SQL Project Report

ONLINE FOOD DELIVERY

Advance Level

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WHAT THE PROJECT IS ABOUT?

The primary objective of this project is to analyze the provided online food delivery dataset using SQL queries to extract meaningful insights. It aims to identify top revenue generating restaurants, popular food items, expensive food items, affordable dishes and much more.

The insights gained can inform strategic business decisions, such as optimizing marketing campaigns and improving operational efficiency.

PROBLEM STATEMENTS

Top 3 Revenue-Generating Restaurants

Customers Who Ordered From More Than 3 Restaurants

Top 5 Most Expensive Menu Items

Restaurant Size Category

Top 3 most frequently ordered food items

Customer Order Count

Conditional Count of High & Low Value Orders

Top 5 Restaurants with the Cheapest Menu Item

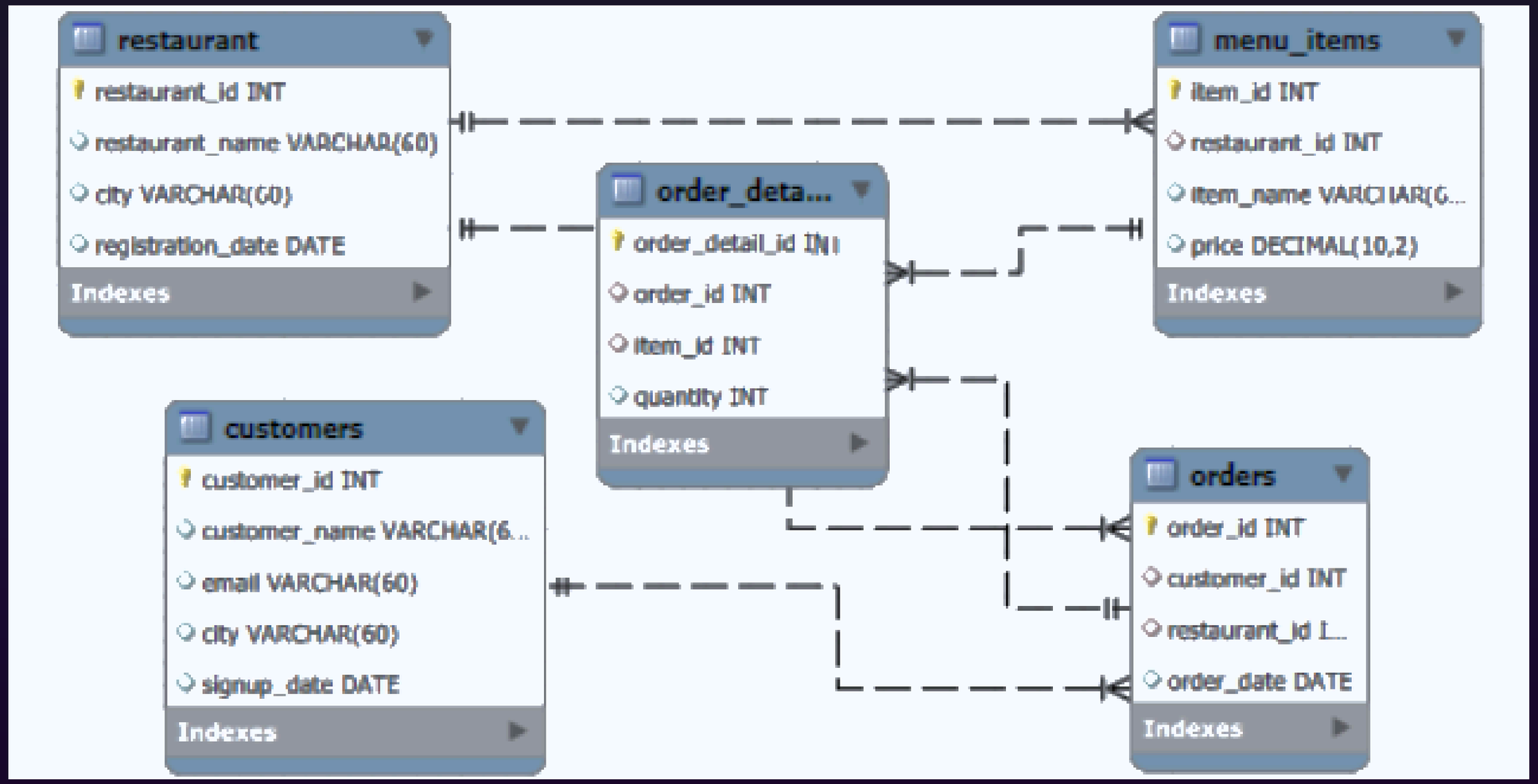
City wise customer spending

Reward Tier to customers Based on Number of Orders Placed

DATASET DESCRIPTION

Table name	Description
customers	customer_id, customer_name, email, city, signup_date
restaurant	restaurant_id, restaurant_name, city, registration_date
menu_items	item_id, restaurant_id, item_name , price
orders	order_id, customer_id, restaurant_id, order_date
order_details	order_detail_id , order_id, item_id , quantity

ER DIAGRAM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restaurant_id INT
restaurant_name VARCHAR(60)
city VARCHAR(60)
registration_date DATE
Indexes
menu_items
item_id INT
restaurant_id INT
price DECIMAL(10,2)
Indexes
order_deta...
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item_id INT
quantity INT
Indexes
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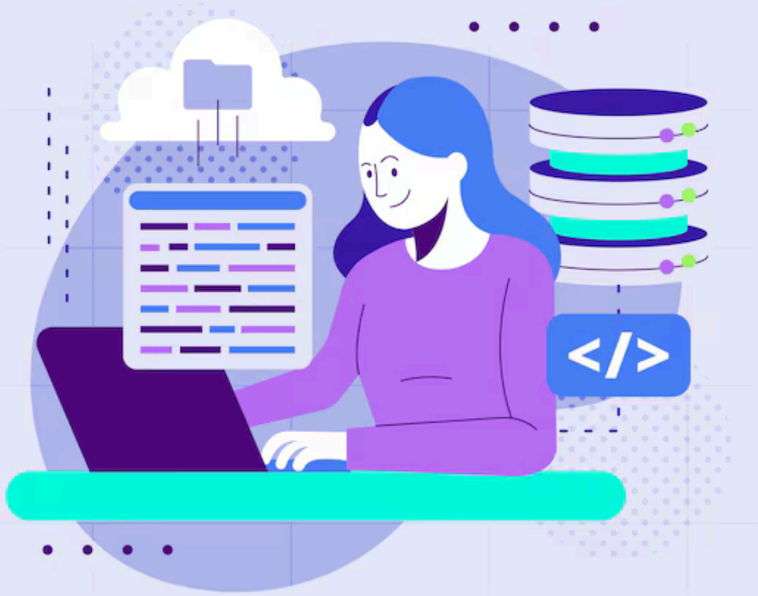
Indexes



