

# Business Problem Statement

Uber operates in a data-rich environment, with millions of trips generating critical information daily—covering bookings, payment types, ride duration, distance, time of travel, and location details. However, the challenge lies in transforming this massive dataset into actionable insights that can help streamline operations, improve customer satisfaction, and increase profitability.

This project aims to create an interactive Power BI dashboard that uncovers patterns in ride behavior, highlights revenue trends, measures trip efficiency, and supports strategic decision-making across key business areas.

## Dashboard 1: Overview Analysis

### Objective:

To provide a high-level summary of Uber's trip data to monitor performance, revenue generation, and efficiency KPIs across cities, vehicle types, payment methods, and trip types.

### Key Questions Addressed:

1. How many bookings are completed during the analysis period?
2. What is the total and average revenue per trip?
3. How long and how far are customers typically traveling?
4. Which vehicle types are most preferred and most efficient?
5. Are there differences in ride behavior between payment methods or time of day?

### Key KPIs:

- Total Bookings
- Total Booking Value
- Average Booking Value
- Total Trip Distance
- Average Trip Distance
- Average Trip Duration

### Expected Outcomes:

- Identify demand patterns and revenue cycles.
- Detect inefficiencies in travel distance and trip duration.
- Compare customer preferences across payment methods and trip types.
- Derive insights to support dynamic pricing and driver allocation strategies.

## Core Visualizations & Features

### 1. Dynamic Measure Selector

- Allows users to toggle between key metrics (Bookings, Revenue, Distance) using a disconnected table.
- Updates charts and titles dynamically for focused analysis.

### 2. Payment & Trip Type Analysis

- Evaluate bookings by Payment Method (Card, Cash, Wallet).
- Compare trip behavior between Day vs. Night Trips.

### 3. Vehicle Type KPI Matrix

- A matrix to compare KPIs (Bookings, Revenue, Distance) across various vehicle types.
- Conditional formatting for quick interpretation of performance extremes.

### 4. Trend Analysis by Day

- Visualize booking fluctuations by date to detect seasonality, event impact, and user behavior patterns.
- Supports planning for driver supply and promotional strategies.

## Location Analysis

Understanding where rides begin and end is crucial for optimizing operations. This section provides insights into:

- Top Pickup & Drop-off Points: Helps Uber align driver supply with demand hubs.
- Longest Trips: Identifies outlier rides for potential route optimization or pricing reviews.
- Top Locations by Bookings: Prioritize resources in high-demand areas.
- Most Preferred Vehicle per Location: Tailor vehicle distribution based on user preference by area.

## Usability & Enhancements

- Dynamic Titles & Tooltips: Add interactivity and context to charts.
- Slicers for Filtering: Enable city-, vehicle-, and time-based filtering.
- Bookmarks for Data Definitions: Explain metrics, tables, and data sources.
- Clear Filters Button: Reset all slicers at once for a clean dashboard view.
- Export Button: Allow users to download raw data for offline analysis.

## Dashboard 2: Time-Based Analysis

### Objective:

To identify peak and off-peak booking periods by analyzing trip volume across different times of the day and days of the week.

### Visuals & Components:

1. Pickup Time Area Chart (10-Min Intervals)→ Understand micro-trends in booking patterns throughout the day.
2. Day-Wise Line Chart→ Compare bookings from Monday to Sunday to evaluate weekday vs. weekend traffic.
3. Hourly Heatmap by Day→ A matrix view (Hour x Day) to spot high-demand periods and allocate drivers efficiently.

### Use Cases:

- Enhance demand forecasting for surge pricing.
- Optimize driver shifts to match real-time demand.
- Plan promotional campaigns around low-demand hours.

## Dashboard 3: Details Tab (Drill-through View)

### Objective:

Provide a granular view of the data to explore individual trips and detailed records filtered from other visuals.

## Features:

- Grid Table with trip-level fields (e.g., booking ID, city, vehicle type).
- Drill-through from any chart to investigate specific data points.
- Bookmark Toggle to switch between filtered view and full dataset.