zomato

Food Delivery Platform Data Analysis Project

A SQL-based Business Intelligence Exploration

ARUNPRASATH J P

About Zomato

- Zomato is an Indian multinational restaurant aggregator and food delivery company.
- Operates across multiple countries offering services like food delivery, restaurant discovery, and online ordering.
- It connects customers, restaurants, and delivery riders via a digital platform.

Zomato Business Model

Customers – Order food via the app or website.

Restaurants – Partner with Zomato to reach more customers.

Riders – Handle last-mile delivery.

Zomato Platform – Acts as the enabler.

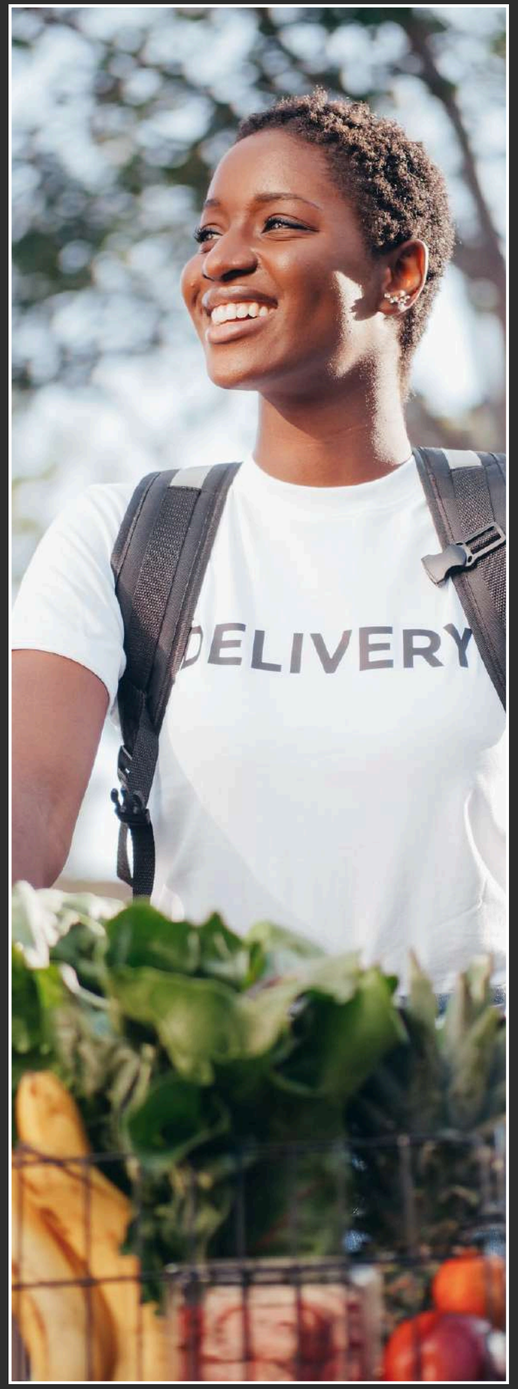
Project Objective

To analyze and generate insights from Zomato's food delivery data using MySQL to assist business decisions related to:

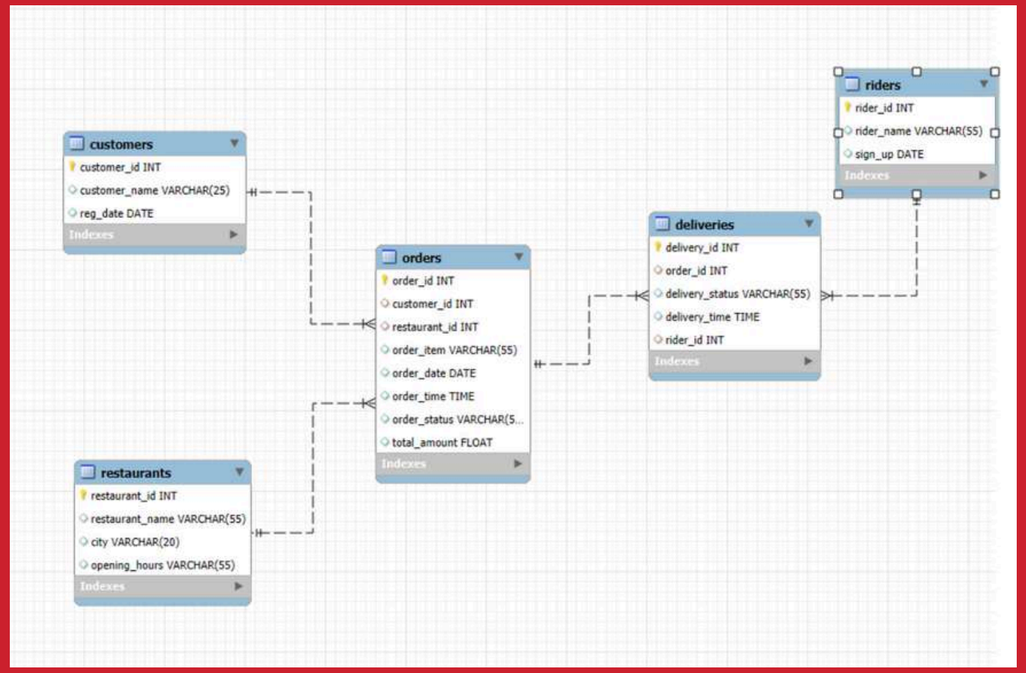
- Customer behavior
- Restaurant Performance
- Rider Efficiency
- Revenue Growth

Tools used

- **SQL -** Data Modeling, EDA, Data Analysis.
- **Power BI -** Data Visualization



Dataset Overview



Tables Used

- **Customers :** customer info & registration date
- **Restaurants :** restaurant details
- **Orders :** order info, date, items, status, total amount
- **Riders :** delivery personnel
- **Deliveries :** delivery status and time

