

Project: Customer Order and Acquisition Analysis

"Customer Behaviour and Promotional Strategy Analysis Using SQL"

Overview

This project involves analysing an order table containing critical information about customer orders, including order details, customer behaviour, restaurant preferences, and promotional usage. The goal is to derive actionable insights by solving complex business questions related to customer acquisition, retention, and engagement.

Dataset Structure

The order table contains the following columns:

```
CREATE TABLE [dbo].[orders](
    [Order_id] [varchar](20) NULL,
    [Customer_code] [varchar](20) NULL,
    [Placed_at] [datetime] NULL,
    [Restaurant_id] [varchar](10) NULL,
    [Cuisine] [varchar](20) NULL,
    [Order_status] [varchar](20) NULL,
    [Promo_code_Name] [varchar](20) NULL
) ON [PRIMARY]
GO
```

Key Business Questions & Analysis

- Top Restaurant by Cuisine Type

Identify the top-performing restaurant for each cuisine

- Daily New Customer Acquisition

Track the number of new customers acquired daily since the platform's launch.

- One-Time Customers in January 2025

Count users who placed their first order in January 2025, placed only one order that month, and did not order again.

- Inactive Customers (Acquired One Month Ago with No Recent Orders)

Retrieve a list of customers acquired one month ago (first order on promo) who have not placed any orders in the last 7 days.

- Trigger-Based Customer Engagement (Every 3rd Order)

Create a query to identify customers who have placed their 3rd, 6th, or 9th order for targeted communication.

- Promo-Exclusive Customers

List customers who placed more than one order, with all orders using a promo code.

- Customer Acquisition Percentage (January 2025, Non-Promo First Orders)

Calculate the percentage of customers acquired in January 2025 (first order without a promo code) out of the total customer base.

Expected Outcomes

- Insights into customer acquisition trends.
- Identification of high-value and churned customers.
- Optimization of promotional strategies.
- Data-driven decision-making for customer engagement campaigns.

Technologies & Methods Used

- SQL (Window functions, subqueries, aggregations, date filtering)
- Data Analysis (Customer segmentation, cohort analysis, retention metrics)
- Business Intelligence (Identifying growth opportunities, improving retention strategies)

1. Find top restaurant by cuisine type without using limit and top function.

```
select * from(
    select *, ROW_NUMBER() over(partition by Cuisine order by
TOTAL_ORDERS desc) as rn
    from(
        select Cuisine,restaurant_id, count(*) as TOTAL_ORDERS
        from orders
        group by Cuisine, restaurant_id
    ) A) B
where rn<2
```

Results Messages				
	Cuisine	restaurant_id	TOTAL_ORDERS	rn
1	American	BURGER99	8	1
2	Italian	PIZZA123	10	1
3	Japanese	SUSHI456	6	1
4	Lebanese	KMKMH6787	10	1
5	Mexican	TACO789	7	1

2. Find the daily new customer count from the launch date (everyday how many new customers are we acquiring)

```
select FIRST_ORDER_DATE, count(*) as NO_OF_NEW_CUSTOMERS
from(
    select Customer_code, cast(min(Placed_at) as date) as
FIRST_ORDER_DATE
    from orders
    group by Customer_code
) A
group by FIRST_ORDER_DATE
```

Results Messages		
	FIRST_ORDER_DATE	NO_OF_NEW_CUSTOMERS
1	2025-01-01	2
2	2025-01-02	1
3	2025-01-03	1
4	2025-01-04	1
5	2025-01-05	3
6	2025-01-06	1
7	2025-01-07	1
8	2025-01-08	1
9	2025-01-09	1
10	2025-01-10	3
11	2025-01-11	1
12	2025-01-12	1
13	2025-01-13	1
14	2025-01-14	1
15	2025-01-15	2
16	2025-01-16	1
17	2025-01-17	1

3. Count of all the users who were acquired in jan 2025 (1st order in jan) and only placed one order in jan and did not place any other order

```
select Customer_code
from orders
where DATEPART(MONTH,Placed_at)=1
and Customer_code not in (select Customer_code
    from orders
    where DATEPART(MONTH,Placed_at)>1
    group by Customer_code)
group by Customer_code
having count(customer_code)=1
```

Results		Messages
	Customer_code	
1	BCD7890123456ABC	
2	DEF5678901234MNO	
3	EFG1234567890DEF	
4	FGH7890123456GHI	
5	GHI3456789012MNO	
6	GHI5678901234XYZ	
7	HIJ9876543210DEF	
8	IJK1234567890JKL	
9	JAN_ONLY_ORDER1	
10	JAN_ONLY_ORDER2	
11	JKL3456789012XYZ	
12	JKL7890123456MNO	
13	KLM5678901234DEF	
14	LMN9876543210JKL	
15	MNO1234567890PQR	
16	MNO7890123456XYZ	
17	NOP3456789012DEF	

4. List of all the customers with no order in last 7 days but were acquired one month ago with their first order on promo.

