

# UBER TRIP ANALYSIS

Sunil Kumar Prusty



Uber

# DAHBOARD 1: OVERVIEW ANALYSIS

"Analyze Uber trip data using Power BI to uncover insights into booking trends, revenue generation, and trip efficiency, enabling stakeholders to make informed, data-driven decisions."

## KPI's

1. **Total Bookings** – How many trips were booked over a given period?

```
Total Bookings = COUNT('Trip Details'[Trip ID])
```

2. **Total Booking Value** – What is the total revenue generated from all bookings?

```
Total Booking Value = SUM('Trip Details'[fare_amount]) + SUM('Trip Details'[Surge Fee])
```

3. **Average Booking Value** – What is the average revenue per booking?

```
Avg Booking Value = DIVIDE([Total Booking Value],[Total Bookings],BLANK())
```

4. **Total Trip Distance** – What is the total distance covered by all trips?

```
Total Trip Distance =
```

```
VAR TotalMiles = SUM('Trip Details'[trip_distance]) / 1000
```

```
RETURN
```

```
CONCATENATE(FORMAT(TotalMiles,"0"),"K Miles")
```

5. **Average Trip Distance** – How far are customers traveling on average per trip?

```
Average Trip Distance =
```

```
VAR AvgMile = ROUND(AVERAGE('Trip Details'[trip_distance]),0)
```

```
RETURN
```

```
CONCATENATE(AvgMile, " Miles")
```

6. **Average Trip Time** – What is the average duration of trips?

```
Average Trip Time =
```

```
VAR AvgTime = AVERAGEX('Trip Details',  
DATEDIFF('Trip Details'[Pickup Time],'Trip Details'[Drop Off Time],MINUTE))
```

```
RETURN
```

```
CONCATENATE(FORMAT(AvgTime,"0"),"min")
```

### Expected Outcomes:

- ✓ Identify trends in ride bookings and revenue generation.
- ✓ Analyse trip efficiency in terms of distance and duration.
- ✓ Compare booking values and trip patterns across different time periods.
- ✓ Provide insights to optimize pricing models and improve customer satisfaction

### CHART's

Create a Measure Selector using a Disconnected Table with the following values:

- Total Bookings
- Total Booking Value
- Total Trip Distance

Then, use a measure to dynamically update the visualizations based on user selection.

**By Payment Type (Card, Cash, Wallet, etc.)**

**By Trip Type (Day/Night)**

### **Additional Enhancements:**

- **Dynamic Title** – Update the chart title based on the selected measure.
- **Slicers** – Add filters for Date, City, and other interactive filters for deeper analysis.
- **Tooltips** – Show additional details like Average Booking Value or Trip Distance.

### **Vehicle Type Analysis - Grid View in Power BI**

Create a grid table (matrix or table visual) to analyse key performance indicators like Total Bookings, Total Booking Value, Avg Booking Value, Total Trip Distance across different Vehicle Types in Uber trips.

### **Power BI Implementation:**

- **Use a Table or Matrix Visual** to display Vehicle Type with the KPIs.
- **Apply Conditional Formatting** to highlight high and low values.
- **Enable Sorting & Filtering** for user interaction.

### **Total Bookings by Day**

- Detecting trends and fluctuations in daily trip volumes.
- Identifying peak and off-peak booking days.
- Understanding the impact of external factors (holidays, events, weather) on ride demand.
- Supporting strategic planning for resource allocation and pricing adjustments.

## Location Analysis

Understanding trip locations is crucial for optimizing ride distribution, demand forecasting, and operational efficiency. This analysis focuses on:

### ➤ Most Frequent Pickup Point

- Identify the most common starting locations for trips.
- Helps in optimizing driver availability and dynamic pricing strategies.

### To using the Dax measure

Most Frequent Pickup Point =

```
VAR PickPoint = TOPN(1,
    SUMMARIZE('Trip Details', 'Location Table'[Location],
        "Pickup Point",
        COUNT('Trip Details'[Trip ID])
    ),
    [Pickup Point],DESC)
RETURN
    CONCATENATEX(PickPoint, 'Location Table'[Location],",")
```



## ➤ Most Frequent Drop-off Point

- Find the most common drop-off locations.
- Requires activating an **inactive relationship** in Power BI between **Pickup Location** and **Drop-off Location** in the data model.

