FAASOS Analysis Using SQL

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GOAL: The goal of this project is to analyze the food delivery service or restaurant system.

SUMMARY: This project likely involves a food delivery service or restaurant system. It tracks drivers, ingredients, rolls, and customer orders. The driver_order table records details of orders assigned to drivers, including pickup times, distances, durations, and cancellation information. The customer_orders table stores information about customer orders, including roll selection, excluded ingredients, extra included ingredients, and order dates.

Overall, the project aims to manage and track the food delivery process, including driver assignments, customer orders, and ingredient preferences. It provides a structured database schema for storing and retrieving relevant information related to the food delivery service or restaurant operations.

TABLES

-- show glimpse of driver table:

Driver_id	Reg_Date
1	2021-01-01
2	2021-01-03
3	2021-01-08
4	2021-01-15

-- show glimpse of Ingredients table:

Ingredients_id	Ingredients_name
1	BBQ Chicken
2	Chilli Sauce
3	Chicken
4	Cheese
5	Kebab
6	Mushrooms
7	Onions
8	Egg
9	Peppers
10	schezwan sauce
11	Tomatoes
12	Tomato Sauce

-- show glimpse of Rolls table:

Rolls_id	Rolls_Name
1	Non Veg Roll
2	Veg Roll

-- show glimpse of Rolls_Recipes table:

Roll_id	Ingredients
1	1,2,3,4,5,6,8,10
2	4,6,7,9,11,12

-- show glimpse of Driver_order table:

order_id	driver_id	pickup_time	distance	duration	cancellation
1	1	2021-01-01 18:15:34	20km	32 minutes	
2	1	2021-01-01 19:10:54	20km	27 minutes	
3	1	2021-01-02 23:57:37	13.4km	20 minutes	NaN
4	2	2021-01-04 13:53:03	23.4	40 minutes	NaN
5	3	2021-01-08 21:10:57	10	15 minutes	NaN
6	3	NULL	NULL	NULL	Cancellation
7	2	2021-01-08 21:30:45	25km	25 mins	NULL
8	2	2021-01-09 23:58:02	23.4 km	15 minute	NULL
9	2	NULL	NULL	NULL	Customer Cancellation
10	1	2021-01-11 18:50:20	10km	10 minutes	NULL

-- show glimpse of Customers_orders table:

order_id	customer_id	roll_id	not_include_items	extra_items_included	order_date
1	101	1			2021-01-01 18:05:02
2	101	1			2021-01-01 19:00:52
3	102	1			2021-01-02 23:51:23
3	102	2		NaN	2021-01-02 23:51:23
4	103	1	4		2021-01-04 13:23:46
4	103	1	4		2021-01-04 13:23:46
4	103	2	4		2021-01-04 13:23:46
5	104	1	NULL	1	2021-01-08 21:00:29
6	101	2	NULL	NULL	2021-01-08 21:03:13
7	105	2	NULL	1	2021-01-08 21:20:29
8	102	1	NULL	NULL	2021-01-09 23:54:33
9	103	1	4	1	2021-01-10 11:22:59
10	104	1	NULL	NULL	2021-01-11 18:34:49
10	104	1	2	6	2021-01-11 18:34:49

BUSINESS- PROBLEMS

ROLL-METRICES

1. HOW MANY ROLLS WERE ORDERED?
2. HOW MANY UNIQUE CUSTOMER ORDERS WERE MADE?
3. HOW MANY SUCCESSFULL ORDERS WERE DELIVERED BY EACH DRIVER?
4. HOW MANY OF EACH TYPE OF ROLL WAS DELIVERED?
5. HOW MANY VEG AND NON VEG ROLLS WERE ORDERED BY EACH CUSTOMER?
6. WHAT WAS THE MAXIMUM NUMBERS OF ROLLS DELIVERED IN A SINGLE ORDER?
7. FOR EACH CUSTOMER HOW MANY DELIVERED ROLLS HAD ATLEAST ONE CHANGE AND HOW MANY HAD NO CHANGE?
8. HOW MANY ROLES WERE DELIVERED THAT HAD BOTH EXCLUSIONS AND EXTRAS?
9. WHAT WAS THE TOTAL NUMBER OF ROLLS ORDERED FOR EACH HOURS OF THE DAY?
10. WHAT WAS THE NUMBER OF ORDER FOR EACH DAY OF THE WEEK?