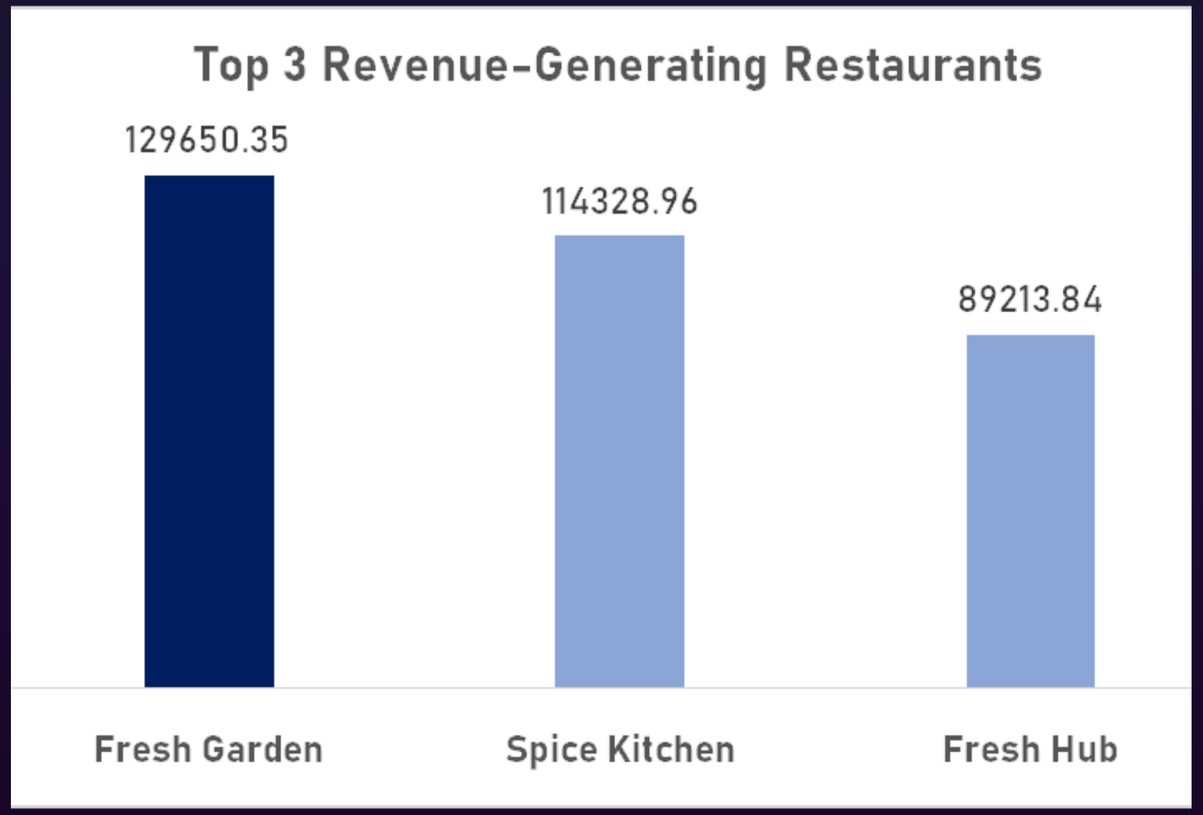
SQL QUERIES, VISUALIZATION & INSIGHTS

Q1. Top 3 Revenue-Generating Restaurants

```sql
with rest_revenue as
(select mi.restaurant_id,
    sum(mi.price * od.quantity) as total_revenue,
    rank() over(order by sum(mi.price * od.quantity) desc) as revenue_rank
    from menu_items mi
    join order_details od on od.item_id = mi.item_id
    group by mi.restaurant_id)

select r.restaurant_name,
    rr.total_revenue,
    rr.revenue_rank
from rest_revenue rr
join restaurant r on r.restaurant_id = rr.restaurant_id
order by rr.total_revenue desc
limit 3
;
```

restaurant_name	total_revenue	revenue_rank
Fresh Garden	129650.35	1
Spice Kitchen	114328.96	2
Fresh Hub	89213.84	3



Fresh Garden leads revenue at ₹129K, followed by Spice Kitchen and Fresh Hub.

