

# 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.