Ola Data Analytics Project

Project Overview

The Ola Data Analytics project leverages Power BI and SQL to analyze ride-hailing data, extract insights, and support data-driven decision-making. The project focuses on understanding customer behavior, ride demand trends, and optimizing business strategies.

Objectives

- Analyze ride trends and customer behavior.
- Optimize driver allocation to reduce wait times.
- Identify high-demand areas and peak ride hours.
- Develop dashboards for real-time insights.

Data Sources

The project utilizes structured ride-hailing data stored in a SQL database. The dataset includes:

- **Ride ID**: Unique identifier for each ride.
- **Pickup & Drop Locations**: GPS coordinates of ride origin and destination.
- **Ride Distance**: Total kilometers traveled.
- **Fare Amount**: Cost of each ride.
- **Payment Method**: Cash, Card, or Wallet.
- **Driver Ratings**: Customer feedback on ride experience.
- **Date & Time**: Ride request and completion timestamps.

Data Processing with SQL

- **Data Cleaning**: Handling missing values and duplicates.
- **Data Transformation**: Extracting key insights using SQL queries.
- **Aggregations**: Grouping data to find trends (e.g., total rides per day, peak demand hours).
- **Joins**: Combining multiple tables for comprehensive analysis.

Data Visualization with Power BI

Power BI dashboards were created to visualize ride patterns and operational insights:

- **Ride Distribution Analysis**: Identifies high-demand areas.
- **Fare Trends**: Analyzes average fare amounts across different ride distances.
- **Customer Insights**: Segments users based on frequency and spending behavior.
- **Driver Performance**: Evaluates ratings and ride efficiency.

Key Insights

- **Peak Demand Hours**: High ride requests observed between 8 AM - 10 AM and 6 PM - 9 PM.
- **Frequent Locations**: Airports and business districts have the highest ride density.
- **Surge Pricing Impact**: Fare increases significantly during peak hours.
- **Customer Retention**: High-value customers prefer digital payments and frequent rides.

Recommendations

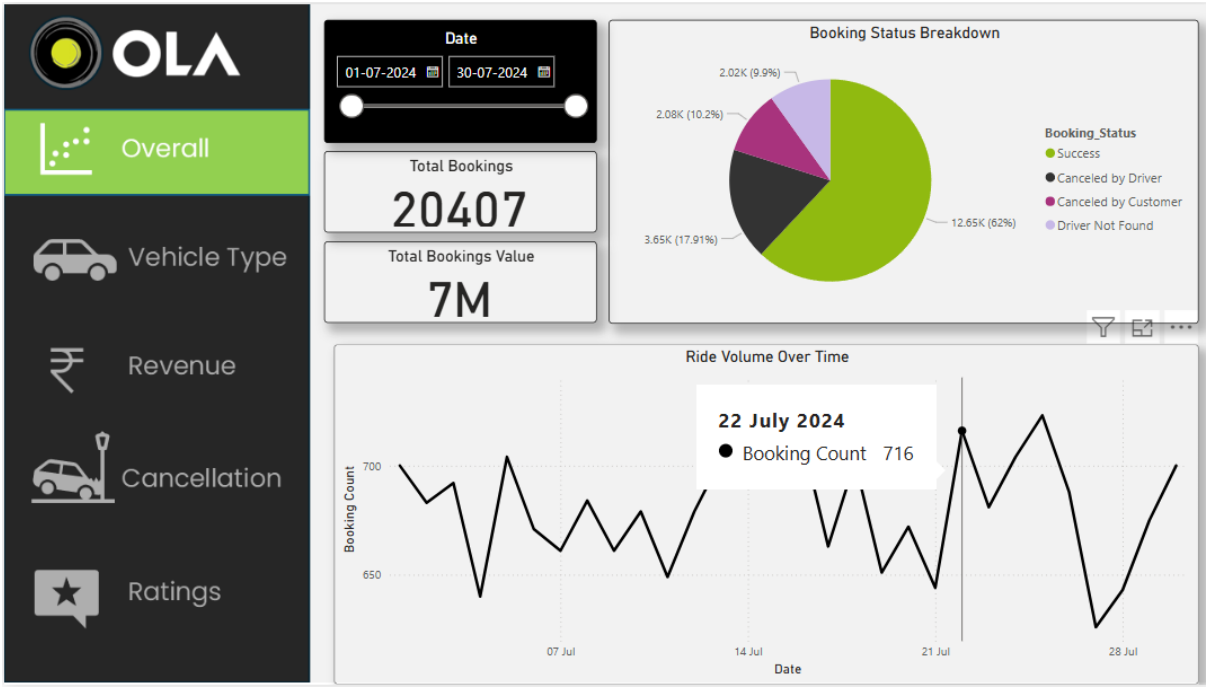
- Increase driver availability during peak hours.
- Implement targeted discounts for frequent riders.
- Optimize surge pricing based on real-time demand data.
- Improve driver allocation efficiency using predictive analytics.

