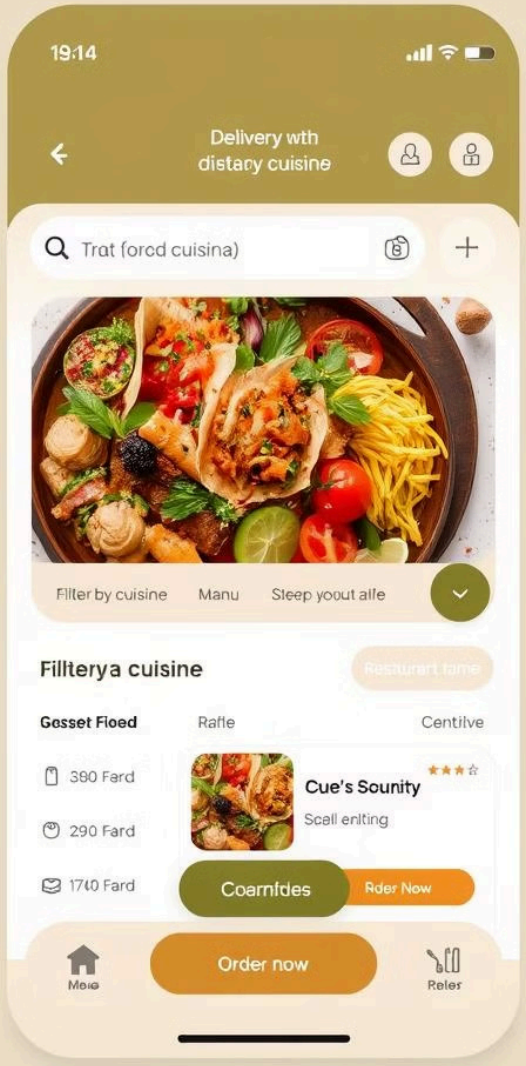
SWIGGY Case Study - Questions



Easy Level Questions

Find customers who have never ordered

This question requires identifying customers who have not placed any orders yet. This can be achieved by filtering the customer database for those with no order history.

Average Price/dish

To calculate the average price per dish, you need to divide the total revenue generated from dish sales by the total number of dishes sold. This will provide an average price for each dish offered.

Display average rating of all the Restaurants

This involves calculating the average rating for each restaurant based on customer reviews. The average rating can be displayed alongside the restaurant name to provide customers with an overview of restaurant quality.

Moderate Level Questions

1 Find the top 3 month in terms of the number of orders

This question involves analyzing order data to identify the top three months with the highest number of orders. This can be achieved by grouping orders by month and then sorting them in descending order based on the number of orders.

2 Find the top restaurant in terms of the number of orders for a given month

This requires filtering order data for a specific month and then identifying the restaurant with the highest number of orders within that month. This can be achieved by grouping orders by restaurant and then sorting them in descending order based on the number of orders.

3 Restaurants with monthly sales greater than x for

This involves filtering restaurant sales data for a specific month and identifying restaurants whose sales exceed a predefined threshold (x). This can be achieved by grouping sales data by restaurant and then filtering based on the sales amount.

4 Show all orders with order details for a particular customer in a particular date range

This requires filtering order data for a specific customer and date range. The filtered data should include all order details, such as the order ID, date, time, items ordered, and total amount.

Advanced Level Questions

Find restaurants with max repeated customers

This involves identifying restaurants with the highest number of repeat customers. This can be achieved by analyzing customer order history and identifying restaurants with the most frequent customer visits.

Month over month revenue growth of swiggy

This requires calculating the revenue growth of Swiggy on a month-over-month basis. This can be achieved by comparing the revenue generated in each month to the previous month and calculating the percentage change.

Customer - favorite food

This involves analyzing customer order history to identify the most frequently ordered dish for each customer. This can be achieved by grouping orders by customer and dish, and then identifying the dish with the highest order count.

Advanced Level Questions (cont.)

Find the most loyal customers for all restaurant

This involves identifying customers who have placed the most orders at a particular restaurant. This can be achieved by analyzing customer order history and identifying customers with the highest order frequency for each restaurant.

Month over month revenue growth of a restaurant

This requires calculating the revenue growth of a specific restaurant on a month-over-month basis. This can be achieved by comparing the revenue generated by the restaurant in each month to the previous month and calculating the percentage change.

Most Paired Products

This involves analyzing order data to identify the most frequently ordered pairs of products. This can be achieved by grouping orders by product pairs and then identifying the pair with the highest order count.

Customer Segmentation

New Customers

Customers who have placed their first order recently. This segment is crucial for onboarding and encouraging repeat purchases.

Frequent Customers

Customers who place orders regularly, indicating high engagement and loyalty. This segment is valuable for targeted promotions and personalized recommendations.

High-Value Customers

Customers who spend a significant amount on orders, representing a high revenue potential. This segment is ideal for exclusive offers and premium services.

Inactive Customers

Customers who haven't placed an order in a while. This segment requires reactivation strategies to re-engage them and bring them back to the platform.

Restaurant Performance Analysis

1 Order Volume

Track the number of orders received by each restaurant over time to identify trends and peak periods.

2 Average Order Value

Analyze the average amount spent per order to understand customer spending habits and identify high-value restaurants.

3 Customer Satisfaction

Monitor customer ratings and reviews to gauge restaurant performance and identify areas for improvement.

