS** table. The main editor contains the following SQL query:

```
SELECT CATEGORY,
       COUNT (CUSTOMER_ID) AS NUMBER_OF_PURCHASES
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE CATEGORY IS NOT NULL
GROUP BY ALL
```

The **Results** tab shows the output of the query:

	△ CATEGORY	≡ NUMBER_OF_PURCHASES
1	Footwear	70
2	Outerwear	60
3	Clothing	59
4	Accessories	78

Query Details on the right indicate a duration of 618ms and 4 rows returned.

11. Return the top 5 Locations with the highest total purchase amount, replacing NULLs with 0. Expected Columns: Location, Total purchase\_amount

The screenshot shows the Snowflake SQL IDE interface. The left sidebar displays the database schema, including the **SHOPPING\_TRENDS** table. The main editor contains the following SQL query:

```
SELECT LOCATION,
       SUM (IFNULL (PURCHASE_AMOUNT, '0')) AS TOTAL_PURCHASE_AMOUNT
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
GROUP BY ALL
ORDER BY TOTAL_PURCHASE_AMOUNT DESC
LIMIT 5;
```

The **Results** tab shows the output of the query:

	△ LOCATION	≡ TOTAL_PURCHASE_AMOUNT	≡ TOTAL_PURCHASE_AMOUNT
1	Maine	2,294	1,899
2	Florida	1,980	
3	Massachusetts	1,899	
4	Rhode Island	1,876	
5	Kentucky	1,798	

12. Group customers by Gender and Size, and count how many entries have a NULL Color. Expected Columns: Gender, Size, Null Color Count

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SNOWFLAKE\_LEARNING\_DB

SNOWFLAKE\_SAMPLE\_DATA

SHOPPING\_TRENDS 300 Rows

# CUSTOMER\_ID NUMBER(38,0)

# AGE NUMBER(38,1)

Δ GENDER VARCHAR(16777216)

Δ ITEM\_PURCHASED VARCHAR(16777216)

Δ CATEGORY VARCHAR(16777216)

# PURCHASE\_AMOUNT NUMBER(38,1)

Δ LOCATION VARCHAR(16777216)

Δ SIZE VARCHAR(16777216)

Δ COLOR VARCHAR(16777216)

Δ SEASON VARCHAR(16777216)

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```
SELECT GENDER,
       SIZE,
       COUNT (COLOR) AS COLOR_WITH_NULL
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE COLOR IS NULL
GROUP BY GENDER, SIZE
```

Results Chart

	GENDER	SIZE	# COLOR_WITH_NULL	
1	Male	M	0	
2	Male	null	0	
3	Male	S	0	
4	Male	L	0	
5	Male	XL	0	

Query Details

Query duration 398ms

Rows 5

Query ID 01bc5888-0001-0508-0...

Show more

GENDER

Male 5

SIZE

13. Identify all Item Purchased where more than 3 purchases had NULL Shipping Type. Expected Columns: Item Purchased, NULL Shipping Type Count

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SNOWFLAKE\_LEARNING\_DB

SNOWFLAKE\_SAMPLE\_DATA

SHOPPING\_TRENDS 300 Rows

# CUSTOMER\_ID NUMBER(38,0)

# AGE NUMBER(38,1)

Δ GENDER VARCHAR(16777216)

Δ ITEM\_PURCHASED VARCHAR(16777216)

Δ CATEGORY VARCHAR(16777216)

# PURCHASE\_AMOUNT NUMBER(38,1)

Δ LOCATION VARCHAR(16777216)

Δ SIZE VARCHAR(16777216)

Δ COLOR VARCHAR(16777216)

Δ SEASON VARCHAR(16777216)

94

95

96

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107

```
SELECT ITEM_PURCHASED,
       COUNT(SHIPPING_TYPE) AS NULL_SHIPPING_TYPE
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE SHIPPING_TYPE IS NULL AND (SHIPPING_TYPE IS NULL) >3
GROUP BY ITEM_PURCHASED
```

Results Chart

ITEM_PURCHASED	NULL_SHIPPING_TYPE
----------------	--------------------

Query produced no results

Query Details

Query duration 64ms

Rows 0

Query ID 01bc5886-0001-045f-0...

Show more

14. Show a count of how many customers per Payment Method have NULL Review Rating. Expected Columns: Payment Method, Missing Review Rating Count

Screenshot of a Snowflake SQL interface showing a query and its results.

**Query:**

