

Mikateko Mpapele

Practical 3: Advanced SQL Null Functions

Query 1: List all records where Size is missing and the purchase_amount is greater than 50:

```
1  --List all records where Size is missing and the purchase_amount is greater than 50
2  SELECT customer_id,size,purchase_amount,item_purchased
3  FROM shoping_trends
4  WHERE size IS NULL AND purchase_amount>50;
5  -----
```

Add parameter

	customer_id	size	purchase_amount	item_purchased	
1	11	null	74	Handbag	
2	15	null	54	Jeans	
3	22	null	88	Shirt	
4	32	null	54	Blouse	
5	62	null	57	Blouse	
6	73	null	65	Sandals	

Query 2: . List the total number of purchases grouped by Season, treating NULL values as 'Unknown Season':

```
6  --List the total number of purchases grouped by Season
7  SELECT season,COUNT(customer_id) AS total_number_of_purchases,ifnull(season,'Unknown Season')
8  FROM shoping_trends
9  GROUP BY Season
10 ORDER BY total_number_of_purchases DESC;
11
```

Add parameter

	season	total_number_of_purchases	ifnull(season, Unknown Season)	
1	Winter	80	Winter	
2	Spring	73	Spring	
3	Summer	65	Summer	
4	Fall	55	Fall	
5	null	27	Unknown Season	

Query 3: Count how many customers used each Payment Method, treating NULLs as 'Not Provided'.

```

12  --Count how many customers used each Payment Method, treating NULLs as Not Provided
13  SELECT payment_method,COUNT(customer_id) AS total_number_of_customers,ifnull(payment_method,'Not Provided')
14  FROM shopping_trends
15  GROUP BY payment_method
16  ORDER BY total_number_of_customers DESC;
-----

```

Add parameter

	^A _C payment_method	¹ ₂ ³ total_number_of_customers	^A _C ifnull(payment_method, Not Provided)	
1	Venmo	53	Venmo	
2	PayPal	51	PayPal	
3	Credit Card	44	Credit Card	
4	Cash	42	Cash	
5	Debit Card	42	Debit Card	
6	Bank Transfer	38	Bank Transfer	
7	null	30	Not Provided	

Query 4: Show customers where Promo Code Used is NULL and Review Rating is below 3.0.

```

17  -----
18  --List of customers where promo_used is null and review ratings<3
19  SELECT customer_id, promo_code_used, review_rating,item_purchased
20  FROM shopping_trends
21  WHERE promo_code_used IS NULL AND review_rating<3.0;
-----

```

Add parameter

	¹ ₂ ³ customer_id	^A _C promo_code_used	¹ ₂ review_rating	^A _C 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	

Query 5: Group customers by shipping type and return average purchase amount:

```
21 -----
22 --Group customers by shipping type and return avg_purchase_amount
23 ✓ SELECT round(avg(purchase_amount),2) AS avg_purchase_amount,
24        shipping_type,
25        ifnull(avg_purchase_amount,0)
26 FROM shoping_trends
27 GROUP BY shipping_type;
28 -----
```

Add parameter

	1.2 avg_purchase_amount	A ^B _C shipping_type	1.2 ifnull(lateralAliasReference(avg_purchase_amount), 0)
1	55	Standard	55
2	60.73	Store Pickup	60.73
3	61.87	null	61.87

Query 6: List total purchases per location, having total purchases>5.

```
28 -----
29 --List total purchases and group them by location where total purchases>5
30 SELECT COUNT(customer_id) AS total_purchases,location
31 FROM shoping_trends
32 GROUP BY location
33 HAVING total_purchases>5;
34 -----
```

Add parameter

	1 ² ₃ total_purchases	A ^B _C location
1	45	Maine
2	37	Rhode Island
3	25	null
4	32	Oregon
5	37	Florida

Query 7: Categorize customers by the amount they spend.

34-----
35 --Categorize customers by the amount they spend
36 SELECT customer_id,purchase_amount,ifnull(purchase_amount,0),
37 CASE
38 When purchase_amount>80 then 'High'
39 When purchase_amount between '50' and '80' then 'Medium'
40 ELSE 'Otherwise'
41 END AS Spender_Category

Add parameter

← Results 7 of 7 →

Table ▾ +

	¹ ₃ customer_id	¹ ₃ purchase_amount	¹ ₃ ifnull(purchase_amount, 0)	^A _C Spender_Category
9	9	100	100	High
10	10	97	97	High
11	11	74	74	Medium
12	12	59	59	Medium
13	13	null	0	Otherwise
14	14	91	91	High
15	15	54	54	Medium

Query 8: List of customers with no previous purchases but color IS NOT NULL.