4 Delivery Time

Track delivery times to ensure timely service and customer satisfaction. Identify restaurants with consistently long delivery times for potential optimization.

5 Operational Efficiency

Analyze restaurant response times, order fulfillment rates, and other operational metrics to identify areas for improvement and optimize efficiency.

Marketing and Promotion Strategies

1

Targeted Promotions

Offer personalized discounts and deals based on customer preferences and order history.

2

Loyalty Programs

Reward frequent customers with points, discounts, and exclusive offers to encourage repeat purchases.

3

Social Media Marketing

Leverage social media platforms to engage with customers, promote new dishes, and run contests.

4

Influencer Marketing

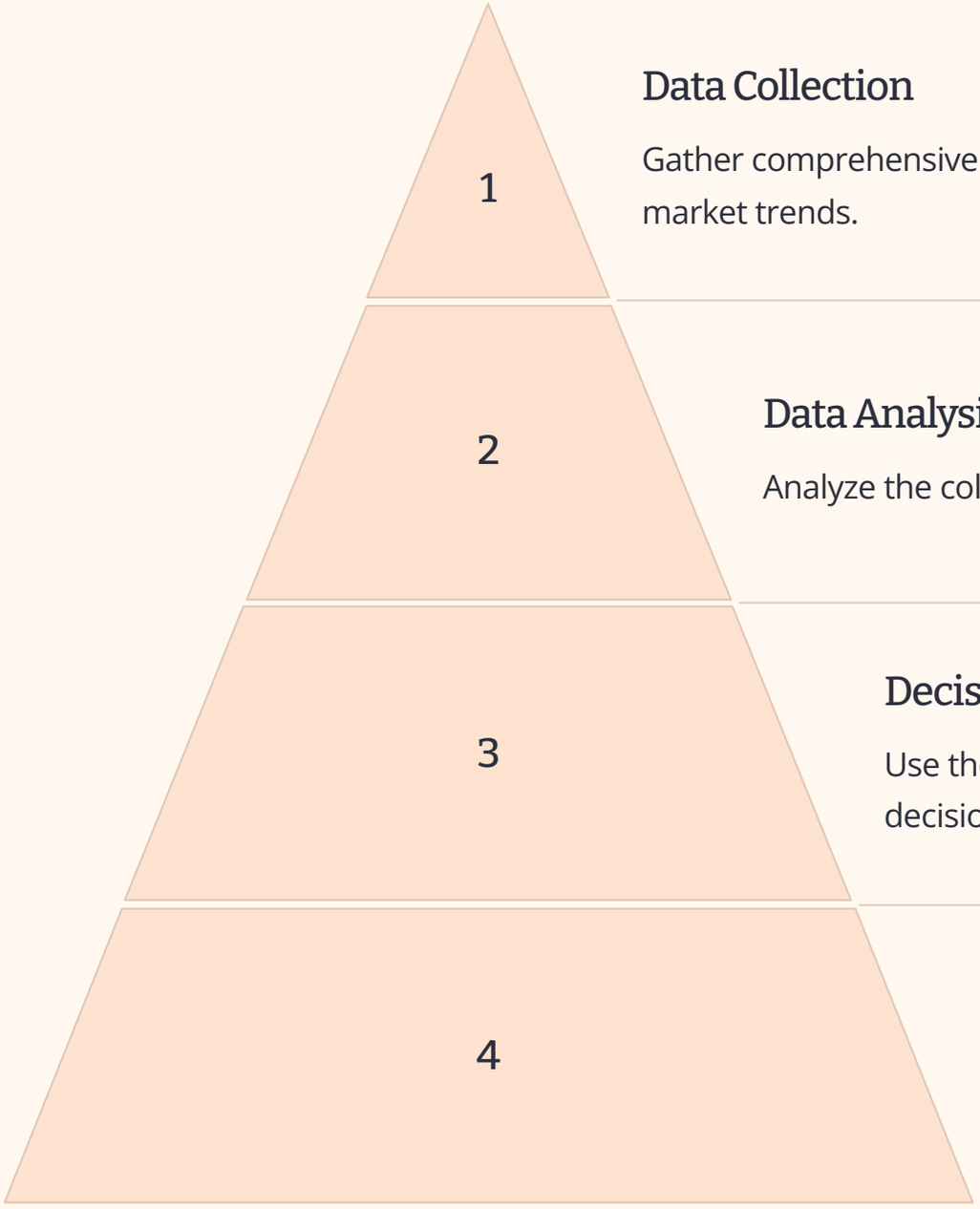
Partner with food bloggers and influencers to reach a wider audience and generate buzz for the platform.

5

Referral Programs

Encourage existing customers to refer new users to the platform by offering incentives for both parties.

Data-Driven Decision Making



Data Collection

Gather comprehensive data on customer behavior, restaurant performance, and market trends.

Data Analysis

Analyze the collected data to identify patterns, trends, and insights.

Decision Making

Use the insights derived from data analysis to inform strategic decisions.

Actionable Insights

Translate data-driven insights into actionable strategies for improving customer experience, optimizing operations, and driving growth.

Future Growth Opportunities

1

Expansion

Explore new markets and expand the platform's reach to cater to a wider customer base.

2

New Services

Introduce new services, such as grocery delivery, meal kits, or restaurant reservations, to diversify offerings.

3

Technology Innovation

Invest in cutting-edge technologies, such as AI-powered recommendations, chatbot support, and drone delivery.