Types of Data Analysis Performed

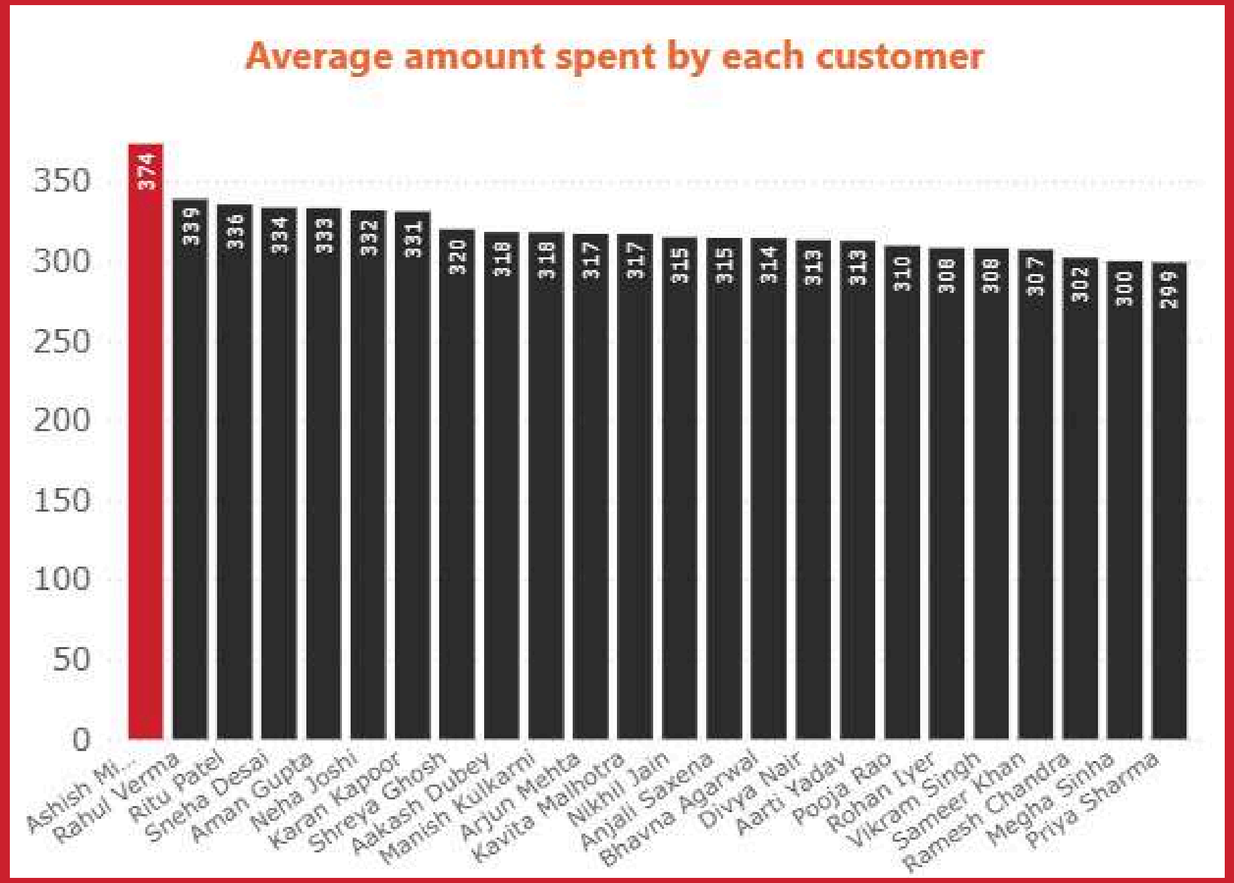
- Customer Behaviour and Insights
- Orders and Sales Analysis
- Restaurant Performance
- Rider Efficiency & Performance
- Revenue Growth Analysis

Key Insights

- **Time Slots -** Identified popular time slots during which the most orders are placed.
- **Cancellation Rate -** Compared the order cancellation rate for each restaurant.
- **Growth Ratio -** Calculated each restaurant's growth ratio based on the total number of delivered orders
- **Rider Rating -** Given ratings for riders based on their delivery time.

Calculate the average amount spent by each customer.

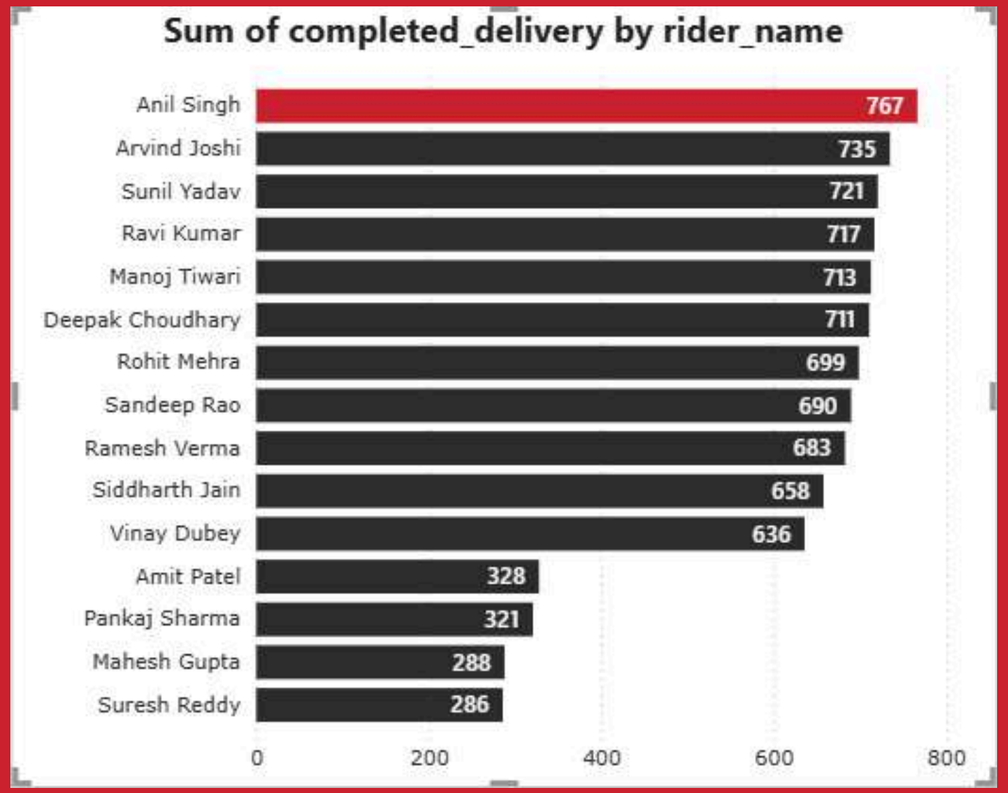
customer_name	avg_amnt
Ashish Mishra	373.5
Rahul Verma	339.06
Ritu Patel	335.66
Sneha Desai	333.58
Aman Gupta	333.32
Neha Joshi	331.82
Karan Kapoor	331.01
Shreya Ghosh	320.18
Aakash Dubey	318.28
Manish Kulkarni	318.11
Arjun Mehta	317.16
Kavita Malhotra	317.08
Nikhil Jain	314.89
Anjali Saxena	314.5
Bhavna Agarwal	314.4
Divya Nair	313.41
Aarti Yadav	312.94
Pooja Rao	309.72
Rohan Iyer	308.22
Vikram Singh	307.99
Sameer Khan	307.28
Ramesh Chandra	302.25
Megha Sinha	300
Priya Sharma	299.12



Ashish Mishra spent the average amount among all customers, which is ₹374 and Priya Sharma has spend less amount which is ₹299.