--2025-03-31 to 2025-03-24

```
select *
from orders o1
inner join (
    select Customer_code, MIN(Placed_at) as FIRST_ORDER_DATE
    ,MAX(Placed_at) as LATEST_ORDER_DATE
    from orders
    group by Customer_code) o2
on o1.Customer_code=o2.Customer_code and o1.Placed_at=o2.FIRST_ORDER_DATE
where o2.LATEST_ORDER_DATE< '2025-03-24' and
o2.FIRST_ORDER_DATE <'2025-02-28'and o1.Promo_code_Name is not null
```

Results		Messages								
	Order_id	Customer_code	Placed_at	Restaurant_id	Cuisine	Order_status	Promo_code_Name	Customer_code	FIRST_ORDER_DATE	LATEST_ORDER_DATE
1	OF1900191806	ABC1234567890XYZ	2025-01-01 08:45:00.000	AMERICAN2	American	Delivered	NEWUSER	ABC1234567890XYZ	2025-01-01 08:45:00.000	2025-01-05 13:20:00.000
2	OF1900191833	ABC9876543210MNO	2025-01-27 15:15:00.000	PIZZA123	Italian	Delivered	FIRSTORDER	ABC9876543210MNO	2025-01-27 15:15:00.000	2025-03-15 15:15:00.000
3	OF1900191816	BCD7890123456ABC	2025-01-10 20:15:00.000	AMERICAN2	American	Delivered	NEWUSER	BCD7890123456ABC	2025-01-10 20:15:00.000	2025-01-10 20:15:00.000
4	OF1900191808	DEF9876543210XYZ	2025-01-02 09:15:00.000	MEXICAN2	Mexican	Delivered	FIRSTORDER	DEF9876543210XYZ	2025-01-02 09:15:00.000	2025-03-02 09:15:00.000
5	OF1900191826	FGH7890123456GHI	2025-01-20 20:45:00.000	AMERICAN2	American	Delivered	NEWUSER	FGH7890123456GHI	2025-01-20 20:45:00.000	2025-01-20 20:45:00.000
6	OF1900191809	GHI5678901234XYZ	2025-01-03 14:30:00.000	SUSHI456	Japanese	Delivered	NEWUSER	GHI5678901234XYZ	2025-01-03 14:30:00.000	2025-01-03 14:30:00.000
7	OF1900191818	HIJ9876543210DEF	2025-01-12 14:45:00.000	MEXICAN2	Mexican	Delivered	FIRSTORDER	HIJ9876543210DEF	2025-01-12 14:45:00.000	2025-01-12 14:45:00.000
8	OF1900191841	JAN_ONLY_ORDER1	2025-01-15 13:30:00.000	KMKMH6787	Lebanese	Delivered	NEWUSER	JAN_ONLY_ORDER1	2025-01-15 13:30:00.000	2025-01-15 13:30:00.000
9	OF1900191842	JAN_ONLY_ORDER2	2025-01-20 18:45:00.000	LEBANESE2	Lebanese	Delivered	FIRSTORDER	JAN_ONLY_ORDER2	2025-01-20 18:45:00.000	2025-01-20 18:45:00.000
10	OF1900191810	JKL3456789012XYZ	2025-01-04 12:00:00.000	JAPANESE2	Japanese	Delivered	FIRSTORDER	JKL3456789012XYZ	2025-01-04 12:00:00.000	2025-01-04 12:00:00.000
11	OF1900191836	JKL7890123456MNO	2025-01-30 20:00:00.000	AMERICAN2	American	Delivered	NEWUSER	JKL7890123456MNO	2025-01-30 20:00:00.000	2025-01-30 20:00:00.000
12	OF1900191828	LMN9876543210JKL	2025-01-22 14:30:00.000	MEXICAN2	Mexican	Delivered	FIRSTORDER	LMN9876543210JKL	2025-01-22 14:30:00.000	2025-01-22 14:30:00.000
13	OF1900191843	NO_ORDER_LAST7_1	2025-02-01 12:15:00.000	PIZZA123	Italian	Delivered	NEWUSER	NO_ORDER_LAST7_1	2025-02-01 12:15:00.000	2025-02-01 12:15:00.000
14	OF1900191844	NO_ORDER_LAST7_2	2025-02-05 19:30:00.000	ITALIAN2	Italian	Delivered	FIRSTORDER	NO_ORDER_LAST7_2	2025-02-05 19:30:00.000	2025-02-05 19:30:00.000
15	OF1900191857	NO_ORDER_RECENT	2025-02-10 12:30:00.000	TACO789	Mexican	Delivered	NEWUSER	NO_ORDER_RECENT	2025-02-10 12:30:00.000	2025-02-15 18:00:00.000
16	OF1900191812	PQR1234567890ABC	2025-01-06 11:30:00.000	LEBANESE2	Lebanese	Delivered	NEWUSER	PQR1234567890ABC	2025-01-06 11:30:00.000	2025-01-06 11:30:00.000
17	OF1900191838	PQR9876543210PQR	2025-01-31 14:00:00.000	MEXICAN2	Mexican	Delivered	FIRSTORDER	PQR9876543210PQR	2025-01-31 14:00:00.000	2025-01-31 14:00:00.000