```
SELECT ITEM_PURCHASED,
       COUNT(SHIPPING_TYPE) AS NULL_SHIPPING_TYPE
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE SHIPPING_TYPE IS NULL AND (SHIPPING_TYPE IS NULL) > 3
GROUP BY ITEM_PURCHASED
```

**Results:**

ITEM_PURCHASED	NULL_SHIPPING_TYPE
Query produced no results	

**Query Details:**

- Query duration: 64ms
- Rows: 0
- Query ID: 01bc5896-0001-045f-0...
- Show more

**Database Schema:**

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- SNOWFLAKE\_LEARNING\_DB
- SNOWFLAKE\_SAMPLE\_DATA

**Table Schema: SHOPPING\_TRENDS**

Column	Data Type
CUSTOMER_ID	NUMBER(38,0)
AGE	NUMBER(38,0)
GENDER	VARCHAR(16777216)
ITEM_PURCHASED	VARCHAR(16777216)
CATEGORY	VARCHAR(16777216)
PURCHASE_AMOUNT	NUMBER(38,0)
LOCATION	VARCHAR(16777216)
SIZE	VARCHAR(16777216)
COLOR	VARCHAR(16777216)
SEASON	VARCHAR(16777216)

15. Group by Category and return the average Review Rating, replacing NULLs with 0, and filter only where average is greater than 3.5. Expected Columns: Category, Average Review Rating.



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SHOPPING\_TRENDS 300 Rows

SEASON VARCHAR(16777216)

REVIEW\_RATING NUMBER(38,1)

SUBSCRIPTION\_STATUS BOOLEAN

SHIPPING\_TYPE VARCHAR(16777216)

DISCOUNT\_APPLIED BOOLEAN

PROMO\_CODE\_USED BOOLEAN

PREVIOUS\_PURCHASES NUMBER(38,1)

PAYMENT\_METHOD VARCHAR(16777216)

FREQUENCY\_OF... VARCHAR(16777216)

PRACTICAL\_4.PUBLIC Settings

Code Versions

```

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SELECT CATEGORY,
      AVG (IFNULL (REVIEW_RATING, '0')) AS AVERAGE_REVIEW_RATING
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE REVIEW_RATING >3.5
GROUP BY ALL

```

Results Chart

CATEGORY	AVERAGE_REVIEW_RATING
1 Footwear	4.3
2 Outerwear	4.3
3 null	4.2
4 Accessories	4.2
5 Clothing	4.2

Summary: 4.3

16. List all Colors that are missing (NULL) in at least 2 rows and the average Age of customers for those rows. Expected Columns: Color, Average Age

2025-04-18 5:24pm Practical 2 2025-04-29 4:55pm 2025-04-29 5:11pm 2025-04-29 5:22pm CASE STUDY 2 coffee saes brifhtlight Copy of coffee saes brifhtl... 2025-05-14 1:34

ACCOUNTADMIN COMPUTE\_WH (X-Small) Share

Databases Worksheets

Search objects

CASESTUDY\_2

COFFEE\_SALES\_DATABASE

EXERCISES

PRACTICAL2

PRACTICAL\_4

INFORMATION\_SCHEMA

PUBLIC

Tables

SHOPPING\_TRENDS

RETAIL\_SALES\_DATABASE

SNOWFLAKE

SNOWFLAKE\_LEARNING\_DB

SHOPPING\_TRENDS 300 Rows

CUSTOMER\_ID NUMBER(38,0)

AGE NUMBER(38,1)

GENDER VARCHAR(16777216)

ITEM\_PURCHASED VARCHAR(16777216)

CATEGORY VARCHAR(16777216)

PURCHASE\_AMOUNT NUMBER(38,1)

LOCATION VARCHAR(16777216)

SIZE VARCHAR(16777216)

COLOR VARCHAR(16777216)

SEASON VARCHAR(16777216)

PRACTICAL\_4.PUBLIC Settings

Code Versions

```

114
115
116
117
118
119
120
121
122
123
124
125
126
127
SELECT COLOR,
      AVG(AGE) AS AVERAGE_AGE
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE COLOR IS NULL AND (COLOR IS NULL) <=2
GROUP BY COLOR

```

Results Chart

COLOR	AVERAGE_AGE
1 null	47.8

Summary: 100% filled

Sum 47.8461538

Average 47.8461538

17. Use CASE to create a column Delivery Speed: 'Fast' if Shipping Type is 'Express' or 'Next Day Air', 'Slow' if 'Standard', 'Other' for all else including NULL. Then count how many customers fall into each category.

The screenshot shows the Snowflake SQL IDE interface. The query editor contains the following SQL code:

```
SELECT COUNT (CUSTOMER_ID) AS CUSTOMER_COUNT,
CASE
WHEN SHIPPING_TYPE IN ('Express', 'Next Day Air' ) THEN 'FAST'
WHEN SHIPPING_TYPE = 'Standard' THEN 'SLOW'
ELSE 'OTHER'
END AS DELIVERY_SPEED
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
GROUP BY ALL
SELECT CASE
```

The Results tab shows the following data:

#	CUSTOMER_COUNT	DELIVERY_SPEED
1	45	SLOW
2	166	OTHER
3	89	FAST

Query Details: Query duration 77ms, Rows 3, Query ID 01bc59ea-0001-0541-0...

18. Find customers whose purchase\_amount is NULL and whose Promo Code Used is 'Yes'.  
Expected Columns: Customer ID, purchase\_amount, Promo Code Used

The screenshot shows the Snowflake SQL IDE interface. The query editor contains the following SQL code:

```
SELECT CUSTOMER_ID,
PURCHASE_AMOUNT,
PROMO_CODE_USED
FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
WHERE PURCHASE_AMOUNT IS NULL AND PROMO_CODE_USED = 'YES'
```

The Results tab shows the following data:

#	CUSTOMER_ID	PURCHASE_AMOUNT	PROMO_CODE_USED
1	13	null	TRUE
2	30	null	TRUE
3	78	null	TRUE
4	95	null	TRUE
5	124	null	TRUE
6	129	null	TRUE
7	130	null	TRUE
8	138	null	TRUE
9	153	null	TRUE
10	168	null	TRUE

Query Details: Query duration 591ms, Rows 20, Query ID 01bc59af-0001-050e-0...

19. Group by Location and show the maximum Previous Purchases, replacing NULLs with

0, only where the average rating is above 4.0. Expected Columns: Location, Max Previous Purchases, Average Review Rating

The screenshot shows a SQL IDE interface with a dark theme. The left sidebar contains a 'Databases' panel with a search bar and a list of databases: CASESTUDY\_2, COFFEE\_SALES\_DATABASE, EXERCISES, PRACTICAL2, PRACTICAL\_4, RETAIL\_SALES\_DATABASE, SNOWFLAKE, SNOWFLAKE\_LEARNING\_DB, and SNOWFLAKE\_SAMPLE\_DATA. The main editor displays a SQL query:

```
151
152
153 SELECT LOCATION,
154        MAX (PREVIOUS_PURCHASES) AS MAX_PREVIOUS_PURCHASE,
155        AVG (IFNULL (REVIEW_RATING, '0')) AS AVERAGE_REVIEW_RATING
156 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
157 GROUP BY ALL
158 HAVING AVG (REVIEW_RATING) >4.0
159
160
```

Below the query editor, the 'Results' tab is active, showing a table with three columns: LOCATION, MAX\_PREVIOUS\_PURCHASE, and AVERAGE\_REVIEW\_RATING. The table is empty, with the message 'Query produced no results' displayed. The right sidebar shows 'Query Details' with a duration of 36ms, 0 rows, and a query ID of 01bc5e0a-0001-0579-0...

20. Show customers who have a NULL Shipping Type but made a purchase in the range of 30 to 70 USD. Expected Columns: Customer ID, Shipping Type, purchase\_amount, Item Purchased

The screenshot shows a SQL IDE interface with a dark theme. The left sidebar contains a 'Databases' panel with a search bar and a list of databases: CASESTUDY\_2, COFFEE\_SALES\_DATABASE, EXERCISES, PRACTICAL2, PRACTICAL\_4, RETAIL\_SALES\_DATABASE, SNOWFLAKE, SNOWFLAKE\_LEARNING\_DB, and SNOWFLAKE\_SAMPLE\_DATA. The main editor displays a SQL query:

```
160
161
162 SELECT CUSTOMER_ID,
163        SHIPPING_TYPE,
164        PURCHASE_AMOUNT,
165        ITEM_PURCHASED
166 FROM PRACTICAL_4.PUBLIC.SHOPPING_TRENDS
167 WHERE SHIPPING_TYPE IS NULL
168 HAVING PURCHASE_AMOUNT BETWEEN 30 AND 70
169
170
171
172
173
174
```

Below the query editor, the 'Results' tab is active, showing a table with four columns: CUSTOMER\_ID, SHIPPING\_TYPE, PURCHASE\_AMOUNT, and ITEM\_PURCHASED. The table contains 7 rows of data:

#	CUSTOMER_ID	SHIPPING_TYPE	PURCHASE_AMOUNT	ITEM_PURCHASED
1	15	null	54.0	Jeans
2	105	null	43.0	Shirt
3	141	null	37.0	Shorts
4	196	null	66.0	Coat
5	213	null	36.0	Shirt
6	235	null	38.0	Sandals
7	293	null	35.0	null

The right sidebar shows 'Query Details' with a duration of 381ms, 7 rows, and a query ID of 01bc5d3f-0001-05f4-0...