Find how many deliveries each rider has completed.

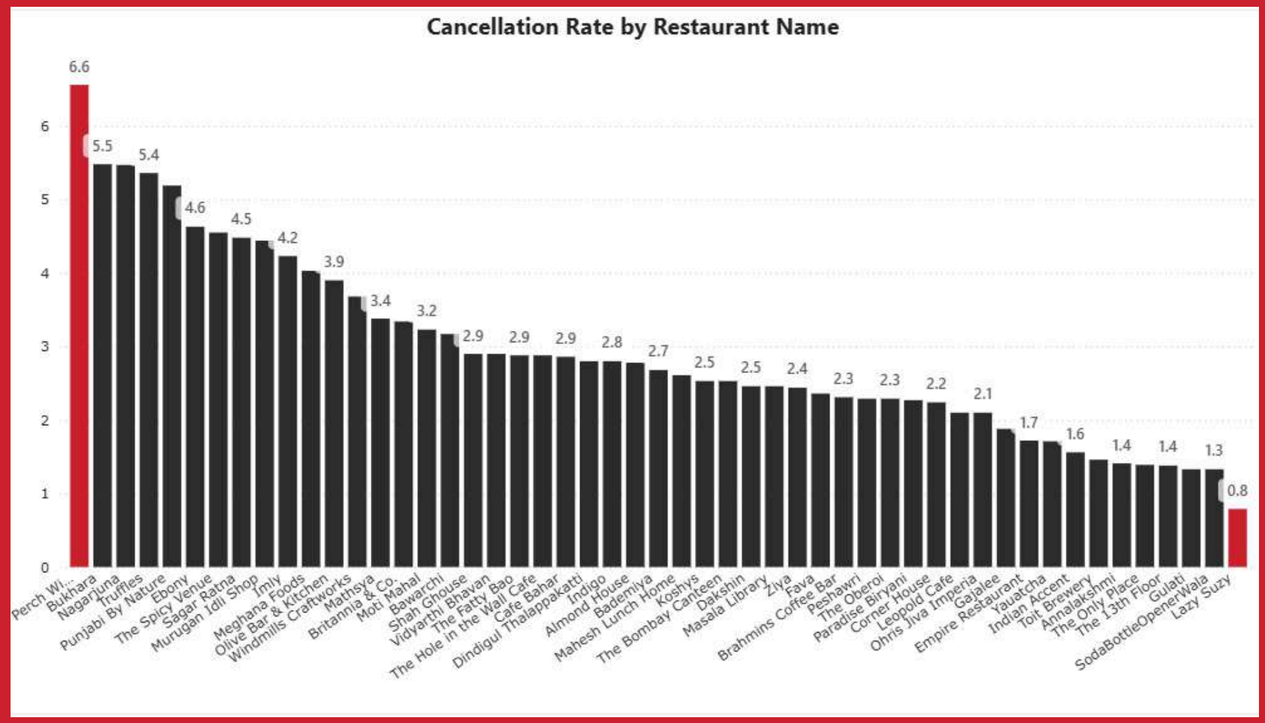
rider_id	rider_name	completed_delivery
1	Ravi Kumar	717
2	Anil Singh	767
3	Sunil Yadav	721
4	Ramesh Verma	683
5	Amit Patel	328
6	Suresh Reddy	286
7	Mahesh Gupta	288
8	Pankaj Sharma	321
9	Rohit Mehra	699
10	Arvind Joshi	735
11	Sandeep Rao	690
12	Deepak Chou...	711
13	Manoj Tiwari	713
14	Siddharth Jain	658
15	Vinay Dubey	636



Anil Singh completed more rides among all customers, which is 767 and Suresh Reddy has low rides which is 286.

Calculate and compare the order cancellation rate for each restaurant between the current year and the previous year.

restaurant_id	restaurant_name	cancellation_rate
21	Perch Wine & Coffee Bar	6.56
13	Bukhara	5.48
43	Nagarjuna	5.47
33	Truffles	5.36
27	Punjabi By Nature	5.19
40	Ebony	4.63
52	The Spicy Venue	4.55
26	Sagar Ratna	4.48
55	Murugan Idli Shop	4.44
25	Imly	4.23
41	Meghana Foods	4.03
24	Olive Bar & Kitchen	3.90
38	Windmills Craftworks	3.68
59	Mathsya	3.38
9	Britannia & Co.	3.34
14	Moti Mahal	3.23
49	Bawarchi	3.17
31	Vidyarthi Bhavan	2.90
50	Shah Ghouse	2.90
37	The Fatty Bao	2.88
44	The Hole in the Wall Cafe	2.88
53	Cafe Bahar	2.86
10	Indigo	2.80
56	Dindigul Thalappakatti	2.80
54	Almond House	2.78



Perch Wine & Coffee Bar has high cancellation rate of 6.56% and
Lazy Suzy has low cancellation rate of 0.8% between the current and previous year.

Determine each rider's average delivery time.

rider_id	rider_name	avg_delivery_time
1	Ravi Kumar	51.78 mins
2	Anil Singh	51.65 mins
4	Ramesh Verma	50.33 mins
3	Sunil Yadav	50.18 mins
11	Sandeep Rao	36.11 mins
10	Arvind Joshi	35.13 mins
13	Manoj Tiwari	35.06 mins
12	Deepak Choudhary	34.98 mins
9	Rohit Mehra	34.96 mins
15	Vinay Dubey	34.92 mins
14	Siddharth Jain	34.63 mins
6	Suresh Reddy	33.81 mins
5	Amit Patel	33.80 mins
8	Pankaj Sharma	32.98 mins
7	Mahesh Gupta	32.43 mins

rider_name	avg_delivery_time
Mahesh Gupta	32.43 mins
Pankaj Sharma	32.98 mins
Amit Patel	33.80 mins
Suresh Reddy	33.81 mins
Siddharth Jain	34.63 mins
Vinay Dubey	34.92 mins
Rohit Mehra	34.96 mins
Deepak Choudhary	34.98 mins
Manoj Tiwari	35.06 mins
Arvind Joshi	35.13 mins
Sandeep Rao	36.11 mins
Sunil Yadav	50.18 mins
Ramesh Verma	50.33 mins
Anil Singh	51.65 mins
Ravi Kumar	51.78 mins

Ravi Kumar has high average delivery time of 51 mins among all customers and Mahesh Gupta has low delivery time of 32 mins.