4

Partnerships

Collaborate with other businesses, such as restaurants, grocery stores, and payment providers, to enhance services and reach new customers.

Solving The SWIGGY - Case Study SQL Query

This presentation will explore SQL queries to solve common and easy problems in a food delivery platform like Swiggy.

Q1. Find Customers Who Have Never Ordered

```
3
4   SELECT * FROM users
5   WHERE
6   user_id NOT IN (SELECT DISTINCT(user_id) from orders)
7
```

SQL Query

Data Output | Messages | Notifications

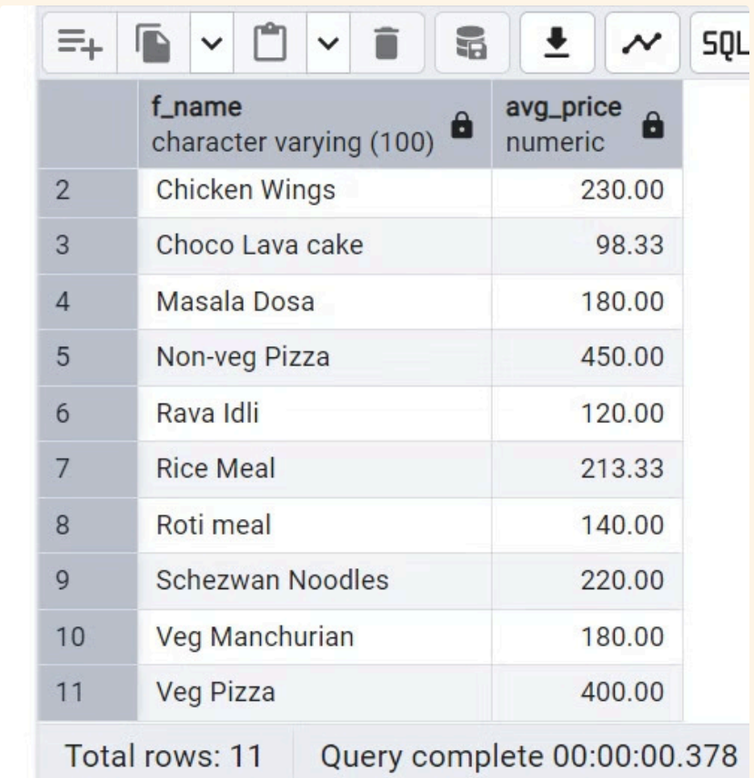
Showing rows:

	user_id [PK] integer	name character varying (100)	email character varying (100)	password text
1	6	Anupama	anupama@gmail.com	46rdw2
2	7	Rishabh	rishabh@gmail.com	4sw123

Output

Q2. Average Price Per Dish

```
11
12  SELECT f.f_name, ROUND(AVG(price), 2) AS avg_price
13  FROM menu AS m
14  JOIN food AS f
15  ON f.f_id = m.f_id
16  GROUP BY  f.f_name
17  ORDER BY f_name;
18
```



	f_name character varying (100)	avg_price numeric
2	Chicken Wings	230.00
3	Choco Lava cake	98.33
4	Masala Dosa	180.00
5	Non-veg Pizza	450.00
6	Rava Idli	120.00
7	Rice Meal	213.33
8	Roti meal	140.00
9	Schezwan Noodles	220.00
10	Veg Manchurian	180.00
11	Veg Pizza	400.00

Total rows: 11 Query complete 00:00:00.378

Q3. Display Average Rating of All Restaurants

```sql
SELECT
    r.r_name AS restaurant_name,
    ROUND(AVG(o.restaurant_rating), 2) AS average_rating
FROM
    orders o
JOIN
    restaurants r ON o.r_id = r.r_id
GROUP BY
    r.r_id, r.r_name
ORDER BY
    average_rating DESC;
```

Data Output | Messages | Notifications

	restaurant_name character varying (100)	average_rating numeric
1	box8	4.67
2	China Town	3.67
3	Dosa Plaza	3.67
4	kfc	2.20
5	dominos	1.67

Data Analysis and Insights

Customer Segmentation

Identify different customer groups based on order frequency, average order value, and preferred cuisines.

Restaurant Performance

Analyze restaurant ratings, order volume, and customer satisfaction to identify areas for improvement.

Delivery Efficiency

Track delivery times, order fulfillment rates, and driver performance to optimize delivery operations.

Data-Driven Decision Making

1

Targeted Marketing

Use customer segmentation data to create personalized marketing campaigns.

2

Menu Optimization

Analyze dish popularity and customer feedback to adjust menus and pricing.

3

Improved Customer Experience

Use data to identify and address customer pain points, enhancing overall satisfaction.

4

Operational Efficiency

Optimize delivery routes, driver allocation, and inventory management based on data insights.