43-----
44 SELECT customer_id,color,previous_purchases
45 FROM shoping_trends
46 WHERE previous_purchases IS NULL AND color IS NOT NULL;
47

Add parameter

← Results 8 of 8 →

Table ▾ +

	¹ ₃ customer_id	^A _C color	¹ ₃ previous_purchases
1	8	Green	null
2	21	Yellow	null
3	25	White	null
4	37	Maroon	null
5	40	Gray	null

Query 9: Group customers by frequency of purchase and return total amount spent.

47

--Group customers by frequency of purchase and return total amount spent

48

SELECT frequency_of_purchases,

49

SUM(purchase_amount) AS total_purchase_amount,

50

ifnull(frequency_of_purchases,'Unknown')

51

FROM shoping_trends

52

GROUP BY frequency_of_purchases;

53

Add parameter

←Results 9 of 9→

Table

+

	^A _C frequency_of_purchases	¹ ₂ ³ total_purchase_amount	^A _C ifnull(frequency_of_purchases, Unknown)
1	Every 3 Months	1749	Every 3 Months
2	Weekly	2184	Weekly
3	Bi-Weekly	2099	Bi-Weekly
4	Monthly	1780	Monthly
5	Annually	1765	Annually
6	null	1518	Unknown
7	Fortnightly	2033	Fortnightly

Query 10: Group purchases by category and return total purchases per category, where category IS NOT NULL.

54

55

--Group purchases by category and return total purchases

56

SELECT category, COUNT(category) AS total_purchases

57

FROM shoping_trends

58

WHERE category IS NOT NULL

59

GROUP BY category;

Add parameter

Table

+

	^A _C category	¹ ₂ ³ total_purchases
1	Footwear	70
2	Outerwear	60
3	Clothing	59
4	Accessories	78

Query 11: Group purchase by location and return total purchase amount for the top 5 locations:

```
60 -----
61 --Group purchases by location and return total purchase amount
62 SELECT location, SUM(purchase_amount) AS total_purchase_amount,ifnull(total_purchase_amount,0)
63 FROM shoping_trends
64 GROUP BY location
65 LIMIT 5;
```

Add parameter

	A ^B _C location	1 ² ₃ total_purchase_amount	1 ² ₃ ifnull(lateralAliasReference(total_purchase_amount), 0)
1	Maine	2294	2294
2	Rhode Island	1876	1876
3	null	1470	1470
4	Oregon	1454	1454
5	Florida	1980	1980

Query 12: Group customers by gender and size and return total number of color, including null entries

```
66 -----
67 --Group customers by gender and size and return total number of colors,including null entries
68 SELECT gender,size, COUNT(color)
69 FROM shoping_trends
70 WHERE color IS NOT NULL
71 GROUP BY gender,size;
```

Add parameter

	A ^B _C gender	A ^B _C size	1 ² ₃ count(color)
1	Male	XL	71
2	Male	L	54
3	Male	S	55
4	Male	M	62
5	Male	null	29

Query 13: Identify items purchase and return shipping type count, including null entries.

```

72
73 --identify items purchased and return shipping type count,including null entries|
74 ✓ SELECT DISTINCT item_purchased,shipping_type,
75     COUNT(shipping_type)
76 FROM shoping_trends
77 WHERE shipping_type IS NOT NULL
78 GROUP BY item_purchased, shipping_type;

```

Add parameter

← Results 13 of 13 → Table ▾ +

	^A _C item_purchased	^A _C shipping_type	¹ ₃ count(shipping_type)	
1	Jeans	Standard	3	
2	Jeans	Store Pickup	5	
3	Handbag	Express	3	
4	Coat	Store Pickup	6	
5	Coat	2-Day Shipping	4	

Query 14: total number of customers with missing review rating,grouped by payment method.

```

79
80 --total number of customers with missing review rating, grouped by payment method|
81 SELECT payment_method,Count(customer_id) AS customers_no_review_rating,review_rating
82 FROM shoping_trends
83 WHERE review_rating IS NULL
84 GROUP BY payment_method,review_rating;