Calculate each restaurant's growth ratio based on the total number of delivered orders since its joining.

restaurant_id	restaurant_name	mnth	total_orders	previous_month_order	growth_rate
1	The Bombay Canteen	01/2023	35	NULL	NULL
1	The Bombay Canteen	02/2023	27	35	-22.86
1	The Bombay Canteen	03/2023	42	27	55.56
1	The Bombay Canteen	04/2023	40	42	-4.76
1	The Bombay Canteen	05/2023	43	40	7.50
1	The Bombay Canteen	06/2023	31	43	-27.91
1	The Bombay Canteen	07/2023	41	31	32.26
1	The Bombay Canteen	08/2023	30	41	-26.83
1	The Bombay Canteen	09/2023	34	30	13.33
1	The Bombay Canteen	10/2023	33	34	-2.94
1	The Bombay Canteen	11/2023	38	33	15.15
1	The Bombay Canteen	12/2023	31	38	-18.42
2	Leopold Cafe	01/2023	35	NULL	NULL
2	Leopold Cafe	01/2024	1	35	-97.14
2	Leopold Cafe	02/2023	39	1	3800.00
2	Leopold Cafe	03/2023	38	39	-2.56
2	Leopold Cafe	04/2023	39	38	2.63
2	Leopold Cafe	05/2023	34	39	-12.82
2	Leopold Cafe	06/2023	37	34	8.82
2	Leopold Cafe	07/2023	32	37	-13.51
2	Leopold Cafe	08/2023	27	32	-15.63
2	Leopold Cafe	09/2023	30	27	11.11
2	Leopold Cafe	10/2023	39	30	30.00
2	Leopold Cafe	11/2023	37	39	-5.13
2	Leopold Cafe	12/2023	48	37	29.73

restaurant_id	restaurant_name	mnth	total_orders	previous_month_order	growthh_rate
1	The Bombay Canteen	01/2023	35		
1	The Bombay Canteen	02/2023	27	35	-22.86%
1	The Bombay Canteen	03/2023	42	27	55.56%
1	The Bombay Canteen	04/2023	40	42	-4.76%
1	The Bombay Canteen	05/2023	43	40	7.50%
1	The Bombay Canteen	06/2023	31	43	-27.91%
1	The Bombay Canteen	07/2023	41	31	32.26%
1	The Bombay Canteen	08/2023	30	41	-26.83%
1	The Bombay Canteen	09/2023	34	30	13.33%
1	The Bombay Canteen	10/2023	33	34	-2.94%
1	The Bombay Canteen	11/2023	38	33	15.15%
1	The Bombay Canteen	12/2023	31	38	-18.42%
2	Leopold Cafe	01/2023	35		
2	Leopold Cafe	01/2024	1	35	-97.14%
2	Leopold Cafe	02/2023	39	1	3800.00%
2	Leopold Cafe	03/2023	38	39	-2.56%
2	Leopold Cafe	04/2023	39	38	2.63%
2	Leopold Cafe	05/2023	34	39	-12.82%

Identify the time slots during which the most orders are placed based on 2-hour intervals.

time_slots	total_order
02:00:00 PM-04:00:00 PM	1188
06:00:00 PM-08:00:00 PM	1136
10:00:00 PM-00:00:00 AM	1123
12:00:00 PM-02:00:00 PM	1115
10:00:00 AM-12:00:00 PM	1107
08:00:00 PM-10:00:00 PM	1089
04:00:00 PM-06:00:00 PM	1080
08:00:00 AM-10:00:00 AM	1076
06:00:00 AM-08:00:00 AM	1074
00:00:00 AM-02:00:00AM	12

Most orders placed based on 2-hour intervals
2 PM to 4 PM

Least orders placed based on 2-hour intervals
12 AM to 2 AM

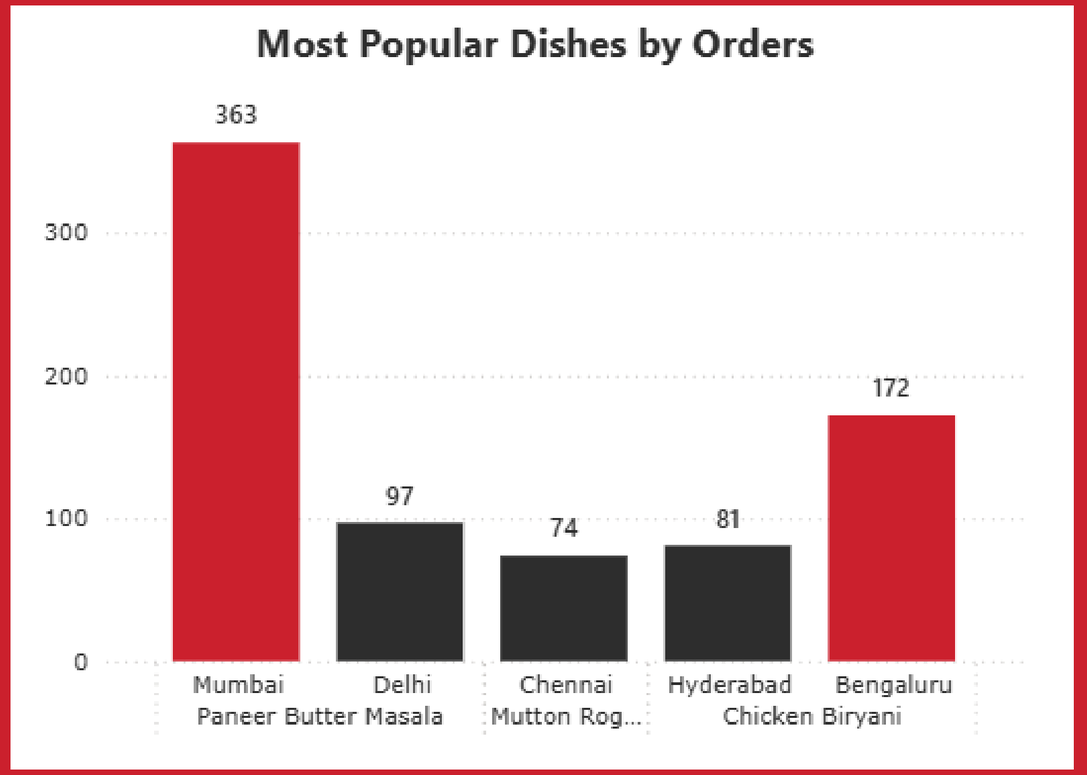
List the customers who have spent more than 100K in total on food orders.

customer_id	customer_name	total_orders
6	Sneha Desai	269197
7	Rahul Verma	262094
5	Aman Gupta	257322
9	Karan Kapoor	244287
8	Neha Joshi	243223
4	Ritu Patel	242681
15	Nikhil Jain	168782
17	Manish Kulkarni	162552
22	Kavita Malhotra	154737
20	Bhavna Agarwal	154368
19	Aakash Dubey	150866
18	Shreya Ghosh	150807
16	Aarti Yadav	146145
21	Ramesh Chandra	143571

Sneha Desai spent more than 269k in total on food orders while Ramesh Chandra spent 143k on food orders.

