Uber - Documentation

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1. Project Overview

This Power BI solution provides a consolidated reporting framework for Uber operations in the **NCR region of India**. It integrates booking, trip, financial, and experience data into an interactive set of dashboards to support **executives, finance teams, and operations managers**.

The key objectives of the solution are to:

- Track **business performance** using reliable KPIs.
- Provide **financial insights** for decision-making.

- Monitor **customer and driver experience** to identify areas of improvement.

2. Data Source

The dashboard is built on a **single primary table**:

Table Name: `ncr_ride_bookings`

Source: Kaggle (Data was artificially generated)

Granularity: Each row represents an individual ride booking.

3. Key Data Columns

Column Name	Description
Date	The booking date (YYYY-MM-DD).
Time	The booking time (HH:MM).
Booking ID	Unique identifier for each ride.
Booking Status	Final status (e.g., *Completed, Cancelled, Incomplete*).
Customer ID	Unique rider identifier.
Vehicle Type	Type of vehicle booked (e.g., Sedan, Auto, Bike).
Pickup Location	Location name where the ride starts.
Drop Location	Location name where the ride ends.
Avg VTAT (Vehicle Time at Arrival)	Avg time driver took to reach pickup after accepting ride.
Avg CTAT (Customer Time at Arrival)	Avg ride duration
Cancelled by Customer	Flag indicating if cancellation was customer-driven.
Reason to Cancel (Customer)	Categorical reason provided by customer.
Cancelled Rides by Driver	Flag indicating if cancellation was driver-driven.
Reason for Cancellation (Driver)	Driver-provided reason for cancellation.
Incomplete Rides	Flag if ride started but did not finish.
Incomplete Ride Reasons	Reported reason for incompletion.
Booking Value	Fare value for the booking.

Column Name	Description
Ride Distance	Distance covered in km.
Driver Ratings	Customer-given driver rating (1–5).
Customer Ratings	Driver-given customer rating (1–5).
Payment Method	Mode of payment (*Cash, UPI, Card, Wallet*).

4. Data Coverage

- **Period Covered:** Full year of **2024** (Jan–Dec).
- **Geographic Coverage: National Capital Region (NCR), India** — including locations such as Delhi, Gurgaon, Noida, Ghaziabad, Faridabad, etc.
- **Volume: 150 000**

5. Data Quality Considerations

- Location data is provided as **textual names** only; geocoding is required to map them to coordinates.
- Duplicates in Booking ID - the same identifier is assigned to multiple bookings

6. Dashboard Pages

6.1 Landing Page

- **Purpose**: Provides an introduction to the dashboard, navigation guidance, and context for the reports.
- **Content**:
  - Brief overview of what the dashboard covers.
  - Identification of main users (Executives, Finance, Operations, Customer Experience teams).

6.2 KPI Overview

- **Purpose**: Offers a **high-level executive summary** of operational and business performance.

- **Key Metrics**:
  - Total Revenue
    - Visual Type: Card
    - Calculation: Sum of ‘ncr_ride_bookings’[Booking Value]
  - Total Revenue MoM %
    - Visual Type: Table
    - Calculation:

```
Sum of Booking Value MoM% =
IF(
    ISFILTERED('ncr_ride_bookings'[Date]),
    VAR __PREV_MONTH =
        CALCULATE(
            SUM('ncr_ride_bookings'[Booking Value]),
            DATEADD('ncr_ride_bookings'[Date].[Date], -1, MONTH)
        )
    RETURN
        DIVIDE(
            SUM('ncr_ride_bookings'[Booking Value]) - __PREV_MONTH,
            __PREV_MONTH
        )
)
```

  - Total Bookings
    - Visual Type: Card
    - Calculation: Count of ‘ncr_ride_bookings’[Booking ID]
  - Total Bookings MoM %
    - Visual Type: Table
    - Calculation

```
Count of Booking ID MoM% =
IF(
    ISFILTERED('ncr_ride_bookings'[Date]),
    VAR __PREV_MONTH =
        CALCULATE(
            COUNTA('ncr_ride_bookings'[Booking ID]),
            DATEADD('ncr_ride_bookings'[Date].[Date], -1, MONTH)
        )
    RETURN
        DIVIDE(
            COUNTA('ncr_ride_bookings'[Booking ID]) - __PREV_MONTH,
            __PREV_MONTH
        )
)
```

