📄 FULL PROJECT REPORT — "Ola Ride Insights Analytics Project"

1️⃣ Project Overview

Project Title

Ola Ride Insights — Data-Driven Mobility Analytics

Domain

Ride-Sharing & Mobility Analytics

Objective

The objective of this project is to analyze Ola ride booking data to understand:

✓ ride demand
✓ customer behaviour
✓ cancellations
✓ revenue trends
✓ ratings & service quality

and provide **data-driven recommendations** to improve business performance.

Tools Used

- SQL — Data extraction & queries
- Python + Streamlit — Web analytics app
- Power BI — Interactive dashboards
- Pandas — Data preprocessing

Dataset Description

Each row represents one booking and includes:

- Date & Time
- Customer ID
- Vehicle Type
- Booking Status
- Ride Distance
- Payment Method
- Driver Rating
- Customer Rating
- Cancellation Reason

Dataset Size: **~103,000 rides**

2️⃣ Business Problem

Ride-sharing companies like Ola operate at massive scale.
But raw booking data alone **cannot answer critical business questions** like:

❓ When is demand highest?
❓ Which customers contribute most revenue?
❓ Which vehicle type performs best?
❓ Why do customers cancel rides?
❓ Are drivers rated fairly?
❓ Which payment method is preferred?

This project transforms raw operational data into **visual dashboards & insights** to support business strategy.

3️⃣ Data Cleaning & Preprocessing

Performed:

✓ missing value handling
✓ converting dates
✓ numeric conversion
✓ standardizing booking status
✓ deriving cancellation flags
✓ aggregations for dashboard metrics

This ensured **high-quality analysis**.

4️⃣ SQL Analytics Summary

Key SQL outputs included:

Business Question	**SQL Achieved Insight**
How many rides completed?	Count of Success rides
What is avg ride distance?	~14 km
Which customers book most?	Top 5 customer list
How many cancellations?	Customer vs Driver breakdown
What is revenue from successful rides?	₹56.5M approx
What is UPI usage?	Extracted via filters
What is average rating?	~2.48 for both sides

SQL provided **structured business intelligence foundation**.

5️⃣ Power BI Dashboard Summary

The dashboard is divided into sections:

📊 Overall Page

Shows high-level KPIs:

- Total Booking Value ≈ **₹56.53M**
- Total Rides ≈ **103K**
- Avg Ride Distance ≈ **14.19 km**
- Avg Revenue per Ride ≈ **₹548.75**
- Avg Driver Rating ≈ **2.48**
- Avg Customer Rating ≈ **2.48**

Plus:

- Booking Status Breakdown
- Ride Volume Trend
- Vehicle Distance Ranking

🚙 Vehicle Type Page

Shows:

- Revenue by Vehicle Type
- Success revenue
- Avg Distance
- Total Distance

Prime variants dominate revenue & distance.

💰 Revenue Page

Includes:

- Top 5 Customers by Booking Value
- Revenue by Payment Method

🔥 Insight
Cash & UPI dominate payments

❌ Cancellation Page

Breakdown by:

- Customer reasons
- Driver reasons

Volumes clearly visible.

⭐ Ratings Page

Shows:

- Avg rating by vehicle
- Customer ratings
- Driver ratings

Both average around **2.48 / 5**

Consistent across vehicle segments.

6️⃣ Streamlit Dashboard

The Streamlit web app:

✓ replicates dashboard insights
✓ allows interactive filtering
✓ has KPIs
✓ organizes sections into tabs

This demonstrates **end-to-end analytics deployment**.

💡 7️⃣ Key Business Insights

1️⃣ Ride Fulfilment & Demand

✓ ~62% of total bookings convert to rides
✓ ~38% impacted by cancellations or failures

Meaning:
There is major scope to improve service reliability

2️⃣ Revenue Trends

✓ Total revenue ~₹56.5M
✓ Avg per ride ~₹549

Revenue is **spread consistently across vehicle categories**

3️⃣ Vehicle Performance

Prime vehicles lead in:

✓ Distance traveled

✓ Revenue contribution

Autos lag behind.

4️⃣ Customer & Driver Feedback

✓ Both averages ~2.48/5

This suggests:

⚠ moderate satisfaction levels

⚠ possible pricing / wait time issues

⚠ service inconsistency

5️⃣ Cancellation Drivers

Customer Reasons

- Driver not moving towards pickup
- Wrong address
- Change of plans

Driver Reasons

- Personal / Car related
- Customer related issue

Meaning:

Real-time matching system needs improvement

🎯 8️⃣ Business Recommendations

☑ 1. Improve Driver Allocation

Introduce smart routing & assignment based on:

✓ distance to pickup
✓ driver idle time
✓ historical reliability

☑ 2. Incentivize Off-Peak Hours

Dynamic bonuses reduce cancellations.

☑ 3. Customer Retention Strategy

Reward:

✓ frequent riders
✓ high-rated users

with cashback / loyalty points

☑ 4. Strengthen Driver Support

Training required for:

✓ behavior
✓ navigation
✓ service quality

☑ 5. Encourage Digital Payments

UPI adoption campaigns reduce cash handling risk.

☑ 6. Monitor Ratings Dashboard Daily

Trigger alerts for:

⚠ drivers below threshold

⚠ repeat cancellations

❓ 9️⃣ Business Questions Answered by Dashboard

Q1 — What % of rides are successful?

About **62%**

Q2 — What is the average ride distance?

14.19 km

Q3 — Which vehicle type travels most distance?

Prime class

Q4 — What is the most used payment method?

Cash & UPI

Q5 — Who are the top customers?

Visible in Revenue tab

Q6 — Why do customers cancel rides?

Mainly:

✓ Driver not moving
✓ Wrong address
✓ Change of plans

Q7 — What is the average rating?

2.48 / 5

for both customers & drivers