Identify the most popular dish in each city based on the number of orders.

	city	order_item	numb
▶	Bengaluru	Chicken Biryani	172
	Chennai	Mutton Rogan Josh	74
	Delhi	Paneer Butter Masala	97
	Hyderabad	Chicken Biryani	81
	Mumbai	Paneer Butter Masala	363

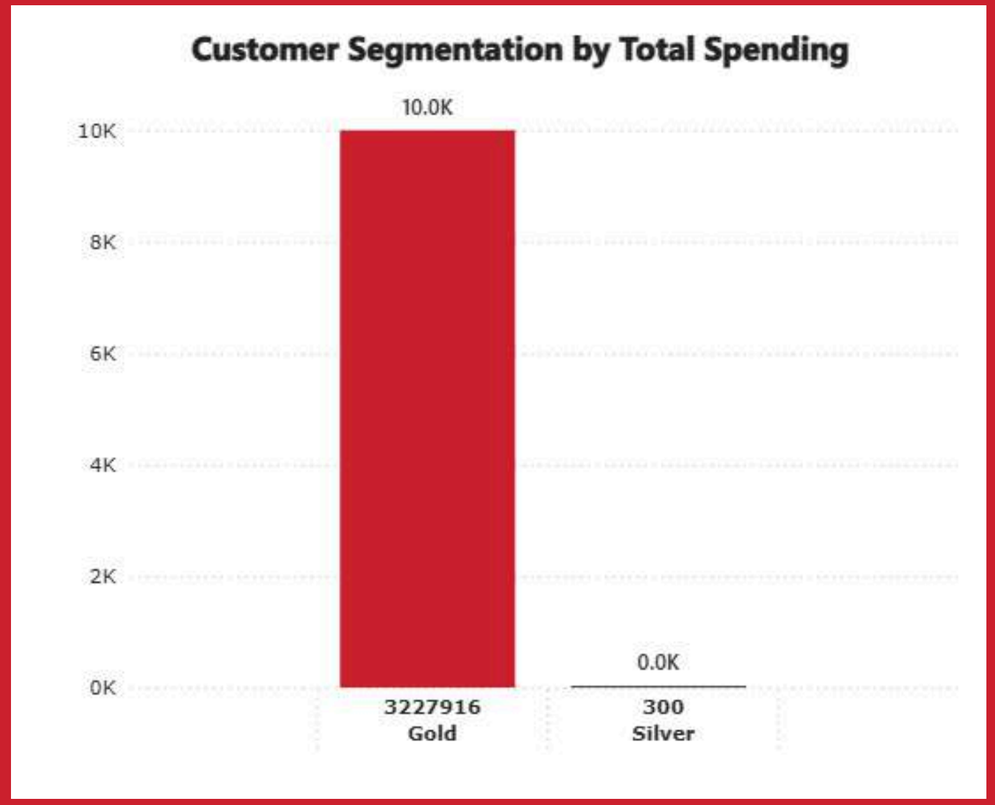


- **Mumbai & Delhi -** Panner Butter Masala
- **Hyderabad & Bengaluru -** Chicken Biryani
- **Chennai -** Mutton Rogan Josh

Segment customers into 'Gold' or 'Silver' groups based on their total spending compared to the average order value (AOV).

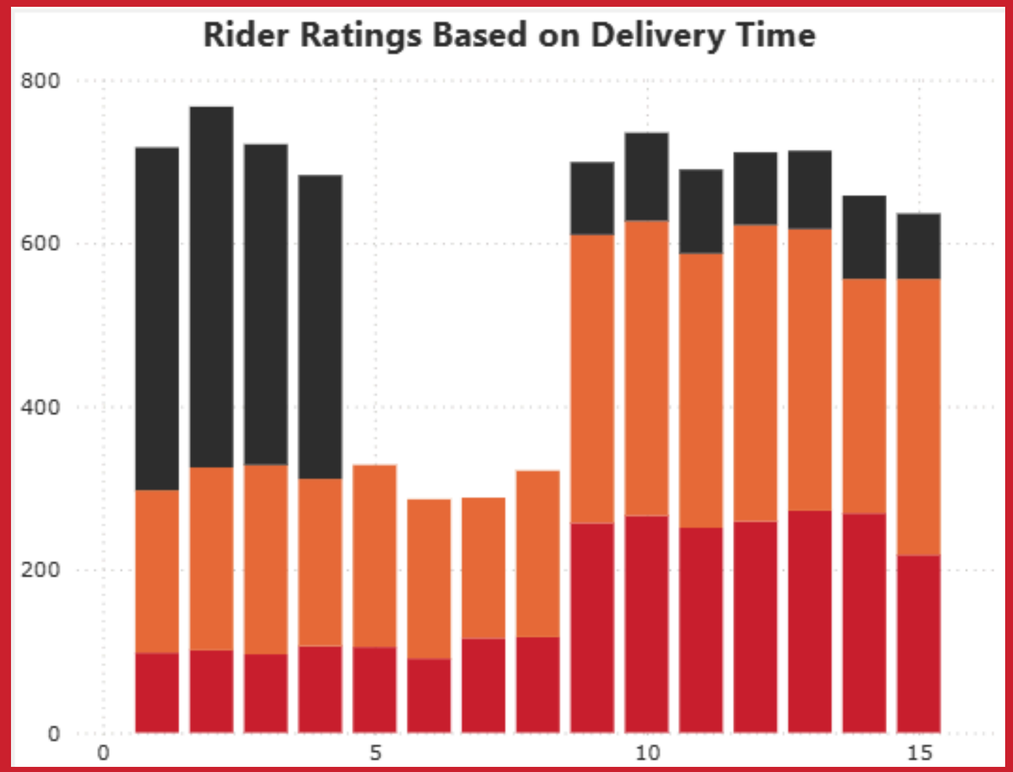
	category	total_revenue	total_orders
▶	Gold	3227916	9999
	Silver	300	1

Out of 10k customers we have only one customer who is in the ‘Siler’ catrgory based on their tota; spending.