- Completed Ride %
  - Visual Type: Card
  - Calculation:

```
Completed Ride % =
DIVIDE(
    CALCULATE(
        COUNT(ncr_ride_bookings[Booking ID]),
        ncr_ride_bookings[Booking Status] = "Completed"
    ),
    COUNT(ncr_ride_bookings[Booking ID]),
    2
)
```

- Completed Ride % MoM %
  - Visual Type: Card
  - Calculation:

```
Completed Ride % MoM% =
IF(
    ISFILTERED('ncr_ride_bookings'[Date]),
    AR __PREV_MONTH =
        CALCULATE(
            [Completed Ride %],
            DATEADD('ncr_ride_bookings'[Date].[Date], -1, MONTH)
        )
    RETURN
        DIVIDE([Completed Ride %] - __PREV_MONTH, __PREV_MONTH)
)
```

- Customer Cancellation Rate
  - Visual Type: Card
  - Calculation:

```
Cancelled by Customer =
DIVIDE(
    CALCULATE(
        COUNT(ncr_ride_bookings[Booking ID]),
        ncr_ride_bookings[Booking Status] = "Cancelled by Customer"
    ),
    COUNT(ncr_ride_bookings[Booking ID]),
    2
)
```

- Customer Cancellation Rate MoM %
  - Visual Type: Card
  - Calculation:

```
Cancelled by Customer MoM% =
IF(
    ISFILTERED('ncr_ride_bookings'[Date]),
```

```
    VAR __PREV_MONTH =
        CALCULATE(
            [Cancelled by Customer],
            DATEADD('ncr_ride_bookings'[Date].[Date], -1, MONTH)
        )
    RETURN
        DIVIDE([Cancelled by Customer] - __PREV_MONTH, __PREV_MONTH)
)
```

- Driver Cancellation Rate
  - Visual Type: Card
  - Calculation:

```
Cancelled by Driver =
DIVIDE(
    CALCULATE(
        COUNT(ncr_ride_bookings[Booking ID]),
        ncr_ride_bookings[Booking Status] = "Cancelled by Driver"
    ),
    COUNT(ncr_ride_bookings[Booking ID]),
    2
)
```

- Driver Cancellation Rate MoM%
  - Visual Type: Card
  - Calculation:

```
Cancelled by Driver MoM% =
IF(
    ISFILTERED('ncr_ride_bookings'[Date]),
    VAR __PREV_MONTH =
        CALCULATE(
            [Cancelled by Driver],
            DATEADD('ncr_ride_bookings'[Date].[Date], -1, MONTH)
```

```
    )
  RETURN
    DIVIDE([Cancelled by Driver] - __PREV_MONTH, __PREV_MONTH)
)
```

- Average Customer Rating
  - Visual Type: Card
  - Calculation: Average of ‘ncr_ride_bookings’[Customer Rating]
- Average Customer Rating MoM%
  - Visual Type: Card
  - Calculation:

```
Average of Customer Rating MoM% =
IF(
  ISFILTERED('ncr_ride_bookings'[Date]),
  AR __PREV_MONTH =
    CALCULATE(
      AVERAGE('ncr_ride_bookings'[Customer Rating]),
      DATEADD('ncr_ride_bookings'[Date].[Date], -1, MONTH)
    )
  RETURN
    DIVIDE(
      AVERAGE('ncr_ride_bookings'[Customer Rating]) - __PREV_MO
NTH,
      __PREV_MONTH
    )
)
```

6.3 Financial Overview

- **Purpose**: Focused on **revenue and payment analysis** to monitor financial performance.
- **Key Metrics**:

- Total Revenue
  - Visual Type: Card
  - Calculation: Sum of ‘ncr_ride_bookings’[Booking Value]
- Average Booking Value
  - Visual Type: Card
  - Calculation: Average of ‘ncr_ride_bookings’[Booking Value]
- Total Booking Value by Day and Time
  - Visual Type: Heat Map
  - Calculation: Sum of ‘ncr_ride_bookings’[Booking Value]
- Booking Value by Payment Method
  - Visual Type: Bar Chart
  - Calculation: Sum of ‘ncr_ride_bookings’[Booking Value]
- Booking Value by Vehicle Type
  - Visual Type: Bar Chart
  - Calculation: Sum of ‘ncr_ride_bookings’[Booking Value]
- Transaction Details
  - Visual Type: Table
  - Fields: Booking ID, Booking Status, Booking Value, Payment Method, Avg CTAT, Avg VTAT, Vehicle Type, Ride Distance, Pickup Location, Drop Location, Customer Rating

