Ola Ride Analytics

Project Overview

This report analyzes a dataset of 71,202 Ola ride bookings to provide insights into ride patterns, customer behavior, vehicle type preferences, and operational efficiency. The objective is to support strategic decision-making by identifying trends in successful bookings, cancellation reasons, and rating distributions. The analysis leverages cleaned data and SQL-based queries, with insights visualized through an interactive dashboard.

Dataset Summary

- Rows: 71,202

- Columns: 20

- Key Features:

  - Booking details (date, time, booking_id, booking_status, customer_id, vehicle_type, pickup_location, drop_location, v_tat, c_tat, booking_value, payment_method, ride_distance, driver_ratings, customer_rating)

  - Cancellation data (canceled_rides_by_customer, canceled_rides_by_driver, incomplete_rides, incomplete_rides_reason)

  - Vehicle information (vehicle_images)

- Missing Data: Null values in v_tat, c_tat, driver_ratings, and customer_rating for canceled or incomplete rides; vehicle_images column contains #NAME? post-cleaning.

- Data Source: Transformed from "Bookings-70000-Rows (1).xlsx" to "Bookings_clean0.1.xlsx" and loaded into the ola_bookings SQL table.

Data Preparation and Cleaning

The dataset underwent the following cleaning steps to ensure quality:

- Initial Data Loading: Imported the uncleaned Excel file into a spreadsheet tool.

- Removed Redundant Data: Cleared canceled_rides_by_customer and canceled_rides_by_driver columns, as cancellation reasons were deemed redundant with incomplete_rides_reason.

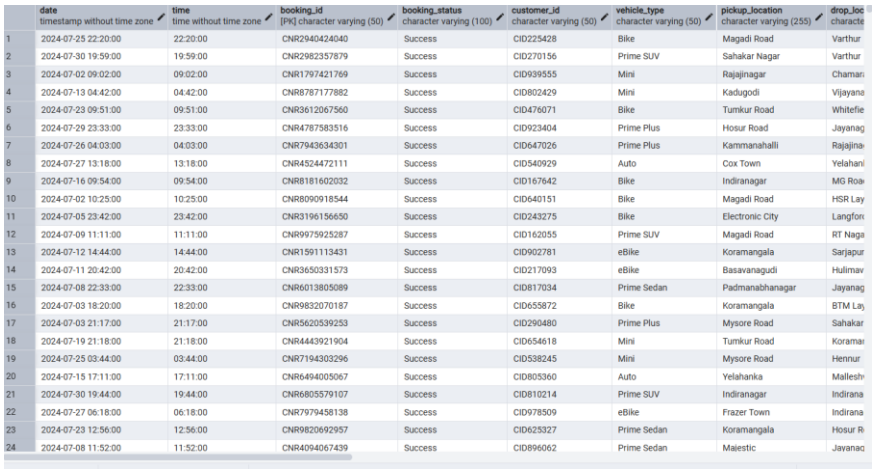
- Replaced Unnecessary Data: Replaced vehicle_images URLs with #NAME?, likely to remove irrelevant image links or due to import errors.

- Retained Core Data: Kept all 71,202 rows and unchanged columns (date, time, booking_id, etc.) intact.

- Saved Cleaned Data: Exported the cleaned dataset as "Bookings_clean0.1.xlsx" and integrated it into the ola_bookings SQL table.

Exploratory Data Analysis using SQL

1. Retrieve all Successful Bookings-This query creates a view named **Successful_Bookings** which contains all booking records where the booking status is marked as “Success