** DRIVER AND CUSTOMER EXPERIENCE **

1. WHAT WAS THE AVERAGE TIME AVERAGE TIME IN MINUTE IT TOOK FOR EACH DRIVER TO ARRIVE AT THE FASSOS HEADQUATER TO PICK THE ORDER?
2. IS THERE ANY RELATIONSHIP BETWEEN THE NUMBER OF ROLLS AND HOW LONG THE ORDER TAKES TO PREPARE?
3. WHAT WAS THE AVERAGE DISTANCE TRAVEL FOR EACH CUSTOMER?
4. What was the longest and shortest delivery times for all orders?
5. WHAT WAS THE AVERAGE SPEED FOR EACH DRIVER FOR EACH DEILIVERY AND DO YOU NOTICE ANY TREND FOR THIS VALUES?
6. WHAT IS THE SUCCESSFUL PERCENTAGE FOR EACH DRIVER?

Analysis And Result

(Phase-1 Rolls-Metrices)

1. HOW MANY ROLLS WERE ORDERED?

```
SELECT COUNT(roll_id) AS ROLLS_WERE_ORDERED FROM CUSTOMERS_ORDERS;
```

ROLLS_WERE_ORDERED
28

2. HOW MANY UNIQUE CUSTOMER ORDERS WERE MADE?

```
SELECT COUNT(DISTINCT customer_id) UNIQUE_CUSTOMERS_WERE_ORDERED FROM
CUSTOMERS_ORDERS;
```

UNIQUE_CUSTOMERS_WERE_ORDERED
5

3. HOW MANY SUCCESSFULL ORDERS WERE DELIVERED BY EACH DRIVER?

```
SELECT driver_id,count(order_id) AS SUCCESSFULL_ORDERS_DELIVERED

FROM DRIVER_ORDER

WHERE cancellation <> 'Cancellation' AND cancellation <> 'Customer Cancellation'

GROUP BY driver_id;
```

driver_id	SUCCESSFULL_ORDERS_DELIVERED
1	3
2	1
3	1

4. HOW MANY OF EACH TYPE OF ROLL WAS DELIVERED?

```
SELECT roll_id, count(roll_id) AS count_roll_delivered

FROM CUSTOMERS_ORDERS C JOIN (SELECT *,

CASE WHEN cancellation IN ('Cancellation','Customer Cancellation') THEN 'Cancel'

ELSE 'Not Cancel' END AS Is_Delivered

FROM DRIVER_ORDER) U ON U.order_id=C.order_id WHERE Is_Delivered = 'Not Cancel' GROUP BY roll_id;
```

roll_id	count_roll_delivered
1	18
2	6

5. HOW MANY VEG AND NON VEG ROLLS WERE ORDERED BY EACH CUSTOMER?

```
SELECT CUSTOMER_ID,

CASE WHEN ROLL_ID = 1 THEN 'Non Veg'

ELSE "Veg" END AS category,COUNT(ORDER_ID) AS ORDERS_COUNT

FROM CUSTOMERS_ORDERS

GROUP BY CUSTOMER_ID,ROLL_ID

ORDER BY category DESC;
```

CUSTOMER_ID	category	ORDERS_COUNT
102	Veg	2
103	Veg	2
101	Veg	2
105	Veg	2
101	Non Veg	4
102	Non Veg	4
103	Non Veg	6
104	Non Veg	6

6. WHAT WAS THE MAXIMUM NUMBERS OF ROLLS DELIVERED IN A SINGLE ORDER?

```
SELECT x.order_id, count_roll_id

FROM(SELECT final.order_id,count_roll_id,

ROW_NUMBER() OVER (ORDER BY count_roll_id desc) AS row_num

FROM (SELECT C.order_id,COUNT(C.roll_id) AS count_roll_id

FROM CUSTOMERS_ORDERS C

JOIN (SELECT *, CASE WHEN cancellation IN ('Cancellation','Customer Cancellation') THEN 'Cancel'

ELSE 'Not Cancel' END AS Is_Delivered FROM DRIVER_ORDER) U ON C.order_id = U.order_id

GROUP BY U.order_id) final

) x WHERE row_num= 1;
```

order_id	count_roll_id
4	6

7.FOR EACH CUSTOMER HOW MANY DELIVERED ROLLS HAD ATLEAST ONE CHANGE AND HOW MANY HAD NO CHANGE?

```
WITH temp_t (orders_id,driver_id,distance,new_cancellation)

AS (SELECT order_id,driver_id,distance,CASE WHEN cancellation ='Cancellation' OR cancellation='Customer Cancellation' then 'Cancel' ELSE 'Not Cancel' END AS CNC
FROM driver_order)

SELECT final.customer_id,final.case_count,COUNT(orders_id) AS count_order_id FROM

(SELECT *,

CASE WHEN ff.no_include='No Change' AND ff.extra_include='No Change' THEN "NO Change"

ELSE " Atleast one Change" END Case_count FROM

(select * from temp_t T JOIN (SELECT order_id,customer_id,

CASE WHEN not_include_items IS NULL OR not_include_items ='' THEN 'No Change'

else 'Change' end as no_include, CASE WHEN extra_items_included IS NULL OR extra_items_included ='' OR extra_items_included = 'NaN' THEN 'No Change' ELSE 'Change' END AS extra_include
FROM CUSTOMERS_ORDERS) T1 ON T.orders_id=T1.order_id WHERE new_cancellation = 'Not Cancel') ff) final
GROUP BY final.customer_id,final.Case_count;
```