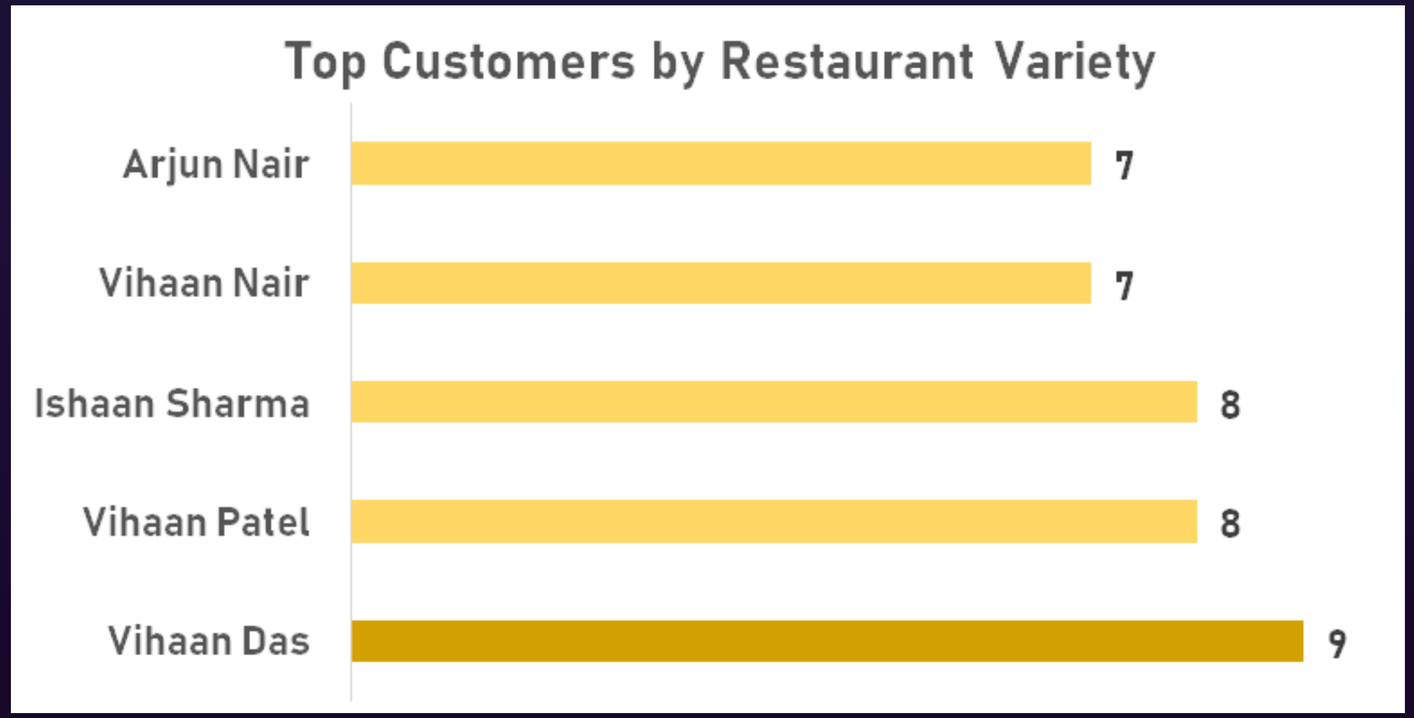
These three restaurants drive the bulk of sales and are key focus areas for growth.

Business can focus on strengthening relationships with these restaurants (exclusive deals, promotions, better commissions).

Q2. Top 5 Customers Who Have Ordered From Over 3 Restaurants

```sql
with cust_rest_count as
(select customer_id,
    count(distinct restaurant_id) as rest_count
    from orders
    group by customer_id
)
select c.customer_name, cr.rest_count
    from cust_rest_count cr
    join customers c on c.customer_id = cr.customer_id
    where cr.rest_count > 3
    order by cr.rest_count desc
    limit 5;
```

customer_name	rest_count
Vihaan Das	9
Vihaan Patel	8
Ishaan Sharma	8
Vihaan Nair	7
Arjun Nair	7



Vihaan Das leads with 9 restaurants, showing strong curiosity for variety.

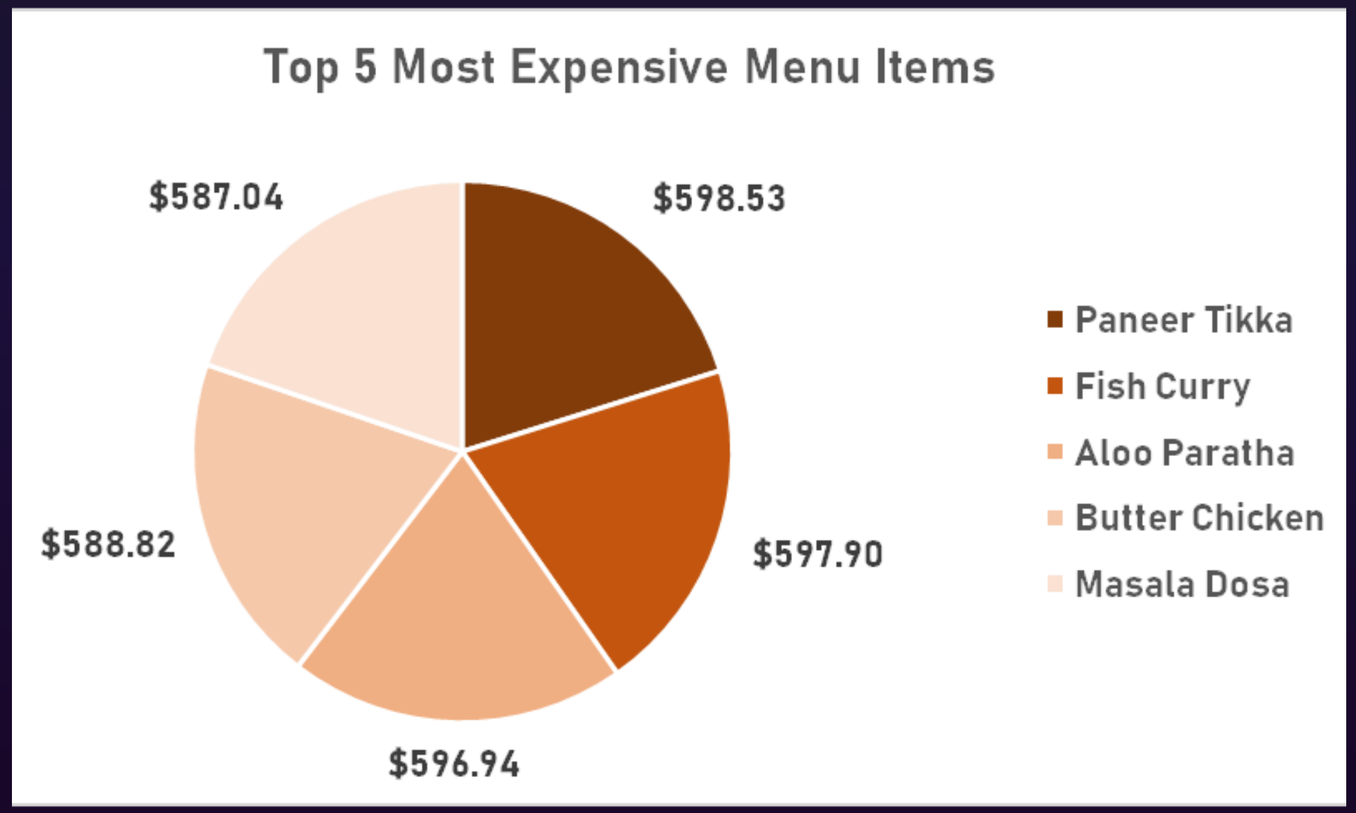
These customers are different from loyal ones — they like to try new places instead of repeating the same restaurant.