5. Growth team is planning to create a trigger that will target customers after their every third order with a personalized communication and they have asked you to create a query for this (3rd, 6th, 9th)

```
select * from(
    select *
    ,ROW_NUMBER() over(partition by customer_code order by
    placed_at) as ORDER_NUMBER
    from orders)A
where ORDER_NUMBER%3=0 --and cast(Placed_at as date)=GETDATE()
```

Results		Messages						
	Order_id	Customer_code	Placed_at	Restaurant_id	Cuisine	Order_status	Promo_code_Name	ORDER_NUMBER
1	OF1900191867	ABC9876543210MNO	2025-03-15 15:15:00.000	LEBANESE2	Lebanese	Delivered	NULL	3
2	OF1900191864	LAST_ORDER_7DAYS	2025-03-31 16:30:00.000	KMKMH6787	Lebanese	Delivered	NULL	3
3	OF1900191853	MULTI_CUISINE_CUST	2025-01-15 18:45:00.000	PIZZA123	Italian	Delivered	NULL	3
4	OF1900191870	MULTI_CUISINE_CUST	2025-03-31 14:45:00.000	PIZZA123	Italian	Delivered	NULL	6
5	OF1900191861	PROMO_FIRST_ONLY	2025-02-10 17:30:00.000	SUSHI456	Japanese	Delivered	NULL	3
6	OF1900191847	THIRD_ORDER_CUST1	2025-01-15 17:45:00.000	BURGER99	American	Delivered	NULL	3
7	OF1900191850	THIRD_ORDER_CUST2	2025-01-20 16:30:00.000	TACO789	Mexican	Delivered	NULL	3
8	OF1900191803	UFDDN1991918XUY1	2025-01-10 18:45:30.000	PIZZA123	Italian	Cancelled	HUNGRY20	3
9	OF1900191869	UFDDN1991918XUY1	2025-03-28 11:30:00.000	BURGER99	American	Delivered	NULL	6
10	OF1900191873	UVW7890123456JKL	2025-03-25 19:15:00.000	PIZZA123	Italian	Delivered	TASTY50	3

6. List customers who placed more than 1 order and all their orders on a promo only

```
select * from(  
    select Customer_code, count(*) as TOTAL_ORDERS,  
           count(Promo_code_Name) as ORDERS_ON_PROMO  
    from orders  
    group by Customer_code) A  
where TOTAL_ORDERS>1 and TOTAL_ORDERS=ORDERS_ON_PROMO
```

```
select Customer_code, count(*) as TOTAL_ORDERS,  
count(Promo_code_Name) as ORDERS_ON_PROMO  
from orders  
group by Customer_code  
having count(*)>1 and count(*)=count(Promo_code_Name)
```

Results		Messages	
	Customer_code	TOTAL_ORDERS	ORDERS_ON_PROMO
1	DEF9876543210XYZ	2	2
2	UVW7890123456JKL	3	3

7. What %age of customers were originally acquired in jan 2025.(first order without promo code)

```
select count(case when rn=1 and Promo_code_Name is null then  
Customer_code end)*100/COUNT(distinct Customer_code) as PERC  
from(  
    select *, ROW_NUMBER() over(partition by customer_code order by  
placed_at) as rn  
    from orders  
    where MONTH(Placed_at)=1) A
```

Results		Messages	
	PERC		
1	43		