Conclusion

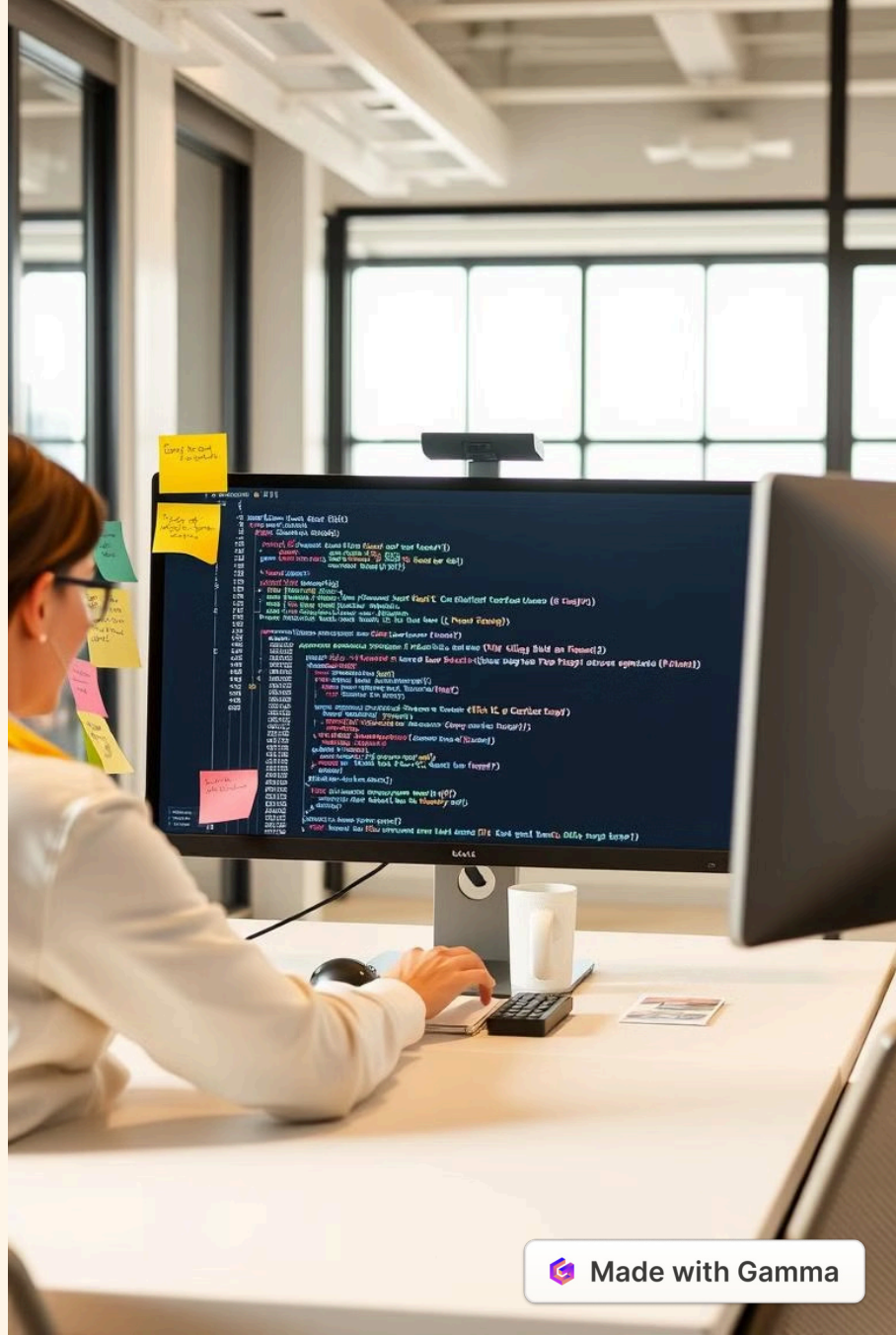
By leveraging SQL queries and data analysis, food delivery platforms like Swiggy can gain valuable insights into customer behavior, restaurant performance, and operational efficiency. This data-driven approach enables informed decision-making, leading to improved customer experience, increased revenue, and a competitive edge in the market.

Thank You

This presentation has explored the use of SQL queries to solve common problems in a food delivery platform. By understanding data relationships and analyzing insights, businesses can make informed decisions to enhance their operations and customer experience.

Solving The SWIGGY - Case Study SQL Query

Moderate level Question



1. **To find the top 3 month in terms of the number of orders**
2. **Find the top restaurant in terms of the number of orders for a given month**
3. **restaurants with monthly sales greater than x for**
4. **Show all orders with order details for a particular customer in a particular date range**

Q 1. To find the top 3 month in terms of the number of orders

SQL QUERY

```
SELECT
    TO_CHAR(DATE_TRUNC('month', date), 'Month') AS order_month,
    COUNT(order_id) AS total_orders
FROM
    orders
GROUP BY
    order_month
ORDER BY
    total_orders DESC
LIMIT 3;
```

Out-put

Data Output | Messages | Notifications

	order_month text	total_orders bigint
1	July	10
2	June	8
3	May	7

Q2. Find the top restaurant in terms of the number of orders for a given month

(eg. JULY)

SQL QUERY

```sql
SELECT r.r_name, COUNT(*)
FROM orders AS o
JOIN restaurants AS r
ON o.r_id = r.r_id
WHERE TRIM(TO_CHAR(date, 'Month')) = 'July'
GROUP BY o.r_id, r.r_name
ORDER BY COUNT(*) DESC
LIMIT 3;
```

Out-put

Data Output | Messages | Notifications

	r_name character varying (100)	count bigint
1	kfc	3
2	dominos	2
3	box8	2

Q3. restaurants with monthly sales greater than x for can any threshold value

(eg. month is june and threshold value-amount is 500)

```
48
49  SELECT
50    r.r_name,
51    SUM(o.amount) AS revenue
52  FROM
53    orders AS o
54    JOIN restaurants AS r ON o.r_id = r.r_id
55  WHERE
56    TRIM(TO_CHAR(date, 'Month')) = 'June'
57  GROUP BY
58    o.r_id,
59    r.r_name
60  HAVING
61    SUM(o.amount) > 500;
62
```