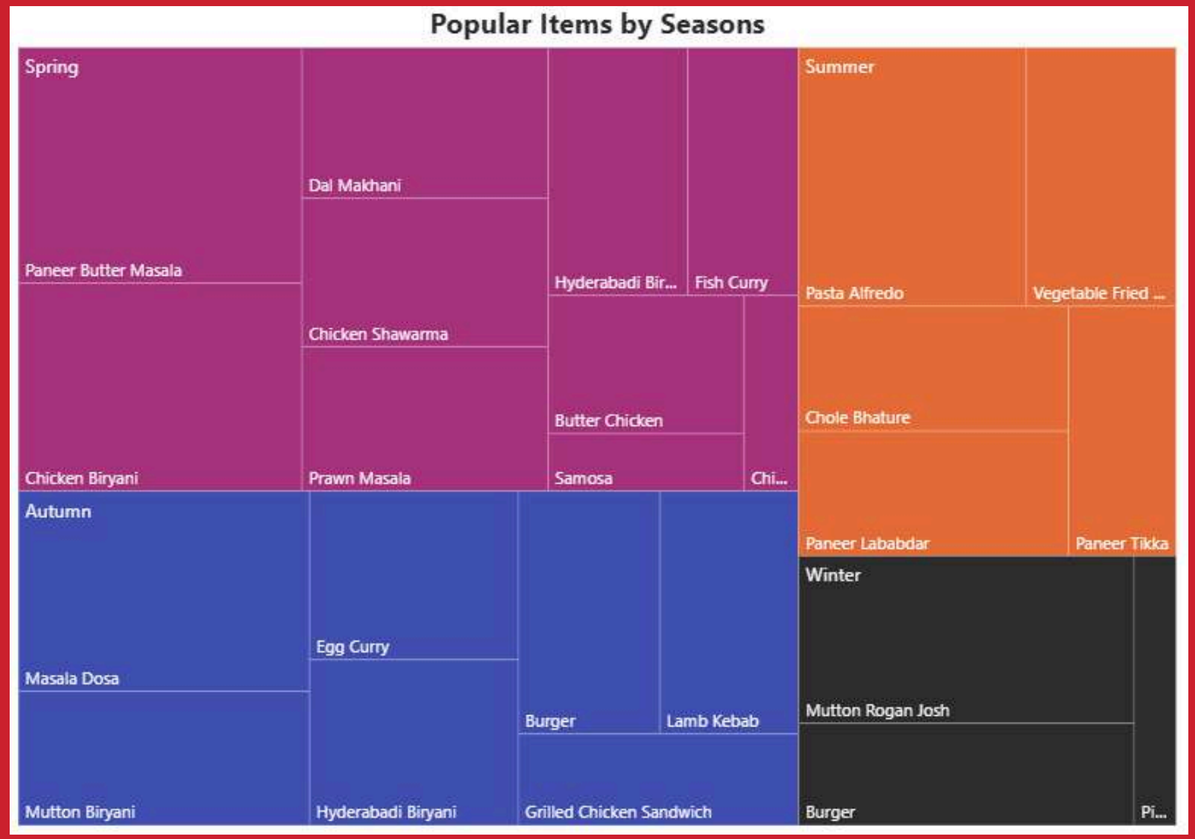
Find the number of 5-star, 4-star, and 3-star ratings each rider has. Riders receive ratings based on delivery time.

rider_id	rider_name	Five_Star	Four_Star	Three_Star
1	Ravi Kumar	98	199	420
2	Anil Singh	101	224	442
3	Sunil Yadav	96	232	393
4	Ramesh Verma	106	205	372
5	Amit Patel	105	223	0
6	Suresh Reddy	91	195	0
7	Mahesh Gupta	116	172	0
8	Pankaj Sharma	117	204	0
9	Rohit Mehra	257	353	89
10	Arvind Joshi	266	361	108
11	Sandeep Rao	251	336	103
12	Deepak Chou...	259	363	89
13	Manoj Tiwari	272	345	96
14	Siddharth Jain	269	287	102
15	Vinay Dubey	218	338	80



Track the popularity of specific order items over time and identify seasonal demand spikes.

order_item	order_count	seasons
Burger	110	Autumn
Burger	110	Winter
Butter Chicken	87	Spring
Chicken Biryani	189	Spring
Chicken Shawarma	117	Spring
Chicken Tikka	34	Spring
Chole Bhature	108	Summer
Dal Makhani	119	Spring
Egg Curry	113	Autumn
Fish Curry	88	Spring
Grilled Chicken Sa...	82	Autumn
Hyderabadi Biryani	111	Autumn
Hyderabadi Biryani	111	Spring
Lamb Kebab	108	Autumn
Masala Dosa	187	Autumn
Mutton Biryani	125	Autumn
Mutton Rogan Josh	180	Winter
Paneer Butter Ma...	214	Spring
Paneer Lababdar	108	Summer
Paneer Tikka	86	Summer
Pasta Alfredo	189	Summer
Pizza	36	Winter
Prawn Masala	114	Spring
Samosa	36	Spring
Vegetable Fried Rice	124	Summer