These customers can be targeted with promotions for new restaurants or limited-time menus.

Q3. Top 5 Most Expensive Menu Items

```sql
with RankedMenu as (
    select
        item_name,
        price,
        ROW_NUMBER() over (order by price desc) as rn
    from menu_items
)
select item_name, price
from RankedMenu
where rn <= 5;
```

item_name	price
Paneer Tikka	598.53
Fish Curry	597.90
Aloo Paratha	596.94
Butter Chicken	588.82
Masala Dosa	587.04



Paneer Tikka is the priciest item at ₹598.53, closely followed by Fish Curry and Aloo Paratha.

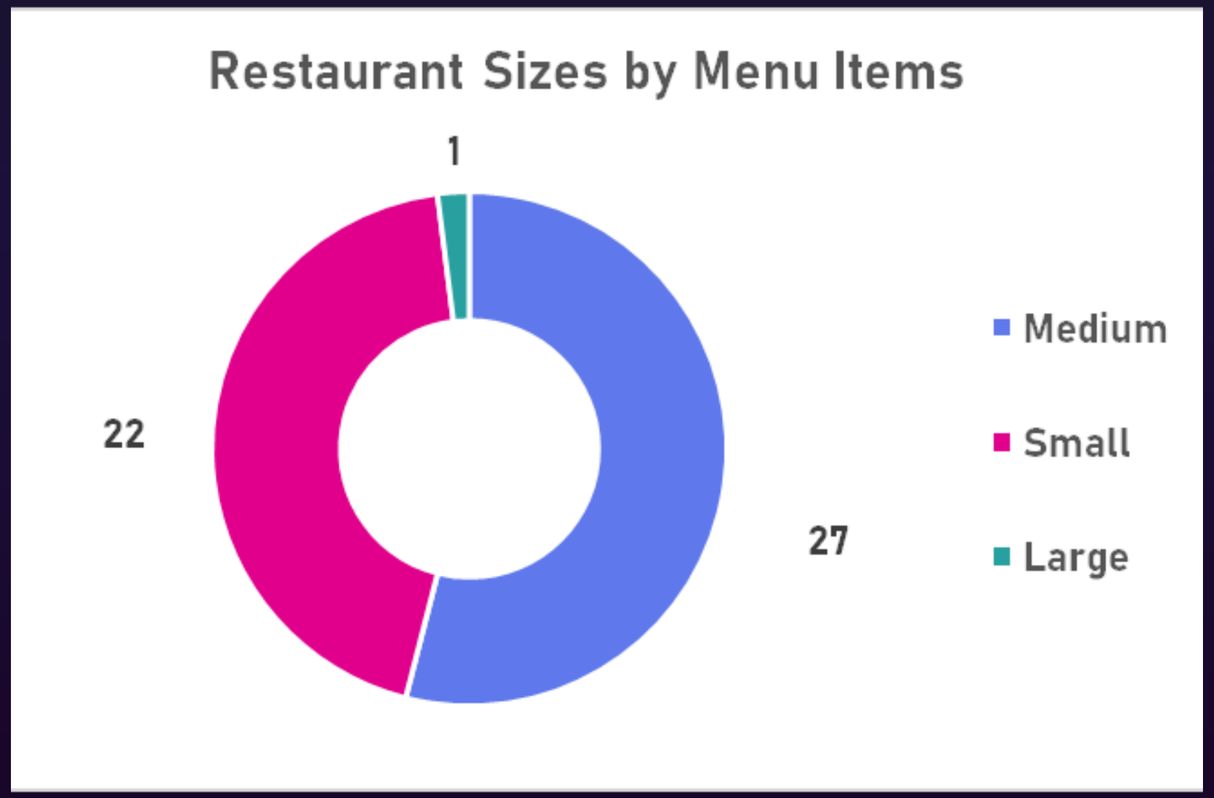
All top 5 items are priced around ₹587–₹599, showing a narrow high-price band for premium items.

These items can be promoted to high-spending customers or highlighted in special combos to boost revenue.

Q4. Restaurant Size Category – Based on the number of menu items, classify restaurants as Small (<5 items), Medium (5–10 items), or Large (>10 items), and then count the number of restaurants in each category

```sql
with categorized as (
    select r.restaurant_id,
           r.restaurant_name,
           count(mi.item_id) as item_count,
           case
               when count(mi.item_id) > 10 then 'Large'
               when count(mi.item_id) between 5 and 10 then 'Medium'
               else 'Small'
           end as size_category
    from restaurant r
    join menu_items mi on mi.restaurant_id = r.restaurant_id
    group by r.restaurant_id, r.restaurant_name
)
select size_category, count(*) as restaurant_count
from categorized
group by size_category
order by restaurant_count desc;
```

size_category	restaurant_count
Medium	27
Small	22
Large	1



Medium restaurants dominate (27) - They offer enough variety to attract customers.

Small restaurants (22) - They focus on signature dishes.