Data Output | Messages | Notifications

	r_name character varying (100)	revenue numeric
1	dominos	950.00
2	kfc	990.00

Q4. Show all orders with order details for a particular customer in a particular date range

eg. ("What all did **Ankit order from 10th June 2022 to 10th July 2022?**")

```sql
SELECT
  o.order_id,
  r.r_name,
  f.f_name
FROM
  orders o
  JOIN restaurants r ON r.r_id = o.r_id
  JOIN order_details od ON o.order_id = od.order_id
  JOIN food f ON f.f_id = od.f_id
WHERE
  user_id = (
    SELECT
      user_id
    FROM
      users
    WHERE
      name LIKE 'Ankit'
  )
  AND date > '2022-06-10'
  AND date < '2022-07-10';
```

Data Output | Messages | Notifications

	order_id integer	r_name character varying (100)	f_name character varying (100)
1	1018	Dosa Plaza	Schezwan Noodles
2	1018	Dosa Plaza	Veg Manchurian
3	1019	China Town	Schezwan Noodles
4	1019	China Town	Veg Manchurian

Analyzing Customer Order Frequency

Identify Frequent Customers

This involves analyzing the order history of customers to identify those who place orders frequently. This information can be used to target these customers with personalized promotions and offers.

Predict Future Orders

Understanding customer order frequency can help us predict future orders. This information can be used to optimize inventory levels, staffing, and delivery routes.

1

2

3

Analyze Order Patterns

By examining the frequency of orders over time, we can identify patterns in customer behavior. For example, we might notice that customers tend to order more frequently during certain times of the year or on specific days of the week.

Optimizing Delivery Routes

1

Real-Time Tracking

Using real-time GPS data, we can track the location of delivery drivers and optimize their routes based on traffic conditions and other factors.

2

Dynamic Route Planning

Dynamic route planning algorithms can adjust delivery routes in real-time to minimize delivery times and costs.

3

Delivery Time Estimates

Accurate delivery time estimates can be provided to customers based on real-time traffic conditions and optimized routes.

Improving Customer Experience

Personalized Recommendations

By analyzing customer order history and preferences, we can provide personalized recommendations for new items and promotions.

Order Tracking

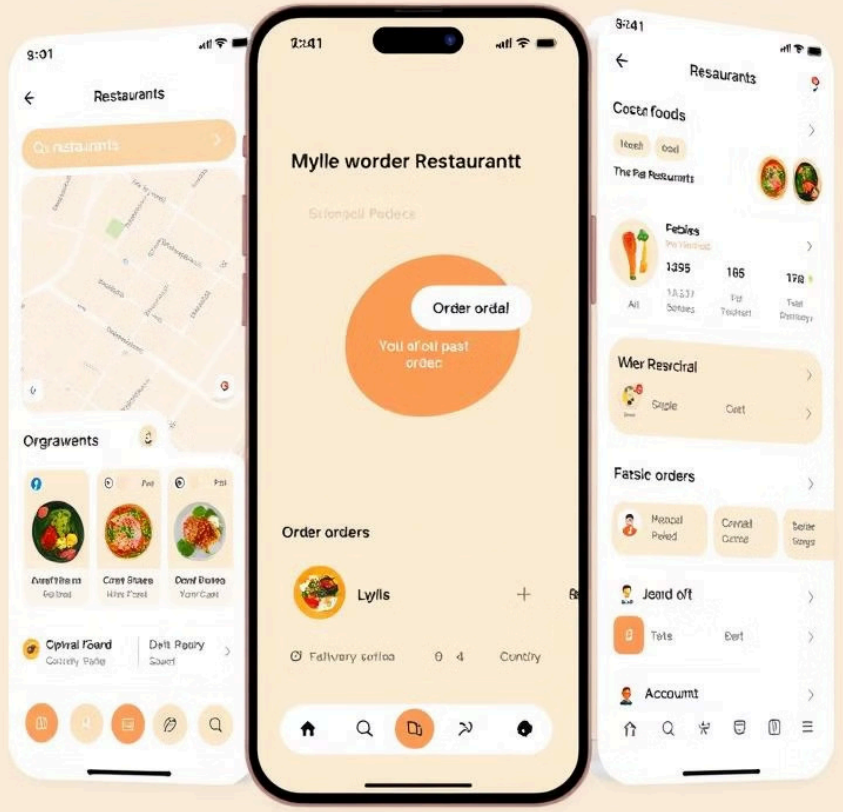
Customers can track the status of their orders in real-time, providing them with peace of mind and transparency.

Customer Support

Providing prompt and efficient customer support can help resolve any issues and improve customer satisfaction.

Solving The SWIGGY - Case Study SQL Query

Advanced Level Question



Advanced Level Question

1. Find restaurants with max repeated customers
2. Month over month revenue growth of swiggy
3. Customer - favorite food
4. Find the most loyal customers for all restaurant
5. Month over month revenue growth of a restaurant
6. Most Paired Products

1.Find restaurants with max repeated customers

This query aims to identify the restaurants that have the highest number of repeat customers. This information can be valuable for understanding customer loyalty and identifying popular dining destinations.

