

OLA Ride Insights

End-to-End Business Analytics Report

1. Executive Summary

This project analyzes OLA ride data to understand **business performance, revenue trends, cancellations, and customer behaviour**.

The goal was to build a **complete analytics solution**, starting from raw data to business dashboards, and finally presenting insights in a clear and usable format.

The solution uses:

- **PostgreSQL & SQL** for data logic
- **Power BI** for business dashboards
- **Streamlit** for end-to-end presentation

This project is designed exactly how **real analytics work is done in companies**.

2. Business Context

OLA operates a large number of rides daily.

Management needs answers to questions like:

- Are bookings getting completed successfully?
- Why do customers or drivers cancel rides?
- Which vehicle types generate more revenue?
- Which payment methods are preferred?
- Are customers and drivers satisfied?

Without proper analytics, these decisions are based on assumptions.

This project converts raw data into **clear business insights**.

3. Business Problems Addressed

The following **business problems** were identified and solved:

1. Booking Performance

How many bookings are successfully completed and how many fail?

2. Cancellation Analysis

Who cancels more – customers or drivers – and why?

3. Revenue Performance

How much revenue is generated from successful rides?

4. Vehicle Type Analysis

Which vehicle categories perform better in terms of usage and revenue?

5. Payment Method Usage

Which payment methods are most used by customers?

6. Customer Value

Who are the top customers based on ride frequency?

7. Service Quality

How satisfied are customers and drivers based on ratings?

8. Operational Issues

Why are some rides marked as incomplete?

Each problem was converted into **SQL logic, measurable KPIs, and visual insights**.

4. Data & Backend Design (SQL)

Database

- PostgreSQL was used as the backend database.

SQL Strategy

Instead of running random queries, **SQL Views** were created to:

- Keep logic clean
- Improve performance
- Allow reuse across Power BI and Streamlit

Examples of SQL KPIs:

- Total successful bookings
- Customer cancellations
- Revenue by payment method
- Top 5 customers
- Average ratings

All business calculations are done **at database level**, which is how real analytics systems work.

5. SQL Output Validation (Proof of Work)

To ensure correctness:

- SQL views were connected to Streamlit using Python
- Live outputs were displayed as:
 - KPI metrics
 - Tables
 - Simple charts

This proves that:

- SQL is executed
- Results are not hardcoded
- Backend logic is reliable

6. Power BI Dashboards (Business Visualization)

Power BI was used to build **business-friendly dashboards**.

Dashboard Pages Include:

- Overall booking performance
- Vehicle type analysis
- Revenue and payment trends
- Cancellation analysis
- Customer & driver ratings

Why Power BI?

- Easy for non-technical users
- Interactive filters
- Clear visual storytelling

Note:

Live embedding is restricted due to organizational (college) Power BI tenant policy.

This is a real-world enterprise limitation.

Screenshots and live Power BI Service links are provided instead.

This approach is **commonly used in companies** where security policies apply.

7. Streamlit Application (Business Presentation Layer)

Streamlit is used as the **final delivery layer**.

Streamlit Responsibilities:

- Explain the business problem
- Show SQL logic clearly
- Display live SQL outputs
- Showcase Power BI dashboards
- Present the complete workflow end-to-end

Streamlit acts as a **single place** where anyone can understand:

- What problem was solved
- How it was solved
- What insights were generated

8. Key Business Insights

Some important insights from the analysis:

- A noticeable portion of bookings fail due to cancellations
- Certain vehicle types contribute more consistently to revenue
- Digital payment methods dominate usage
- Customer ratings vary across vehicle categories
- Repeat customers contribute significantly to ride volume

These insights can help business teams:

- Reduce cancellations
- Improve fleet planning
- Optimize pricing strategies
- Enhance customer experience

9. Business Impact

If implemented in production, this solution can help OLA:

- Track daily operational performance
- Identify problem areas quickly
- Make data-driven decisions
- Improve customer and driver satisfaction
- Increase overall revenue efficiency

10. Challenges Faced

- Power BI public embedding restricted due to organization policy
- Dataset is static (not real-time)

These are **common real-world constraints** and were handled professionally.