customer_id	Case_count	count_order_id
101	NO Change	4
102	NO Change	6
103	Atleast one Change	6
104	Atleast one Change	4
105	Atleast one Change	2
104	NO Change	2

8.HOW MANY ROLES WERE DELIVERED THAT HAD BOTH EXCLUSIONS AND EXTRAS?

```
WITH temp_t(orders_id,driver_id,distance,new_cancellation) AS (select order_id,driver_id,distance,CASE WHEN cancellation ='Cancellation' OR cancellation='Customer Cancellation' then 'Cancel' ELSE 'Not Cancel' end as CNC from driver_order),

table1 (Order_id, customer_id, roll_id, exclude_items, include_items) AS (SELECT Order_id, customer_id, roll_id,
CASE WHEN not_include_items='' OR not_include_items IS NULL OR not_include_items='NaN' THEN "No Change" ELSE "Exclude_change" END AS exclude_items,

CASE WHEN extra_items_included='' OR extra_items_included IS NULL OR extra_items_included='NaN' THEN "No Change" ELSE "Add_items_change" END AS include_items
FROM CUSTOMERS_ORDERS)SELECT COUNT(*) as total_exclude_include_items FROM temp_t T JOIN table1 T1ON
T.orders_id=T1.order_id WHERE exclude_items='Exclude_change' AND include_items='Add_items_change';
```

total_exclude_include_items
4

9.WHAT WAS THE TOTAL NUMBER OF ROLLS ORDERED FOR EACH HOURS OF THE DAY?

```
SELECT concat(cast(hour(ORDER_DATE)AS CHAR),"-",cast(hour(ORDER_DATE)+1 AS CHAR)) hours, count(roll_id) AS Roll_Ordered_hours

FROM CUSTOMERS_ORDERS

GROUP BY hours

ORDER BY Roll_Ordered_hours DESC;
```

hours	Roll_Ordered_hours
18-19	6
23-24	6
13-14	6
21-22	6
19-20	2
11-12	2

10.WHAT WAS THE NUMBER OF ORDER FOR EACH DAY OF THE WEEK?

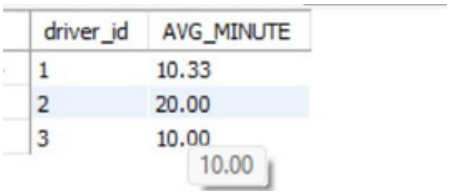
```
SELECT dayname(order_date) AS Day,count(roll_id) AS roll_orders_day

FROM CUSTOMERS_ORDERS

GROUP BY dayname(order_date)

ORDER BY roll_orders_day DESC;
```

Day	roll_orders_day
Friday	10
Monday	10
Saturday	6
Sunday	2

(Phase-2 DRIVER AND CUSTOMER EXPERIENCE)

1.WHAT WAS THE AVERAGE TIME AVERAGE TIME IN MINUTE IT TOOK FOR EACH DRIVER TO ARRIVE AT THE FASSOS HEADQUATER TO PICK THE ORDER?

```
WITH TABLE1(MINUTE_DIFF, driver_id) AS

(SELECT TIMESTAMPDIFF(MINUTE,TIME(C.Order_Date) ,TIME(D.Pickup_time)) AS MINUTE_DIFF,driver_id

FROM Customers_Orders C

JOIN Driver_Order D ON C.order_id=D.order_id WHERE D.pickup_time IS NOT NULL)

SELECT driver_id,ROUND(AVG(MINUTE_DIFF),2) AS AVG_MINUTE

FROM TABLE1 GROUP BY driver_id;
```