6.4 Customer Experience Overview

- **Purpose**: Measures **service quality and satisfaction** from both customers and drivers.
- **Key Metrics**:
  - Total Number of Bookings
    - Visual Type: Card

        - Calculation: Count of ‘ncr_ride_bookings’[Booking ID]
    - Number of Bookings by Booking Status
        - Visual Type: Bar Chart
        - Calculation: Count of ‘ncr_ride_bookings’[Booking ID]
    - Average Customer Ratings
        - Visual Type: Card
        - Calculation: Average of ‘ncr_ride_bookings’[Customer Rating]
    - Average Driver Ratings
        - Visual Type: Card
        - Calculation: Average of ‘ncr_ride_bookings’[Driver Rating]
    - Average CTAT
        - Visual Type: Card
        - Calculation: Average of ‘ncr_ride_bookings’[AVG CTAT]
    - Average VTAT
        - Visual Type: Card
        - Calculation: Average of ‘ncr_ride_bookings’[AVG VTAT]
    - Average Ride Distance & Average Booking Value by Time
        - Visual Type: Line Chart
        - Calculation: Average of ‘ncr_ride_bookings’[Ride Distance], Average of ‘ncr_ride_bookings’[Booking Value]
    - % of Cancelled Trips by Customer Reasons
        - Visual Type: Bar Chart
        - Calculation: % of Grand Total for Count of ‘ncr_ride_bookings’[Cancelled Rides by Customer]
    - % of Cancelled Trips by Driver Reasons
        - Visual Type: Donut Chart

        - Calculation: % of Grand Total for Count of ‘ncr_ride_bookings’[Cancelled Rides by Driver]
    - “No Driver Found” by Time
        - Visual Type: Area Chart
        - Calculation: Count of ‘ncr_ride_bookings’[Booking ID]
    - Incomplete Ride Reasons
        - Visual Type: Bar Chart
        - Calculation: Count of ‘ncr_ride_bookings’[Incomplete Rides]

7. Usage Notes

MoM will not work correctly when several months are selected.

8. Business Problem

Uber’s NCR operations handle **thousands of daily rides** across multiple cities, vehicle types, and payment methods. Managing this scale introduces several challenges:

- **Lack of Visibility** – Executives need a quick, reliable way to track overall performance (completed rides, cancellations, revenue trends) but existing reports were fragmented.
- **Financial Tracking Gaps** – Finance teams needed clear insights into revenue.
- **Customer Experience Blind Spots** – Operations managers lacked consolidated reporting on customer ratings, reasons for cancellations and incomplete rides.

Without a unified reporting solution, decision-making was slow, reactive, and based on incomplete information.

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9. Solution Provided

This Power BI solution consolidates **booking, financial, and experience data** into a **single interactive dashboard** with three key perspectives:

1. **KPI Overview**
    - Provides executives with a **snapshot of performance** using the most critical metrics: revenue, volume, ride completion rate, cancellations, and ratings.
    - Month-over-Month (MoM) comparisons highlight **trends and changes** at a glance.
2. **Financial Overview**
    - Tracks **total revenue, average booking value,** and **payment method mix**.
    - Provides finance teams with a clear picture of earnings and potential revenue leakage.
3. **Customer Experience Overview**
    - Highlights **driver and rider ratings**, cancellation reasons, and incomplete rides.
    - Helps operations managers **identify service bottlenecks** (e.g., dissatisfaction, repeated cancellation reasons).

10. Business Impact

- **Executives** can make faster, data-driven decisions on operational efficiency.
- **Finance teams** gain better visibility into revenue streams.
- **Operations & Experience managers** can pinpoint service issues and work on improving rider satisfaction and reducing cancellations.
- **Overall**, the solution establishes a **single source of truth** for Uber NCR operations, reducing reporting complexity and aligning teams on consistent KPIs.