```

Add parameter

← Results 14 of 14 → Table ▾ +

	^A _C payment_method	¹ ₃ customers_no_review_rating	¹ ₂ review_rating	
1	Credit Card	8	null	
2	Cash	4	null	
3	Bank Transfer	4	null	
4	Debit Card	7	null	
5	Venmo	9	null	
6	PayPal	3	null	
7	null	2	null	

Query 15: Group customers by category and return average review rating

```

86  -- group customers by category and return avg_review_rating
87  SELECT category,
88         round(avg(review_rating),2) AS avg_review_rating,
89         ifnull(avg_review_rating,0)
90  FROM shoping_trends
91  GROUP BY category

```

Add parameter

Results 15 of 15

	category	1.2 avg_review_rating	1.2 ifnull(lateralAliasReference(avg_review_rating), 0)
1	Footwear	3.66	3.66
2	Outerwear	3.82	3.82
3	null	3.73	3.73
4	Accessories	3.73	3.73

Query 16: List two rows with missing color and return the average age for the rows

```

94  --list two rows with missing color and return the average age for the rows.
95  SELECT DISTINCT color,
96         round(avg(age),2) AS avg_age
97  FROM shoping_trends
98  WHERE color IS NOT NULL
99  GROUP BY color
100 LIMIT 2;

```

Add parameter

Results 16 of 16

	color	1.2 avg_age
1	Turquoise	45.32
2	Black	46.36

Query 17: Flag shipping type by delivery speed and return total customers per category,including null shipping type.

```

101 -----
102 --Categorize Shippng Type By Delivery Speed and return customer count for each category
103 SELECT shipping_type, Count(customer_id) AS customer_count,
104        CASE
105            When shipping_type = 'Express' OR shipping_type = 'Next Day Air' THEN 'Fast'
106            When shipping_type = 'Standard' THEN 'Slow'
107            ELSE 'Other'
108        END AS Delivery_Speed
109  FROM shoping_trends
110  GROUP BY shipping_type, Delivery_Speed;

```

Add parameter

Results 17 of 17

	shipping_type	customer_count	Delivery_Speed
1	Standard	45	Slow
2	Store Pickup	45	Other
3	null	27	Other

Query 18: List of customers who used the promo code and purchase amount IS NULL.

```
111 -----
112 --list of customers who used the promo code and purchase amount IS NULL
113 SELECT customer_id, purchase_amount, promo_code_used
114 FROM shoping_trends
115 WHERE promo_code_used='Yes' AND purchase_amount IS NULL;
```

Add parameter

Results 18 of 18

	customer_id	purchase_amount	promo_code_used
1	13	null	Yes
2	30	null	Yes
3	78	null	Yes
4	95	null	Yes

Query 19: Group by location and show the maximum previous purchase with rating>4.0:

```
117 --Group by Location and show the maximum Previous Purchases
118 SELECT location, MAX(previous_purchases) AS max_previous_purchases,
119        ifnull(max_previous_purchases,0)
120 FROM shoping_trends
121 WHERE review_rating>4.0
122 GROUP BY location
```

Add parameter

Results 19 of 19

	location	max_previous_purchases	ifnull(lateralAliasReference(max_previous_purchases), 0)
1	Florida	48	48
2	Oregon	38	38
3	Kentucky	45	45
4	New York	47	47
5	Rhode Island	50	50
6	Massachusetts	47	47
7	null	49	49

Query 20: List of customers whose shipping type IS NULL and purchase amount between 30 and 70 USD:

121 --List records where shipping_type is missing and purchase_amount is between 30 and 70

122 SELECT customer_id, shipping_type,purchase_amount,item_purchased

123 FROM shoping_trends

124 WHERE shipping_type IS NULL AND purchase_amount BETWEEN 30 AND 70;

Add parameter

← Results 20 of 20 →

Table

+

	123 customer_id	A B C shipping_type	123 purchase_amount	A B C item_purchased	
1	15	null	54	Jeans	
2	105	null	43	Shirt	
3	141	null	37	Shorts	
4	196	null	66	Coat	
5	213	null	36	Shirt	
6	235	null	38	Sandals	
7	293	null	35	null	