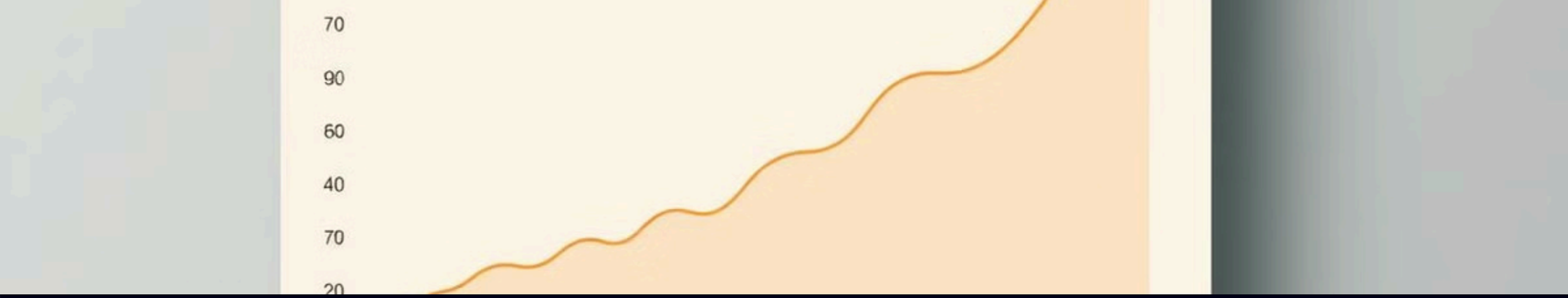
To achieve this, you would need to analyze customer order history data. You would need to group customers by restaurant and count the number of distinct orders placed by each customer. The restaurant with the highest count of repeat customers would be the desired result.

SQL QUERY

```sql
SELECT r.r_name, COUNT(*) AS "loyal_customers"
FROM (
    SELECT r_id, user_id, COUNT(*) AS "visits"
    FROM orders
    GROUP BY r_id, user_id
    HAVING COUNT(*) > 1
) t
JOIN restaurants r
ON r.r_id = t.r_id
GROUP BY t.r_id, r.r_name
ORDER BY "loyal_customers" DESC
LIMIT 1;
```

Data Output | Messages | Notifications

	r_name character varying (100)	loyal_customers bigint
1	kfc	2



2.Month over month revenue growth of swiggy

This query focuses on analyzing the revenue growth of Swiggy on a month-over-month basis. This metric provides insights into the company's financial performance and its ability to attract and retain customers.

Understanding month-over-month revenue growth is crucial for making informed business decisions, such as identifying growth opportunities, optimizing marketing strategies, and managing expenses.

1 2 3

To calculate month-over-month revenue growth, you would need to aggregate revenue data by month and then calculate the percentage change in revenue from one month to the next. This analysis would reveal the trends in revenue growth and highlight any significant fluctuations.

SQL QUERY

```sql
SELECT month, ROUND(( (revenue - prev) / prev ) * 100, 2) AS "percentage_change"
FROM (
    WITH sales AS (
        SELECT TO_CHAR(date, 'Month') AS "month", SUM(amount) AS "revenue"
        FROM orders
        GROUP BY TO_CHAR(date, 'Month')
        ORDER BY TO_DATE(TO_CHAR(date, 'Month'), 'Month')
    )
    SELECT month, revenue, LAG(revenue, 1) OVER (ORDER BY TO_DATE(month, 'Month')) AS prev
    FROM sales
) AS t;
```

Data Output | Messages | Notifications

	month text	percentage_change numeric
1	May	[null]
2	June	32.78
3	July	50.47

3. Customer - favorite food

Identifying Customer Preferences

This query aims to determine the favorite food items of each customer. This information can be used to personalize recommendations, tailor marketing campaigns, and improve customer satisfaction.

Analyzing Order History

To identify customer favorites, you would need to analyze order history data. You would need to group orders by customer and food item, and then count the number of times each food item has been ordered by each customer. The food item with the highest count for each customer would be their favorite.

SQL QUERY

```
97
98  WITH fav_food AS ( select t2.user_id, name, f_name , count(*) as frequency   from users as t1
99                     join orders        as t2        on t1.user_id = t2.user_id
00                     join order_details as t3        on t2.order_id = t3.order_id
01                     join food          as t4        on t3.f_id = t4.f_id
02                     group by t1.name, t4.f_name ,t2.user_id )
03
04  SELECT * FROM fav_food as f1 ---> think about now CORRELATED sub-Query
05  where  frequency = (select MAX(frequency) from fav_food as f2
06                                            where f2.user_id= f1.user_id )
07  order by user_id
08
```

Data Output | Messages | Notifications

Showing ro

	user_id integer	name character varying (100)	f_name character varying (100)	frequency bigint
1	1	Nitish	Choco Lava cake	5
2	2	Khushboo	Choco Lava cake	3
3	3	Vartika	Chicken Wings	3
4	4	Ankit	Schezwan Noodles	3
5	4	Ankit	Veg Manchurian	3
6	5	Neha	Choco Lava cake	5

4.Find the most loyal customers for all restaurant

Customer Loyalty Analysis

This query focuses on identifying the most loyal customers for each restaurant. This information can be valuable for understanding customer engagement, rewarding loyal customers, and improving customer retention strategies.

Analyzing Order Frequency

To identify loyal customers, you would need to analyze order history data. You would need to group orders by customer and restaurant, and then count the number of orders placed by each customer at each restaurant. The customers with the highest order counts for each restaurant would be considered the most loyal.