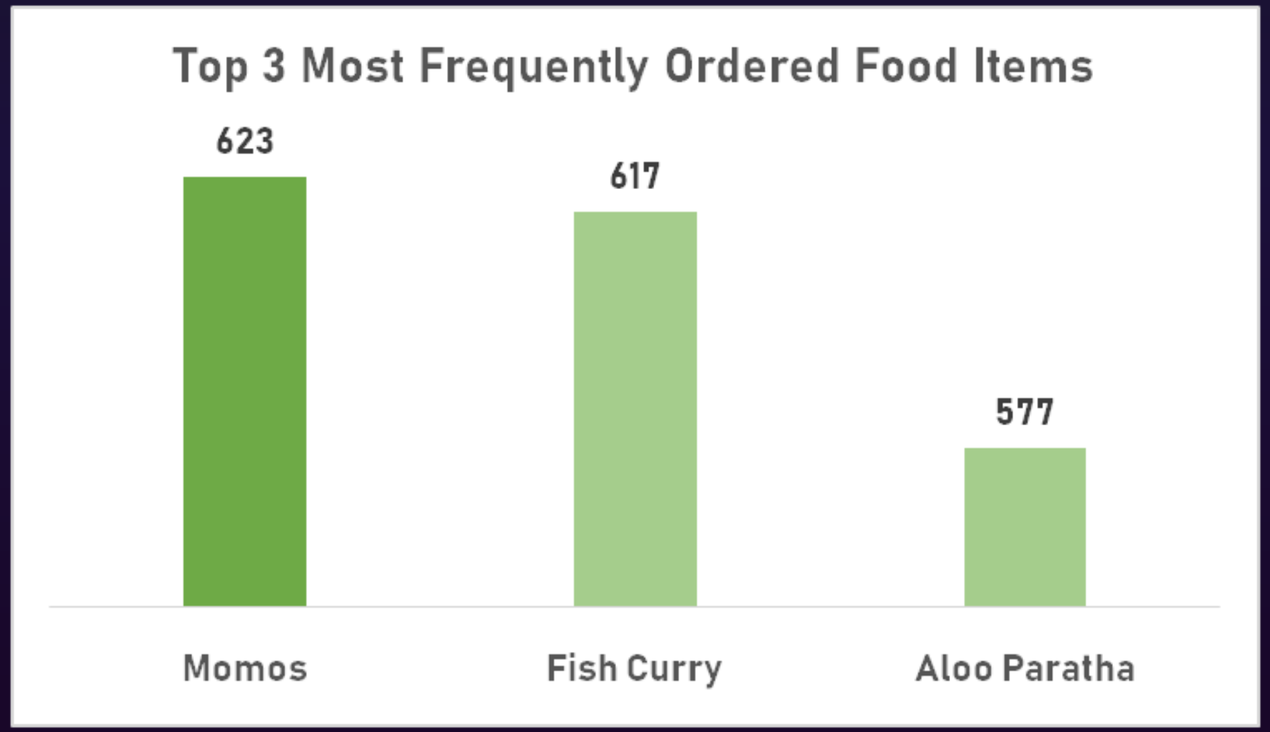
Large restaurant (1) - Offering many items may bring variety, but it risks higher costs and wastage.

New entrants should aim for a Medium-sized menu.

Q5. Top 3 most frequently ordered food items

```sql
select
    mi.item_name,
    sum(od.quantity) as most_freq_ordered
from menu_items mi
join order_details od on od.item_id = mi.item_id
group by mi.item_name
order by most_freq_ordered desc
limit 3
;
```

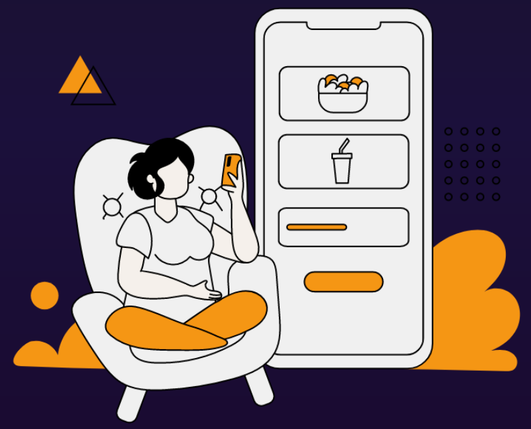
item_name	most_freq_ordered
Momos	623
Fish Curry	617
Aloo Paratha	577



Momos lead with 623 orders, closely followed by Fish Curry (617) and Aloo Paratha (577).

The narrow gap suggests all three items are equally popular, making them strong candidates for combo deals or highlighting in restaurant menus.

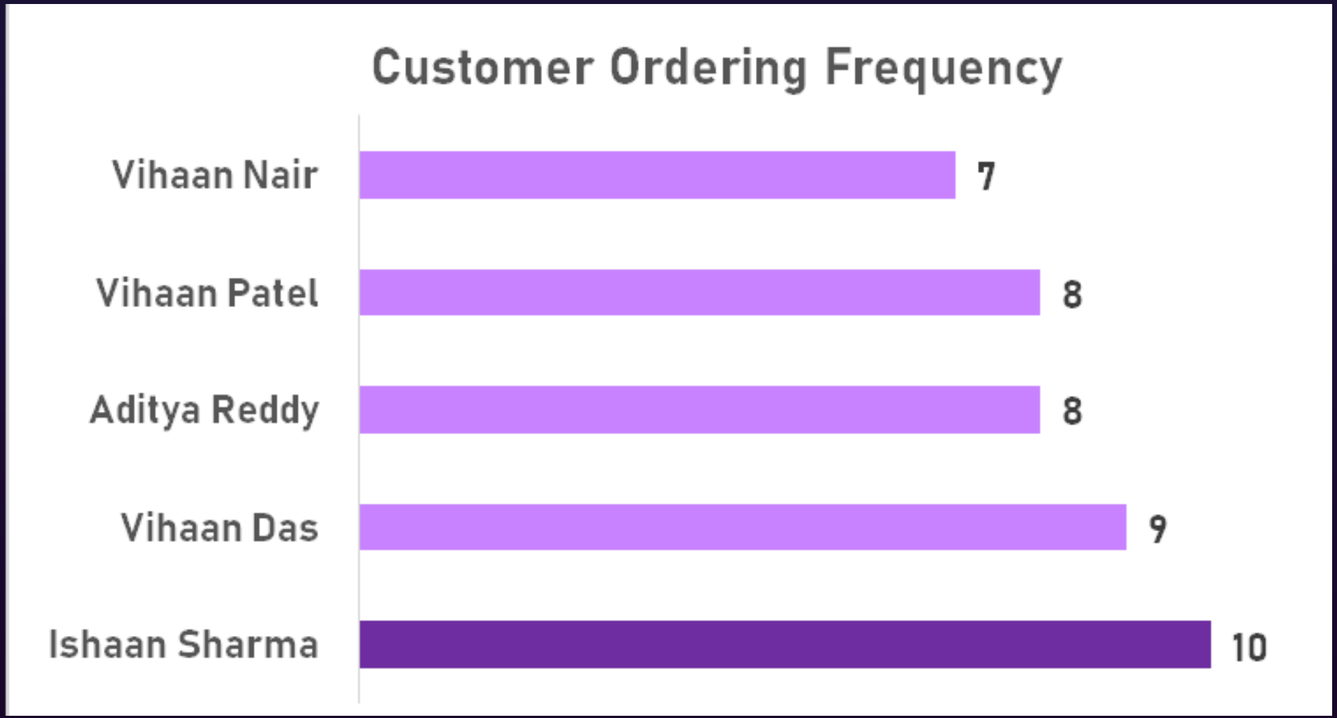
Q6.Customer Order Count – Find each customer's total number of orders (Top 5 customers)



```sql
create temporary table temp_customer_order_count as
select c.customer_id,
        c.customer_name,
        count(o.order_id) as total_orders
from customers c
join orders o on o.customer_id = c.customer_id
group by c.customer_id
;

select * from temp_customer_order_count
order by total_orders desc
limit 5;
```