	date timestamp without time zone	time time without time zone	booking_id [PK] character varying (50)	booking_status character varying (100)	customer_id character varying (50)	vehicle_type character varying (50)	pickup_location character varying (255)	drop_loc characte
1	2024-07-25 22:20:00	22:20:00	CNR2940424040	Success	CID225428	Bike	Magadi Road	Varthur
2	2024-07-30 19:59:00	19:59:00	CNR2982357879	Success	CID270156	Prime SUV	Sahakar Nagar	Varthur
3	2024-07-02 09:02:00	09:02:00	CNR1797421769	Success	CID939555	Mini	Rajajinagar	Chaman
4	2024-07-13 04:42:00	04:42:00	CNR8787177882	Success	CID802429	Mini	Kadugodi	Vijayana
5	2024-07-23 09:51:00	09:51:00	CNR3612067560	Success	CID476071	Bike	Tumkur Road	Whitefie
6	2024-07-29 23:33:00	23:33:00	CNR4787583516	Success	CID923404	Prime Plus	Hosur Road	Jayanag
7	2024-07-26 04:03:00	04:03:00	CNR7943634301	Success	CID647026	Prime Plus	Kammanahalli	Rajajina
8	2024-07-27 13:18:00	13:18:00	CNR4524472111	Success	CID540929	Auto	Cox Town	Yelahani
9	2024-07-16 09:54:00	09:54:00	CNR8181602032	Success	CID167642	Bike	Indiranagar	MG Roa
10	2024-07-02 10:25:00	10:25:00	CNR8090918544	Success	CID640151	Bike	Magadi Road	HSR Lay
11	2024-07-05 23:42:00	23:42:00	CNR3196156650	Success	CID243275	Bike	Electronic City	Langfor
12	2024-07-09 11:11:00	11:11:00	CNR9975925287	Success	CID162055	Prime SUV	Magadi Road	RT Naga
13	2024-07-12 14:44:00	14:44:00	CNR1591113431	Success	CID902781	eBike	Koramangala	Sarjapur
14	2024-07-11 20:42:00	20:42:00	CNR3650331573	Success	CID217093	eBike	Basavanagudi	Hulimav
15	2024-07-08 22:33:00	22:33:00	CNR6013805089	Success	CID817034	Prime Sedan	Padmanabhanagar	Jayanag
16	2024-07-03 18:20:00	18:20:00	CNR9832070187	Success	CID655872	Bike	Koramangala	BTM Lay
17	2024-07-03 21:17:00	21:17:00	CNR5620539253	Success	CID290480	Prime Plus	Mysore Road	Sahakar
18	2024-07-19 21:18:00	21:18:00	CNR4443921904	Success	CID654618	Mini	Tumkur Road	Koramar
19	2024-07-25 03:44:00	03:44:00	CNR7194303296	Success	CID538245	Mini	Mysore Road	Hennur
20	2024-07-15 17:11:00	17:11:00	CNR6494005067	Success	CID805360	Auto	Yelahanka	Mallesh
21	2024-07-30 19:44:00	19:44:00	CNR6805579107	Success	CID810214	Prime SUV	Indiranagar	Indirana
22	2024-07-27 06:18:00	06:18:00	CNR7979458138	Success	CID978509	eBike	Frazer Town	Indirana
23	2024-07-23 12:56:00	12:56:00	CNR9820692957	Success	CID625327	Prime Sedan	Koramangala	Hosur R
24	2024-07-08 11:52:00	11:52:00	CNR4094067439	Success	CID896062	Prime Sedan	Majestic	Jayanag

2. Find the Average Ride Distance for Each Vehicle Type-This query creates a view average_ride_distance_for_each_vehicle to calculate the average ride distance for every vehicle type in the dataset.

	vehicle_type character varying (50)	avg_distance numeric
1	eBike	15.6303183721156655
2	Auto	6.2099626645706426
3	Bike	15.7466889041499068
4	Prime Sedan	15.7126705653021442
5	Prime Plus	15.3720267348142324
6	Mini	15.5738244983528002
7	Prime SUV	15.2022160664819945

3. Get the Total Number of Cancelled Rides by Customers-This query counts how many rides were cancelled by customers and stores the result in a view named **cancelled_rides_by_customers**.

	count bigint
1	7214

4. List the Top 5 Customers Who Booked the Highest Number of Rides-This query identifies the top 5 customers based on the total number of bookings they made.

	customer_id character varying (50)	total_rides bigint
1	CID340854	4
2	CID463543	3
3	CID657000	3
4	CID356460	3
5	CID896927	3

5. Get the Number of Rides Cancelled by Drivers Due to Personal and Car-Related Issues-This query counts all rides cancelled by drivers citing “Personal & Car related issue” as the reason.

	count bigint
1	4449

6. Find the Maximum and Minimum Driver Ratings for Prime Sedan Bookings-This query retrieves the highest and lowest driver ratings for rides that used the “Prime Sedan” vehicle type.

	max_rating double precision	min_rating double pr
1	5	3

Graph Visu

7. Find the Average Customer Rating per Vehicle Type-This query calculates the average customer rating for each type of vehicle and stores it in a view called **AVG_Cust_Rating**.

	vehicle_type character varying (50)	avg_customer_rating double precision
1	eBike	3.9887519500780066
2	Auto	3.9978692955954718
3	Bike	3.991264260040628
4	Prime Sedan	4.000231374363722
5	Prime Plus	4.007608695652183
6	Mini	3.997006083893701
7	Prime SUV	3.9975113122171915

8. Calculate the Total Booking Value of Rides Completed Successfully-This query sums up the booking value of all rides that were successfully completed.