The Most cusdip restaurant?

Maly	Loyal lncy Pat)
Eartha Mcirecage	55.00
Eartha Bhopecisga	39.00
Eartha Jacutana	85.00
Earrlaa Iore bogcerid	49.00
Bartha Piccpaga	38.00
Earrha Pursupin	34.00
Earrha Lisencca	38.00
Earrha Blsecholces	39.00
Eartha Biseciceo	85.00
Eartha Plaschoweer	38.00
Earrha Mesyed	39.00
	35.00

SQL QUERY

```sql
WITH customer_order_counts AS (
    SELECT
        r_id,
        user_id,
        COUNT(order_id) AS total_orders
    FROM
        orders
    GROUP BY
        r_id, user_id
),
most_loyal_customers AS (
    SELECT
        r_id,
        user_id,
        total_orders,
        RANK() OVER (PARTITION BY r_id ORDER BY total_orders DESC) AS rank
    FROM
        customer_order_counts
)
```

```sql
SELECT
    r.r_name AS restaurant_name,
    u.name AS customer_name,
    mlc.total_ordersS
FROM
    most_loyal_customers mlc
JOIN
    restaurants r ON r.r_id = mlc.r_id
JOIN
    users AS u ON u.user_id = mlc.user_id
WHERE
    mlc.rank = 1;
```

Data Output | Messages | Notifications

	restaurant_name character varying (100)	customer_name character varying (100)	total_orders bigint
1	dominos	Neha	2
2	kfc	Neha	3
3	kfc	Vartika	3
4	box8	Nitish	3
5	Dosa Plaza	Ankit	3
6	China Town	Ankit	2

5. Month over month revenue growth of a restaurant

1

Restaurant Performance Analysis

This query focuses on analyzing the month-over-month revenue growth of a specific restaurant. This metric provides insights into the restaurant's financial performance and its ability to attract and retain customers.

2

Calculating Revenue Growth

To calculate month-over-month revenue growth, you would need to aggregate revenue data for the restaurant by month and then calculate the percentage change in revenue from one month to the next. This analysis would reveal the trends in revenue growth and highlight any significant fluctuations.

SQL QUERY

```sql
WITH monthly_revenue AS (
    SELECT
        r_id,
        DATE_TRUNC('month', date) AS month,
        SUM(amount) AS total_revenue
    FROM
        orders
    GROUP BY
        r_id, DATE_TRUNC('month', date)
```

```sql
revenue_with_growth AS (
    SELECT
        r_id,
        month,
        total_revenue,
        LAG(total_revenue) OVER (PARTITION BY r_id ORDER BY month) AS previous_revenue,
        CASE
            WHEN LAG(total_revenue) OVER (PARTITION BY r_id ORDER BY month) IS NOT NULL THEN
                ROUND((total_revenue - LAG(total_revenue) OVER (PARTITION BY r_id ORDER BY month)) * 100.0
                / LAG(total_revenue) OVER (PARTITION BY r_id ORDER BY month), 2)
            ELSE
                NULL
        END AS revenue_growth_percentage
    FROM
        monthly_revenue
)
```

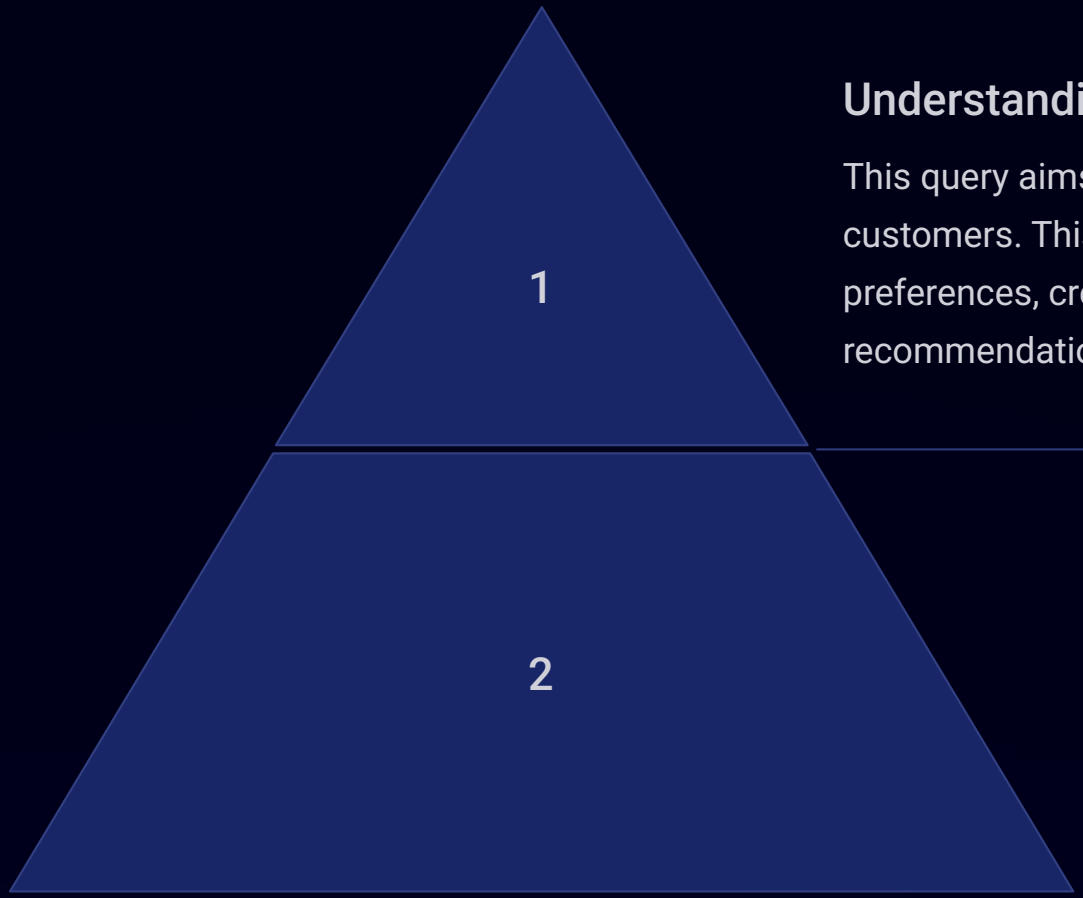
```sql
SELECT
    r.r_name AS restaurant_name,
    rwg.month,
    rwg.total_revenue,
    rwg.previous_revenue,S
    rwg.revenue_growth_percentage
FROM
    revenue_with_growth rwg
JOIN
    restaurants r ON rwg.r_id = r.r_id
ORDER BY
    r.r_name, rwg.month;
```