Tools & Technologies Used

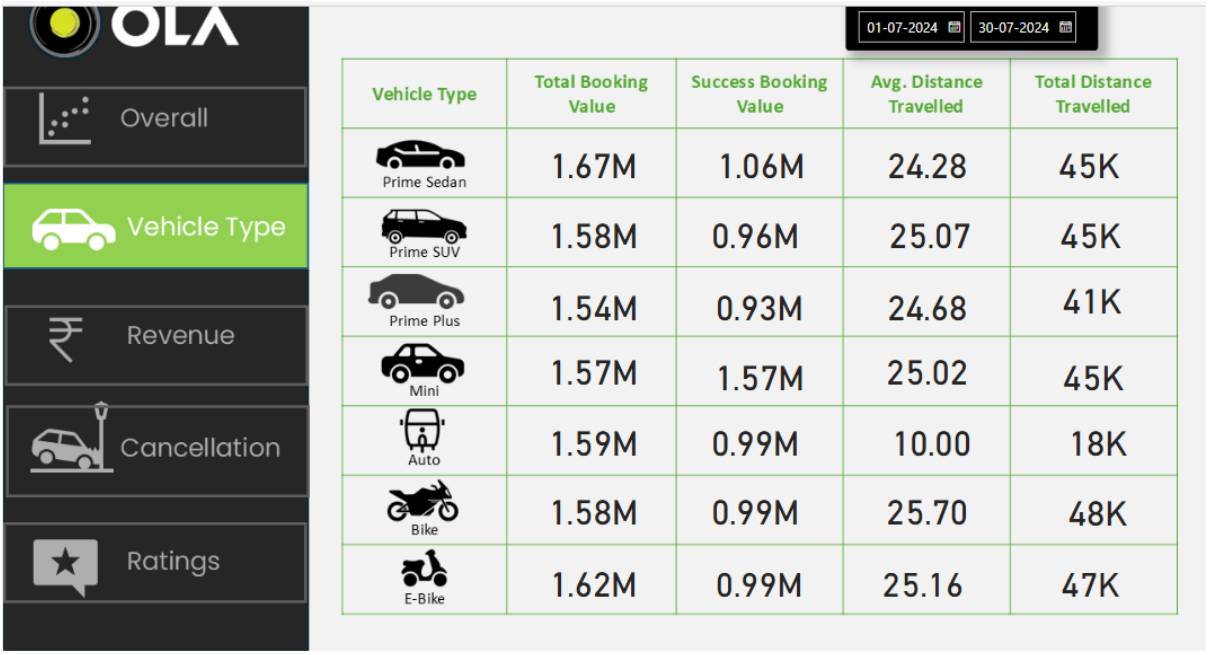
- **SQL**: Data extraction, transformation, and aggregation.
- **Power BI**: Interactive dashboards and data visualization.
- **Azure SQL Database**: Data storage and management.

Dashboard:

Home Page:



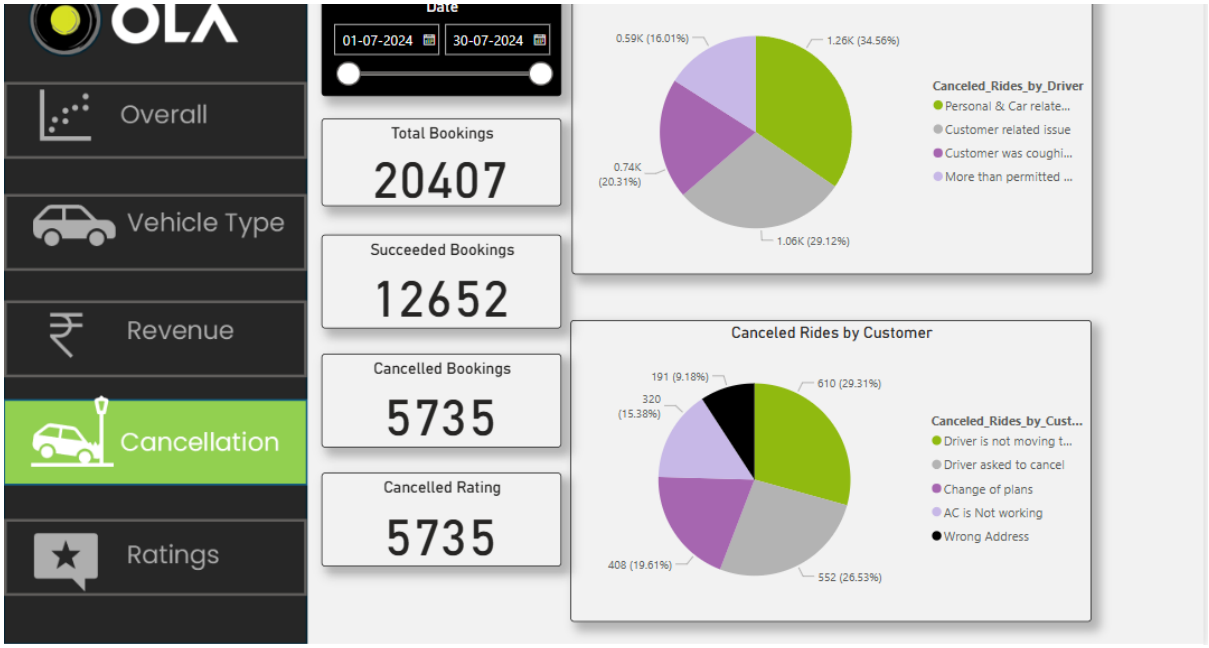
Vehicle Type:



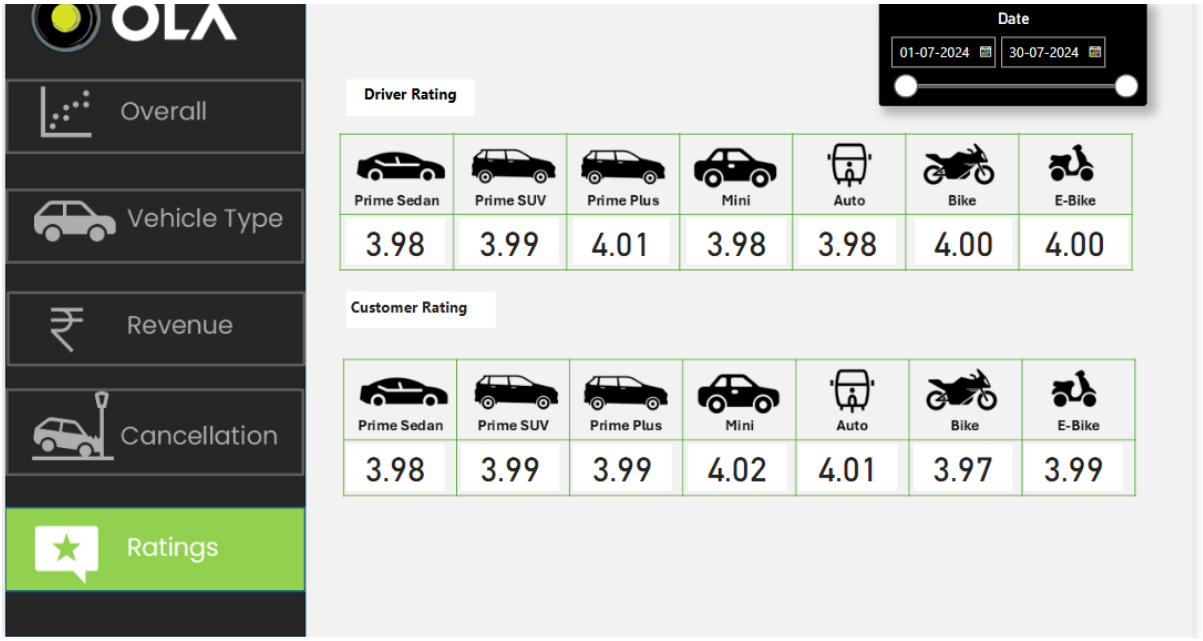
Vehicle Type	Total Booking Value	Success Booking Value	Avg. Distance Travelled	Total Distance Travelled
Prime Sedan	1.67M	1.06M	24.28	45K
Prime SUV	1.58M	0.96M	25.07	45K
Prime Plus	1.54M	0.93M	24.68	41K
Mini	1.57M	1.57M	25.02	45K
Auto	1.59M	0.99M	10.00	18K
Bike	1.58M	0.99M	25.70	48K
E-Bike	1.62M	0.99M	25.16	47K

Revenue:

Cancelation:



Rating:



Conclusion

This project provides valuable insights into ride demand patterns and customer behavior, enabling Ola to enhance service efficiency, improve customer satisfaction, and drive business growth through data-driven strategies.