customer_id	customer_name	total_orders
336	Ishaan Sharma	10
28	Vihaan Das	9
176	Vihaan Patel	8
154	Aditya Reddy	8
7	Vihaan Nair	7



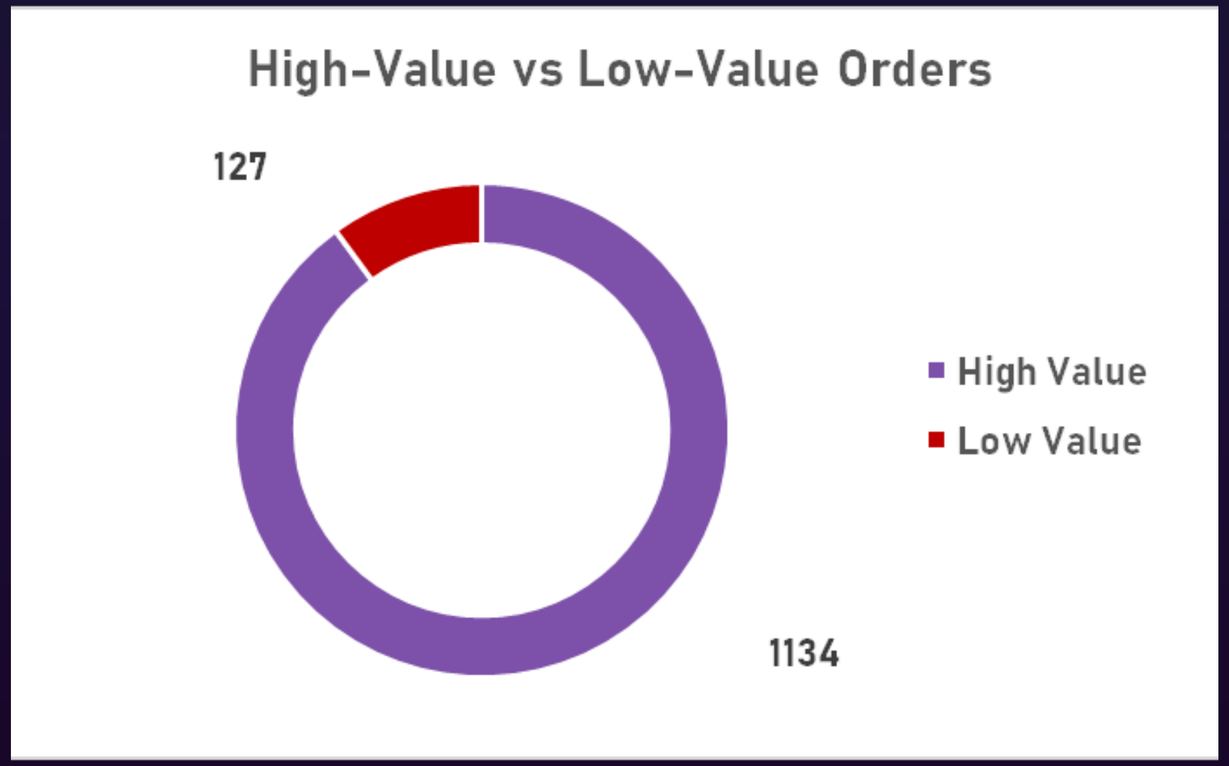
Ishaan Sharma is the most active customer with 10 orders, followed closely by Vihaan Das with 9.

Focused promotions or discounts could be targeted at these top customers to retain them and increase order frequency.

Q7.Count of High-Value (above ₹500) and Low-Value (below ₹500) Orders by Total Order Value

```sql
select
    order_category,
      COUNT(*) as total_orders
    from(
select
  od.order_id,
  case
   when SUM(od.quantity * mi.price) > 500 then 'High Value'
    else 'Low Value'
  end as order_category
from order_details od
join menu_items mi on mi.item_id = od.item_id
group by od.order_id
    ) as sub_orders
group by order_category
    ;
```

order_category	total_orders
High Value	1134
Low Value	127



Out of total orders, 1,134 are high-value (₹500+), while only 127 are low-value (<₹500), indicating most customers tend to place larger orders.

Restaurants should give special attention to these customers (like good service, discounts) because they bring in the most money.

Restaurants can try to encourage others to buy a little more (maybe through combo deals or small offers) to increase overall sales.