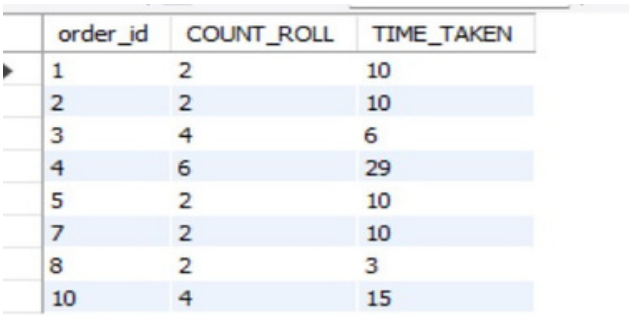


driver_id	AVG_MINUTE
1	10.33
2	20.00
3	10.00

10.00

2. IS THERE ANY RELATIONSHIP BETWEEN THE NUMBER OF ROLLS AND HOW LONG THE ORDER TAKES TO PREPARE?

```
WITH TABLE1(MINUTE_DIFF,driver_id,roll_id,order_id,customer_id) AS

(SELECT TIMESTAMPDIFF(MINUTE,TIME(C.Order_Date) ,TIME(D.Pickup_time)) AS
MINUTE_DIFF,driver_id,C.roll_id,C.order_id,C.customer_id
FROM Customers_Orders C

JOIN Driver_Order D

ON C.order_id=D.order_id

WHERE D.pickup_time IS NOT NULL)

SELECT order_id, COUNT(roll_id) COUNT_ROLL ,round(SUM(MINUTE_DIFF)/COUNT(roll_id),0) AS TIME_TAKEN
from
(SELECT roll_id, Order_id, customer_id, MINUTE_DIFF FROM TABLE1) final GROUP BY order_id;
```



order_id	COUNT_ROLL	TIME_TAKEN
1	2	10
2	2	10
3	4	6
4	6	29
5	2	10
7	2	10
8	2	3
10	4	15

3.WHAT WAS THE AVERAGE DISTANCE TRAVEL FOR EACH CUSTOMER?

```
SELECT Customer_id,Round(AVG(distance),2) as Average_distance
FROM (SELECT Customer_id,cast(trim(REPLACE(lower(distance),"km",""")) AS DECIMAL(4,2)) distance
FROM CUSTOMERS_ORDERS C
JOIN DRIVER_ORDER D
ON C.order_id=D.order_id) Final
GROUP BY Final.Customer_id;
```

Customer_id	Average_distance
101	20.00
102	16.73
103	23.40
104	10.00
105	25.00

4.What was the longest and shortest delivery times for all orders?

```
SELECT MAX(d)-MIN(d) as difference
FROM
(SELECT cast(final.duration_clean as decimal) as d
from
(SELECT *,
CASE WHEN duration LIKE '%min%' THEN substring(duration,1,2) ELSE duration END AS duration_clean
FROM driver_order
WHERE duration IS NOT NULL) Final) FF;
```

Result Grid

difference
30

5.WHAT WAS THE AVERAGE SPEED FOR EACH DRIVER FOR EACH DEILIVERY AND DO YOU NOTICE ANY TREND FOR THIS VALUES?

```
WITH TABLE1 (Speed,order_id,driver_id)

AS

(SELECT distance/time_ AS Speed,order_id,driver_id

FROM (SELECT cast(trim(REPLACE(lower(distance),"km","")) AS DECIMAL) distance

,CASE WHEN duration LIKE '%min%' then substring(duration,1,2) ELSE duration END AS Time_,order_id,driver_id

FROM DRIVER_ORDER) FINAL)

SELECT X.order_id,COUNT(roll_id),ROUND(avg(speed),2) as Average_speed

FROM (SELECT Speed,C.order_id,driver_id,roll_id FROM table1 T

JOIN customers_orders C ON T.order_id=C.order_id

WHERE Speed IS NOT NULL) X GROUP BY X.order_id;
```

order_id	COUNT(roll_id)	Average_speed
1	2	0.62
2	2	0.74
3	4	0.65
4	6	0.58
5	2	0.67
7	2	1
8	2	1.53
10	4	1

6.WHAT IS THE SUCCESSFUL PERCENTAGE FOR EACH DRIVER?

```
SELECT driver_id,(round(SUM(PERCEN)/COUNT(DRIVER_ID),2)*100) AS SUCCESSFUL_DELIVERY_PERCENTAGE

FROM

(SELECT driver_id,

CASE WHEN Cancellation LIKE '%Cancel%' THEN 0

ELSE 1 END AS PERCEN

FROM DRIVER_ORDER) FINAL

GROUP BY driver_id;
```

driver_id	SUCCESSFUL_DELIVERY_PERCENTAGE
1	100.00
2	75.00
3	50.00

Key Points and Insights:

- Understanding the popularity and demand for different types of rolls is crucial for menu planning and inventory management.
- Monitoring driver performance and efficiency in successfully delivering orders is essential for maintaining customer satisfaction.
- Analyzing customer preferences for veg and non-veg rolls helps tailor offerings and target specific segments.
- Identifying peak hours and busy days allows for resource allocation and operational optimization.
- Assessing delivery times, distances, and driver speeds helps improve efficiency and customer experience.