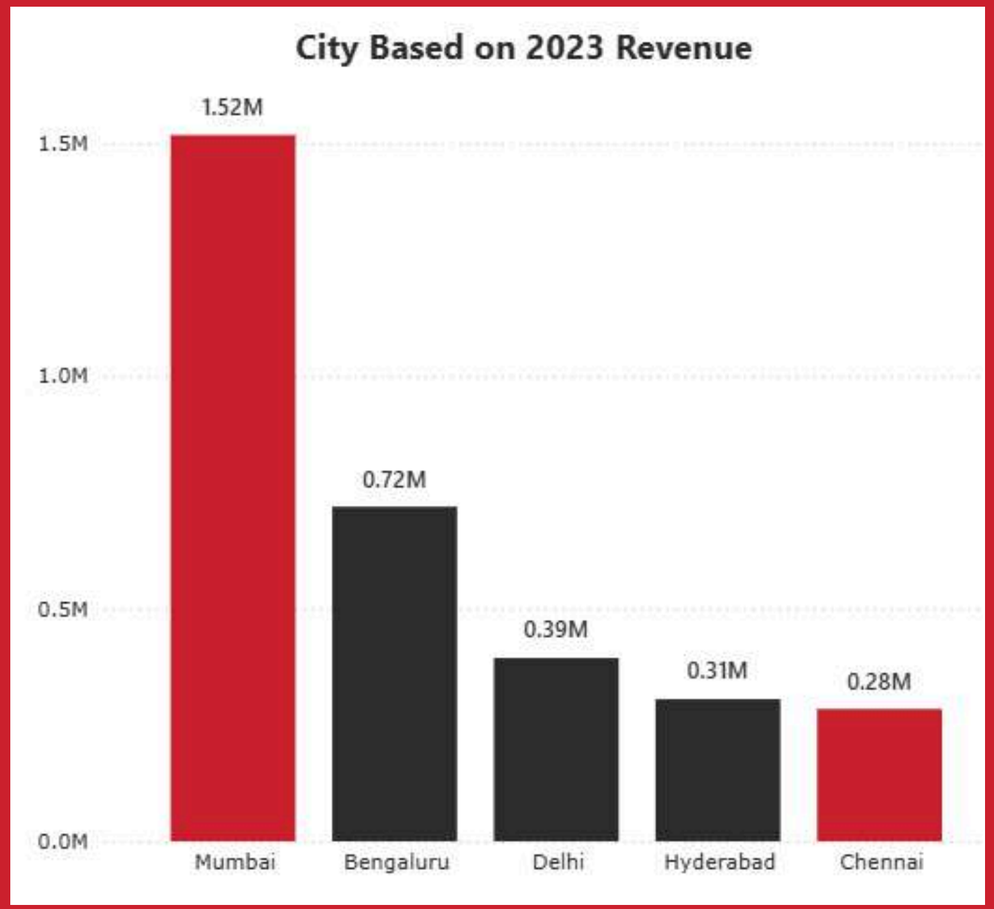


While spring is a popular season, especially for dishes like Chicken Biryani, Paneer Butter Masala, Chicken Shawarma etc..

Rank each city based on the total revenue for the last year (2023).

city	total_revenue	rnk
Mumbai	1517450	1
Bengaluru	719062	2
Delhi	393896	3
Hyderabad	305467	4
Chennai	284397	5

Mumbai is the top city based on total revenue in the year 2023 followed by Bengaluru, Delhi. Chennai got the last rank compared to other cities.



Stored Procedures

```sql
-- 1. Get Restaurant Performance Summary for a Given Year.

delimiter //
create procedure get_restaurant_summary_by_year(in input_year int)
begin
    select
        r.restaurant_id, r.restaurant_name, count(o.order_id) as total_orders,
        round(sum(o.total_amount), 2) as total_sales,
        round(avg(o.total_amount), 2) as avg_order_value
    from restaurants r
    join orders o on r.restaurant_id = o.restaurant_id
    where year(o.order_date) = input_year
    group by r.restaurant_id, r.restaurant_name
    order by total_sales desc;
end //
delimiter ;

call get_restaurant_summary_by_year(2023);
```

restaurant_id	restaurant_name	total_orders	total_sales	avg_order_value
3	Bademiya	483	156853	324.75
5	Gajalee	477	156265	327.6
10	Indigo	463	156184	337.33
6	Masala Library	485	154992	319.57
9	Britannia & Co.	478	152353	318.73
1	The Bombay Canteen	474	151472	319.56
8	Yauatcha	466	151432	324.96

```sql
-- 2. Identify Top N Customers in a Given Month & Year.
delimiter //
CREATE PROCEDURE get_top_customers_by_month (
    in input_month int,
    in input_year int,
    in limit_n int
)
begin
    select c.customer_id, c.customer_name, count(o.order_id) as total_orders,
        round(sum(o.total_amount), 2) as total_spent,
        round(avg(o.total_amount), 2) as avg_order_value
    from customers c
    join orders o on c.customer_id = o.customer_id
    where month(o.order_date) = input_month and year(o.order_date) = input_year
    group by c.customer_id, c.customer_name
    order by total_spent desc
    limit limit_n;
end //
delimiter ;
call get_top_customers_by_month(5, 2023, 5);
```

customer_id	customer_name	total_orders	total_spent	avg_order_value
6	Sneha Desai	79	24675	312.34
7	Rahul Verma	67	23593	352.13
8	Neha Joshi	69	22252	322.49
4	Ritu Patel	56	20797	371.38
5	Aman Gupta	59	19809	335.75

Enhancements

Based on order time assigning 'Traffic Conditions' and then based on that assigning 'Estimated Delivery Time' in the orders table.

```sql
-- Addon features
-- Based on order time assigning 'traffic conditions' and then based on that assigning 'estimated delivery time'.

    alter table orders
    add column traffic_conditions varchar(10),
    add column estimated_delivery_time_status varchar(20);

    update orders
    set traffic_conditions = case
    when order_time between '07:00:00' and '10:00:00' then 'High'
    when order_time between '12:00:00' and '14:00:00' then 'Medium'
    else 'Low'
    end;

    update orders
    set estimated_delivery_time_status = case
    when traffic_conditions = 'High' then '15mins delay'
    when traffic_conditions = 'Medium' then '10mins delay'
    else 'on-time'
    end;
```