Q8.Top 5 Restaurants with the Cheapest Menu Item

```sql
select * from (
select
    r.restaurant_name,
    mi.price,
    mi.item_name,
    rank() over(partition by restaurant_name order by price asc) as cheap_item
    from menu_items mi
    join restaurant r on r.restaurant_id = mi.restaurant_id
    ) as temp
where cheap_item = 1
order by price asc
limit 5;
    ;
```

restaurant_name	price	item_name	cheap_item
Little Corner	82.69	Masala Dosa	1
Tasty Bistro	86.42	Paneer Butter Masala	1
Big Diner	87.32	Idli Sambar	1
Happy Grill	88.18	Fish Curry	1
Golden Garden	88.43	Masala Dosa	1

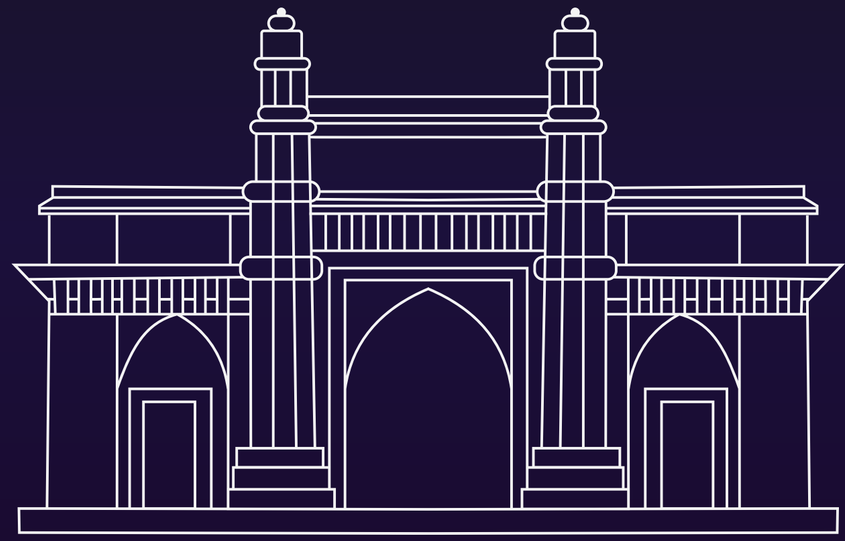
Prices are very close (₹82–₹88). This suggests restaurants are deliberately competing at a low-price segment to attract cost-sensitive customers.

The cheapest items are mostly traditional staples indicating restaurants use familiar dishes as entry points to attract customers, but upsell drinks, sides, or premium items.

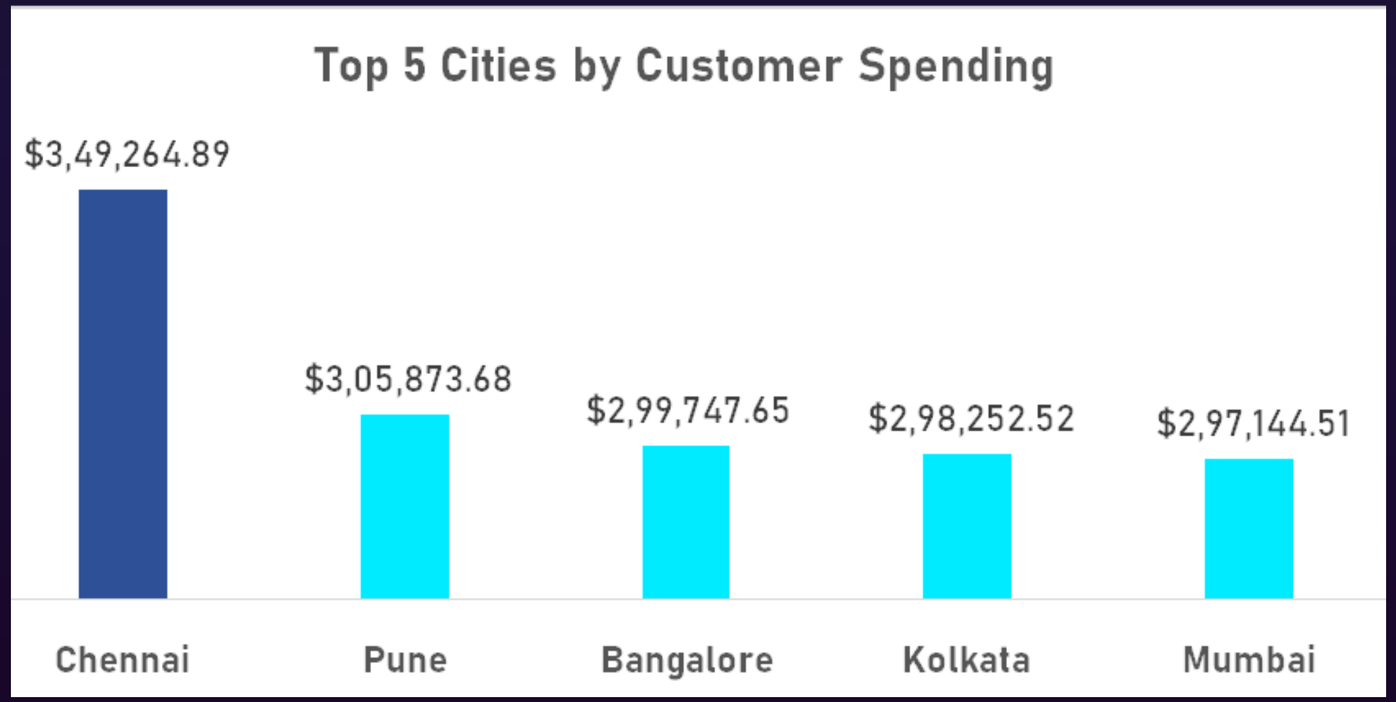
Restaurants with the lowest prices can market themselves as budget-friendly options.