Data Output | Messages | Notifications

Showing rows: 1 to 13 | Page No: 1

	restaurant_name character varying (100)	month timestamp with time zone	total_revenue numeric	previous_revenue numeric	revenue_growth_percentage numeric
1	box8	2022-06-01 00:00:00+05:30	480.00	[null]	[null]
2	box8	2022-07-01 00:00:00+05:30	460.00	480.00	-4.17
3	China Town	2022-06-01 00:00:00+05:30	400.00	[null]	[null]
4	China Town	2022-07-01 00:00:00+05:30	1050.00	400.00	162.50
5	dominos	2022-05-01 00:00:00+05:30	1000.00	[null]	[null]
6	dominos	2022-06-01 00:00:00+05:30	950.00	1000.00	-5.00
7	dominos	2022-07-01 00:00:00+05:30	1100.00	950.00	15.79
8	Dosa Plaza	2022-05-01 00:00:00+05:30	780.00	[null]	[null]
9	Dosa Plaza	2022-06-01 00:00:00+05:30	400.00	780.00	-48.72
10	Dosa Plaza	2022-07-01 00:00:00+05:30	300.00	400.00	-25.00
11	kfc	2022-05-01 00:00:00+05:30	645.00	[null]	[null]
12	kfc	2022-06-01 00:00:00+05:30	990.00	645.00	53.49
13	kfc	2022-07-01 00:00:00+05:30	1935.00	990.00	95.45

6.Most Paired Products



Understanding Customer Preferences

This query aims to identify the most frequently paired products ordered by customers. This information can be valuable for understanding customer preferences, creating targeted promotions, and optimizing product recommendations.

Analyzing Order Data

To identify paired products, you would need to analyze order history data. You would need to group orders by customer and identify the combinations of food items ordered together. The combinations with the highest frequency would be considered the most paired products.

SQL QUERY

```sql
WITH product_pairs AS (
    SELECT
        od1.f_id AS product_1,
        od2.f_id AS product_2,
        COUNT(*) AS pair_count
    FROM
        order_details od1
    JOIN
        order_details od2
    ON
        od1.order_id = od2.order_id
        AND od1.f_id < od2.f_id -- Avoid self-joins and duplicate pairs
    GROUP BY
        od1.f_id, od2.f_id
),
```

```sql
most_paired_products AS (
    SELECT
        p1.f_name AS product_1_name,
        p2.f_name AS product_2_name,
        pp.pair_count
    FROM
        product_pairs pp
    JOIN
        food p1 ON pp.product_1 = p1.f_id
    JOIN
        food p2 ON pp.product_2 = p2.f_id
    ORDER BY
        pp.pair_count DESC
    LIMIT 10
)
```

```sql
SELECT
    product_1_name,
    product_2_name,
    pair_count
FROM
    most_paired_products;
```

Data Output | Messages | Notifications

	product_1_name character varying (100)	product_2_name character varying (100)	pair_count bigint
1	Choco Lava cake	Chicken Wings	5
2	Schezwan Noodles	Veg Manchurian	4
3	Non-veg Pizza	Choco Lava cake	4
4	Choco Lava cake	Rice Meal	3
5	Chicken Wings	Chicken Popcorn	3
6	Choco Lava cake	Chicken Popcorn	3
7	Masala Dosa	Rava Idli	3
8	Rice Meal	Veg Manchurian	1
9	Veg Pizza	Choco Lava cake	1
10	Choco Lava cake	Roti meal	1

Analyzing Customer Behavior

1

Order Frequency

Analyzing order frequency can reveal patterns in customer behavior, such as peak ordering times, days of the week, and seasonal trends. This information can be used to optimize staffing, inventory management, and marketing campaigns.

2

Delivery Time

Analyzing delivery time can provide insights into the efficiency of the delivery process and identify areas for improvement. This information can be used to optimize delivery routes, manage delivery personnel, and ensure timely delivery to customers.

3

Customer Satisfaction

Analyzing customer satisfaction ratings can provide valuable feedback on the overall customer experience. This information can be used to identify areas for improvement, address customer concerns, and enhance the overall customer journey.