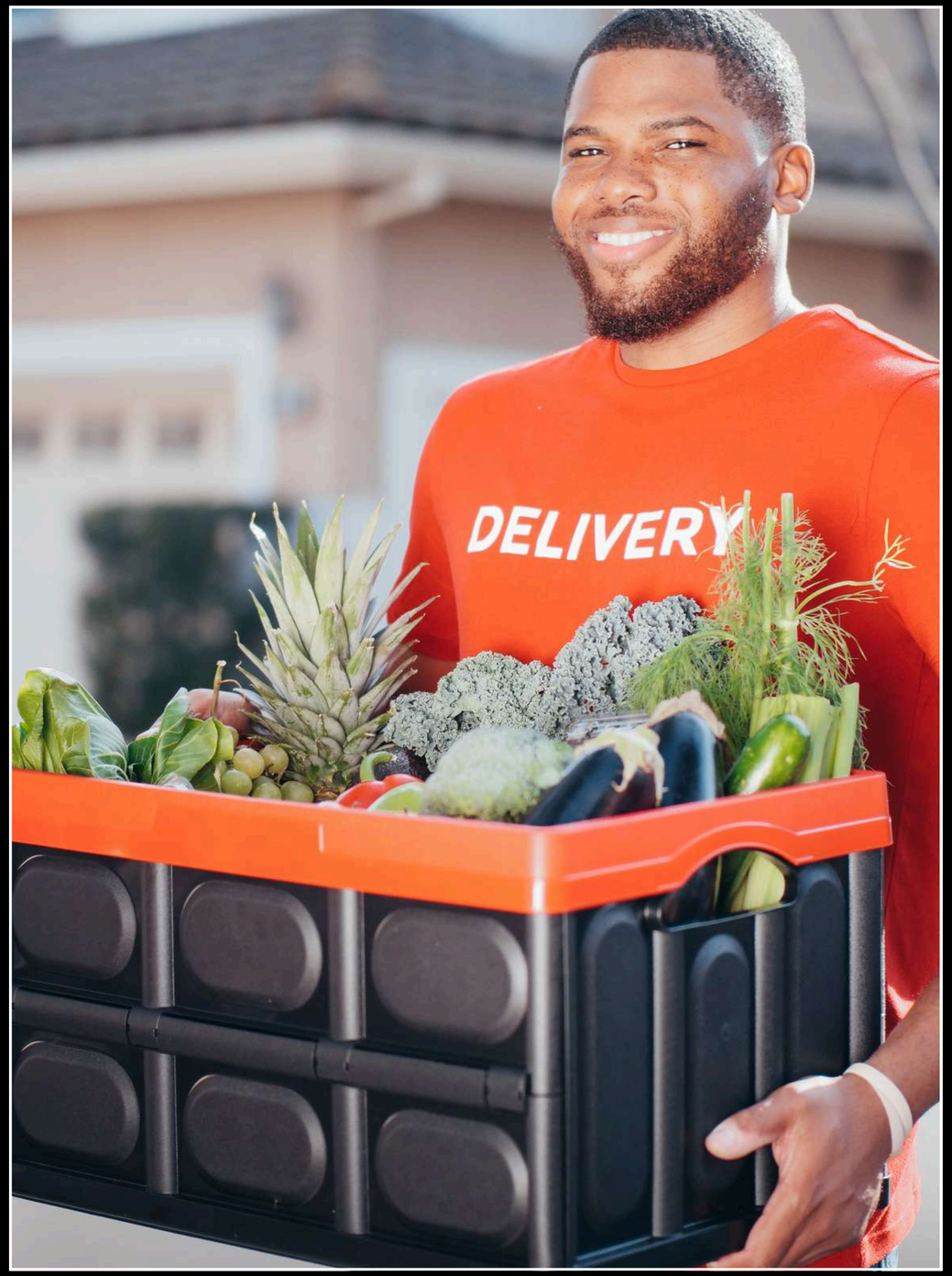
order_id	customer_id	restaurant_id	order_item	order_date	order_time	order_status	total_amount	traffic_conditions	estimated_delivery_time_status
1	13	6	Chicken Biryani	2024-01-01	12:30:00	Completed	242	Medium	10mins delay
2	2	5	Vegetable Fried Rice	2024-01-02	13:00:00	Completed	288	Medium	10mins delay
3	15	6	Chicken Biryani	2024-01-03	09:30:00	Completed	244	High	15mins delay
4	3	7	Prawn Masala	2024-01-04	14:15:00	Completed	477	Low	on-time
5	1	35	Paneer Butter Masala	2024-01-05	19:00:00	Completed	293	Low	on-time
6	12	5	Masala Dosa	2024-01-06	12:45:00	Completed	286	Medium	10mins delay
7	10	11	Mutton Rogan Josh	2024-01-07	18:30:00	Completed	267	Low	on-time
8	1	5	Vegetable Fried Rice	2024-01-08	13:30:00	Completed	323	Medium	10mins delay
9	8	9	Egg Curry	2024-01-09	12:00:00	Completed	217	Medium	10mins delay
10	16	16	Chicken Biryani	2024-01-10	19:45:00	Completed	220	Low	on-time
11	17	7	Paneer Butter Masala	2024-01-11	13:15:00	Completed	411	Medium	10mins delay
12	16	2	Vegetable Fried Rice	2024-01-12	10:00:00	Completed	228	High	15mins delay
13	4	21	Chicken Shawarma	2024-01-13	20:00:00	Completed	228	Low	on-time
14	7	3	Vegetable Fried Rice	2024-01-14	12:30:00	Completed	320	Medium	10mins delay
15	17	8	Chicken Biryani	2024-01-15	13:00:00	Completed	236	Medium	10mins delay
16	19	24	Pizza	2024-01-16	19:30:00	Completed	493	Low	on-time
17	14	49	Mutton Biryani	2024-01-17	18:00:00	Completed	423	Low	on-time
18	1	4	Masala Dosa	2024-01-18	13:45:00	Completed	475	Medium	10mins delay

Principal Findings

- **Order Cancellation Analysis -** Calculated the restaurants cancellation rate between current and previous year. Peach wine and coffe bar has high cancel rate of 6.56% and lazy suzy has low cancel rate of 0.8%.
- **Rider Efficiency Evaluation -** Identified each riders average delivery time. Mahesh Gupta has low delivery time of 32 mins and Ravi Kumar has high of 51 mins.
- **Order Timing Patterns -** Identified time slots for most orders placed on 2 hour intervals. Between 2pm and 4pm has high orders and 00am and 2am has least orders placed.
- **Rider Performance Rating System -** Given ratings for the riders like 5,4,3 stars based on their average delivery time.
- **Seasonal Food Preferences -** Tracked the most popular food orders based on the seasons like spring, summer, winter, autumn. Spring saw the highest volume of food orders and Winter recorded the lowest number of orders

Practial Suggestions

- **Seasonal Campaigns & Festival Deals -** Launch themed promotions based on festivals and seasons to align with user mood and food preferences (e.g., hot beverages in winter).
- **Feedback Loop Post-Delivery -** Encourage customers to rate not only the food but also delivery, packaging, and restaurant service — enabling better experience scoring.
- **Improve Communication Flow -** Create a support line for restaurants to quickly resolve logistics issues with riders or customers.
- **Dynamic Route Optimization Tools -** Equip riders with in-app tools to avoid high-traffic areas based on real-time data (improves delivery time and customer satisfaction).
- **Bundle Offers & Upselling -** Promote combo meals and add-on items during checkout to increase average order value.
- **Gamify the Experience -** Create monthly leaderboards or badges for riders to encourage a healthy competitive environment.



Thank you

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