Q9.City wise customer spending-Display each city and the total amount spent by customers from that city.

```sql
create view city_customer_spending as
select c.city,
        -- c.customer_name,
        sum(od.quantity * mi.price) as total_spent
from customers c
join orders o on o.customer_id = c.customer_id
join order_details od on od.order_id = o.order_id
join menu_items mi on mi.item_id = od.item_id
group by c.city
;
-- filtering : top 5 cities
select * from city_customer_spending
order by total_spent desc
limit 5;
```



city	total_spent
Chennai	349264.89
Pune	305873.68
Bangalore	299747.65
Kolkata	298252.52
Mumbai	297144.51



Chennai customers spend the most - Indicates higher purchasing power and strong customer loyalty.

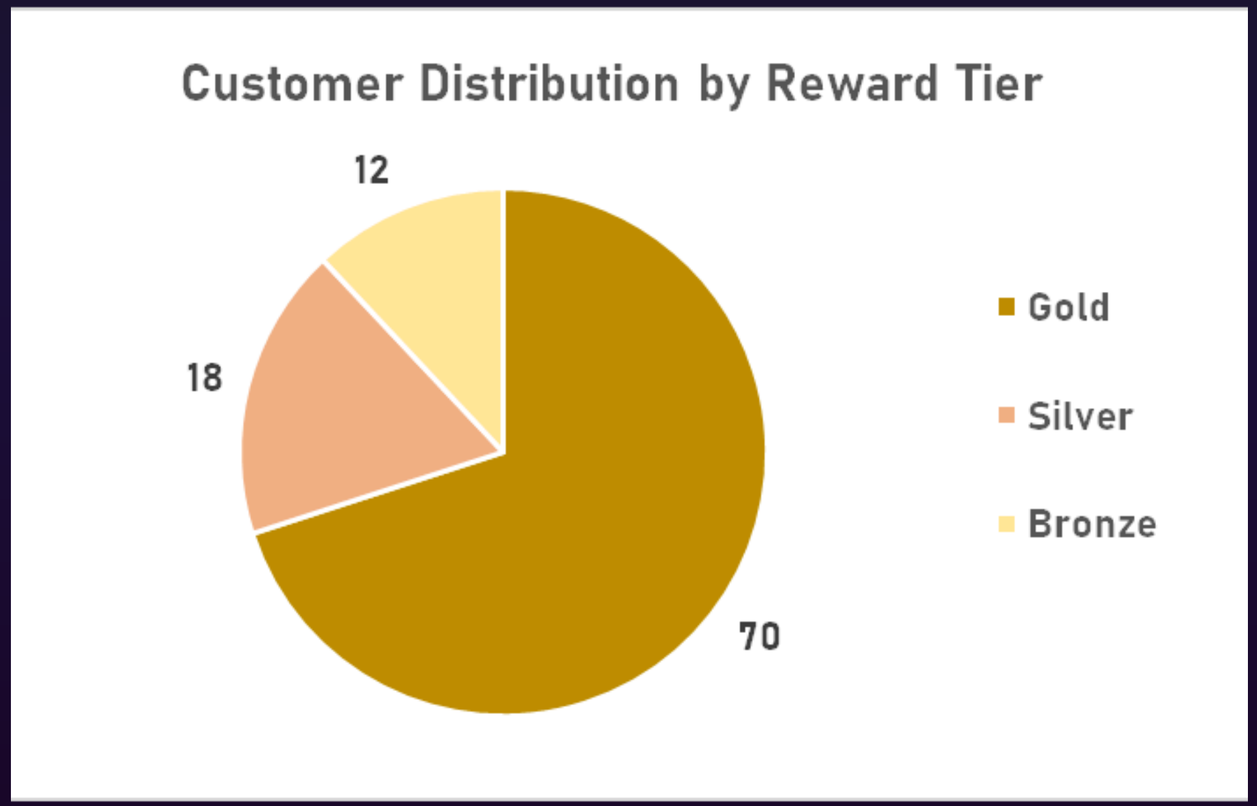
Customers in Chennai, Pune, and metro cities are the biggest spenders, so they are the most valuable customer bases for future offers, rewards program, and premium services.

Need to run local ads/discounts in these top 5 cities as they already bring the most money.

Q10.Customer Reward Tiers by Number of Orders Placed (Gold: ≥10, Silver: 5–9, Bronze: <5) – Count per Category

```sql
with reward_tier as
( select c.customer_name,
    count(distinct o.order_id) as total_orders,
 case
        when count(distinct o.order_id) >= 10 then "Gold"
         when count(distinct o.order_id) between 5 and 9 then "Silver"
         else "Bronze"
    end as reward
from customers c
join orders o on o.customer_id = c.customer_id
group by c.customer_name
order by total_orders desc
)
select rt.reward,
        count(*) as num_customers
from reward_tier rt
group by  rt.reward
order by num_customers desc
;
```

reward	num_customers
Gold	70
Silver	18
Bronze	12



Gold (70 customers) - These customers are the most loyal and they should be kept engaged with exclusive rewards, early access offers, and VIP treatment.

Silver (18 customers) - Mid-tier customers are consistent buyers. With the right offers or promotions, many could be upgraded to Gold.

Bronze (12 customers) - They've made fewer than 5 orders, meaning weak loyalty.
Running personalized offers, or first-order discounts might increase frequency.

CONCLUSION

This report explores customer, restaurant, and city-level data from the food delivery platform. It highlights:

🍽️ Top-selling food items – Shows that dishes like Momos, Fish Curry, and Hakka Noodles are customer favorites.
🏆 High-performing restaurants – Identifies the top 5 restaurants bringing in the most revenue.
💸 Top 5 restaurants with the cheapest menu item – Shows where customers can get budget-friendly options.
🏙️ City-wise customer spending – Reveals that cities like Chennai, Pune, and Bangalore generate the highest revenue.
🍴 Customers ordering from multiple restaurants – Finds customers who explore variety, giving opportunities for cross-selling.

🚀 Business Impact - These findings can help :

📢 Focus promotions on popular items and high-spending cities
😊 Reward loyal Gold customers while engaging Silver and Bronze customers to increase orders
🤝 Strengthen partnerships with high-revenue restaurants and support low-performing ones
📊 Use insights on variety-seeking customers to design personalized deals

THANK YOU

Presented By : Liza Deka