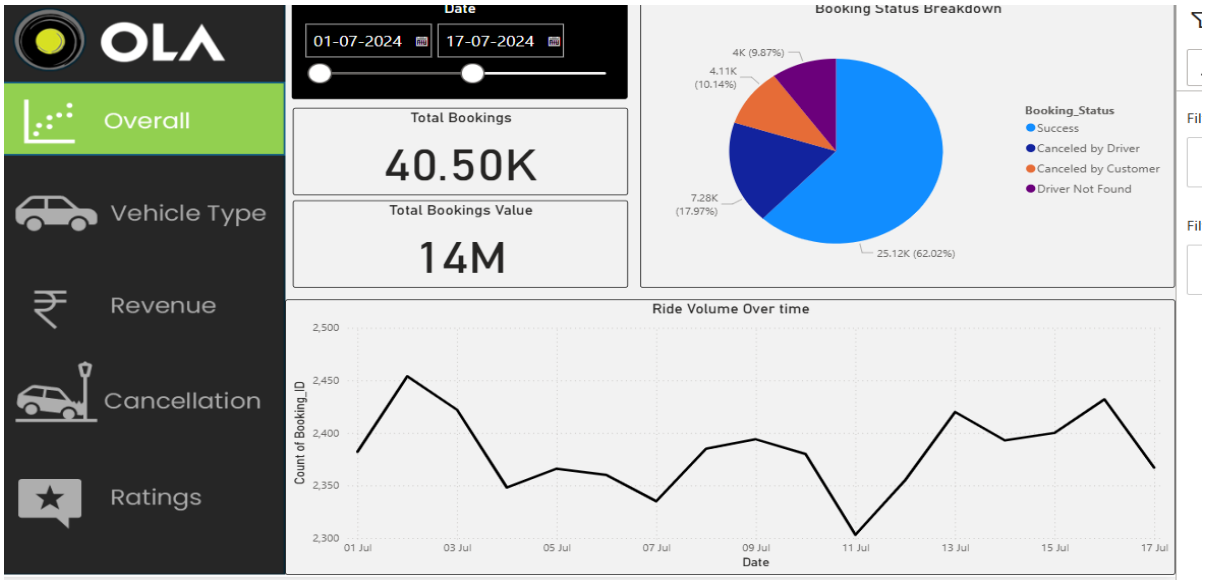
	total_successful_ride_value bigint
1	24216619

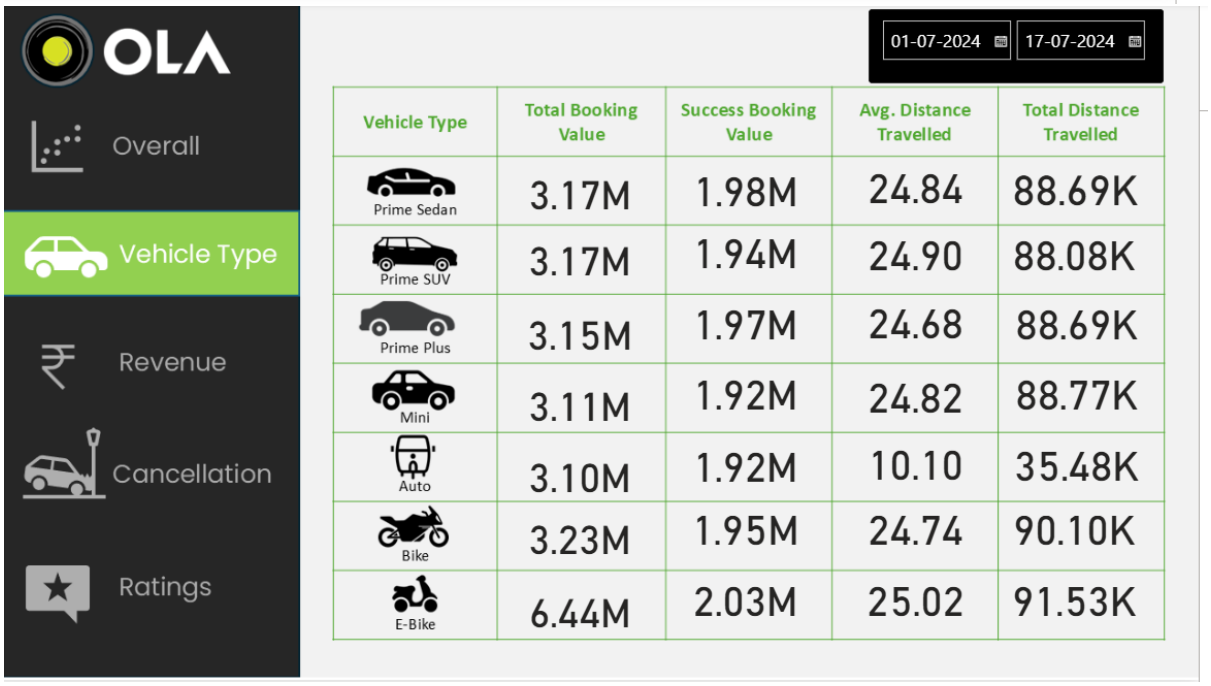
9. List All Incomplete Rides Along with the Reason-This query displays all incomplete rides and their corresponding reasons from the table.

	booking_id [PK] character varying (50)	incomplete_rides_reason text
1	CNR5176704322	Customer Demand
2	CNR9312632867	Vehicle Breakdown
3	CNR7924302885	Customer Demand
4	CNR1640228587	Other Issue
5	CNR7623690602	Other Issue
6	CNR9590311980	Customer Demand
7	CNR5863244684	Customer Demand
8	CNR9526078867	Customer Demand
9	CNR7154043084	Customer Demand
10	CNR3193710797	Other Issue
11	CNR7073850950	Customer Demand

Dashboard Visualizations

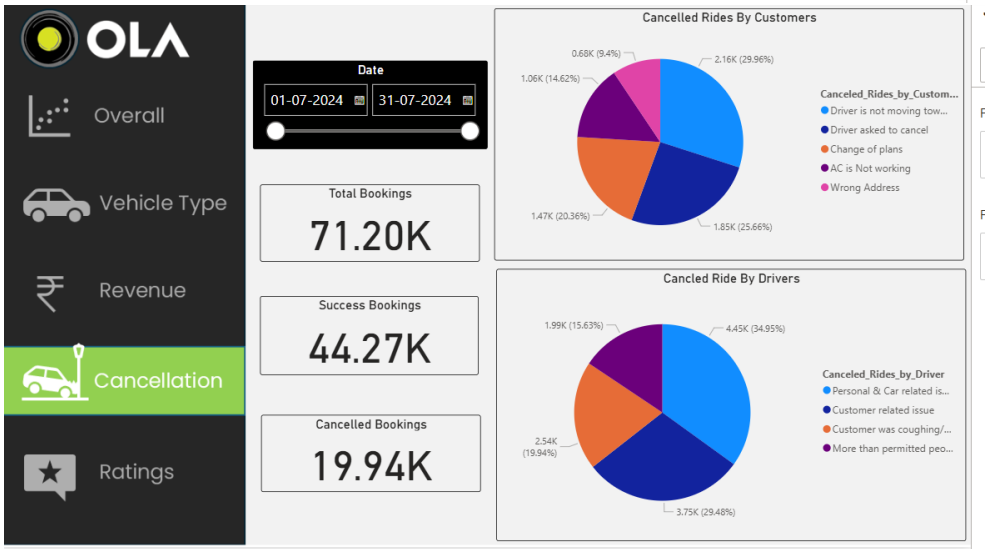
Finally, we built an interactive dashboard in Power BI to present insights visually.

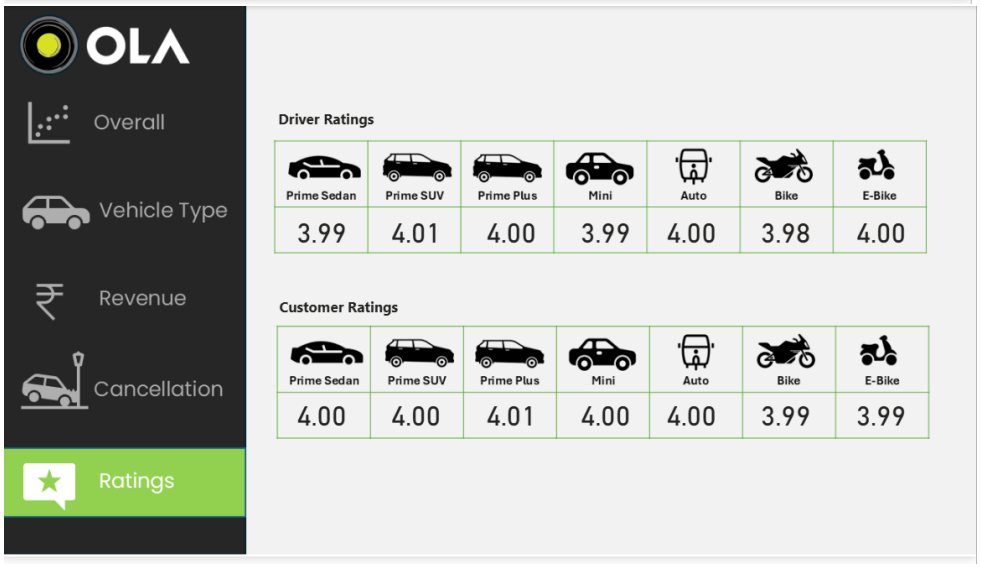




Vehicle Type	Total Booking Value	Success Booking Value	Avg. Distance Travelled	Total Distance Travelled
Prime Sedan	3.17M	1.98M	24.84	88.69K
Prime SUV	3.17M	1.94M	24.90	88.08K
Prime Plus	3.15M	1.97M	24.68	88.69K
Mini	3.11M	1.92M	24.82	88.77K
Auto	3.10M	1.92M	10.10	35.48K
Bike	3.23M	1.95M	24.74	90.10K
E-Bike	6.44M	2.03M	25.02	91.53K


OLA
Overall
Vehicle Type
Revenue
Cancellation
Ratings
Revenue by Payment Method
Sum of Booking_Value
8M
6M
4M
2M
0M
7.5M
5.6M
0.5M
0.2M
Cash
UPI
Credit Card
Debit Card
Payment_Method
Date
01-07-2024
17-07-2024
Top 5 Customers
Customer_ID
Sum of Booking_Value
CID219102 3783
CID281468 3847
CID408446 3702
CID635848 4976
CID933539 5314
Total 21622
Revenue by Payment Method
Sum of Ride_Distance
35K
35K
33K
34K
33K
33K
33K
33K
32K
35K
34K
35K
32K
30K
20K
10K
0K
01 Jul
03 Jul
05 Jul
07 Jul
09 Jul
11 Jul
13 Jul
15 Jul
17 Jul
Date


OLA
Overall
Vehicle Type
Revenue
Cancellation
Ratings
Date
01-07-2024
31-07-2024
Total Bookings
71.20K
Success Bookings
44.27K
Cancelled Bookings
19.94K
Cancelled Rides By Customers
0.68K (9.4%)
2.16K (29.96%)
1.06K (14.62%)
1.47K (20.36%)
1.85K (25.66%)
Canceled_Rides_by_Custom...
Driver is not moving tow...
Driver asked to cancel
Change of plans
AC is Not working
Wrong Address
Cancled Ride By Drivers
1.99K (15.63%)
4.45K (34.95%)
2.54K (19.94%)
3.75K (29.48%)
Canceled_Rides_by_Driver
Personal & Car related is...
Customer related issue
Customer was coughing/...
More than permitted peo...


OLA
Overall
Vehicle Type
Revenue
Cancellation
Ratings
Driver Ratings
Prime Sedan 3.99
Prime SUV 4.01
Prime Plus 4.00
Mini 3.99
Auto 4.00
Bike 3.98
E-Bike 4.00
Customer Ratings
Prime Sedan 4.00
Prime SUV 4.00
Prime Plus 4.01
Mini 4.00
Auto 4.00
Bike 3.99
E-Bike 3.99

Business Recommendations

- Enhance Vehicle Availability: Increase the fleet of high-demand vehicle types (e.g., Prime SUV, Bike) based on average ride distance trends.

- Reduce Cancellations: Address driver-related issues (e.g., car maintenance support) and educate customers on cancellation policies to minimize "Change of plans" cancellations.

- Loyalty Incentives: Offer discounts or priority services to the top 5 customers to boost retention.

- Driver Training: Implement training for drivers with low ratings, especially in Prime Sedan bookings, to improve overall ratings.

- Payment Promotion: Encourage UPI usage with cashback offers, leveraging its popularity in successful transactions.

- Route Optimization: Deploy more drivers on high-traffic routes identified in the heatmap to reduce wait times.