### How to resolve the using DAX

Most Frequent Dropoff Point =

```
VAR DropOffCounts =  
    ADDCOLUMNS(  
        SUMMARIZE(  
            'Trip Details',  
            'Location Table'[Location] ),  
        "Drop Off Counts",  
        CALCULATE(  
            COUNT('Trip Details'[Trip ID]),  
            USERELATIONSHIP('Trip Details'[DOLocationID], 'Location Table'[LocationID]))  
    )  
VAR RankedDropOffs =  
    ADDCOLUMNS(  
        DropOffCounts,  
        "Rank",  
        RANKX(DropOffCounts, [Drop Off Counts],, DESC, Dense))  
VAR TopDropOff = FILTER(RankedDropOffs, [Rank] = 1)  
RETURN  
    CONCATENATEX(TopDropOff, 'Location Table'[Location], ",")
```

➤ Farthest Trip

- Determine the longest trip based on distance travelled.
- Useful for analysing outlier trips, long-distance demand, and fare optimization.

Father Trip =

```
VAR MaxDistance = MAX('Trip Details'[trip_distance])
```

```
VAR PickupLocation =
```

```
    LOOKUPVALUE(  
        'Location Table'[Location],  
        'Location Table'[LocationID],  
        CALCULATE(  
            SELECTEDVALUE('Trip Details'[PULocationID]),  
            'Trip Details'[trip_distance] = MaxDistance))
```

```
VAR DropOffLocation =
```

```
    LOOKUPVALUE(  
        'Location Table'[Location],  
        'Location Table'[LocationID],  
        CALCULATE(  
            SELECTEDVALUE('Trip Details'[DOLocationID]),  
            'Trip Details'[trip_distance] = MaxDistance))
```

```
RETURN
```

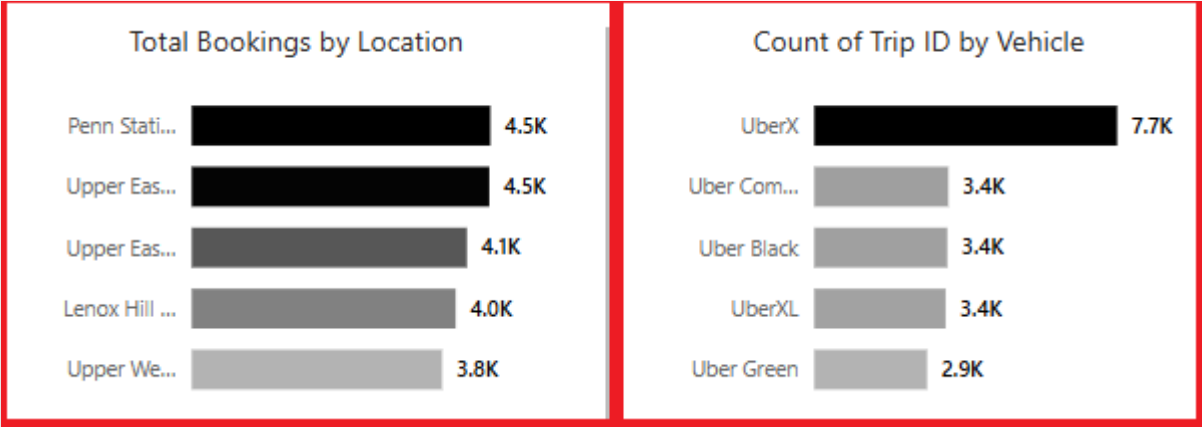
```
"Pickup: " & PickupLocation & " → Drop-Off: " & DropOffLocation & "(" & FORMAT(MaxDistance,"0.0") &  
"Miles)"
```

**Total Bookings by Location (Top 5)**

- Identify the **top 5 locations** with the highest trip bookings.
- Helps in demand forecasting and optimizing driver availability in high-traffic areas.

**Most Preferred Vehicle for Location Pickup**

- Determine the most frequently booked **vehicle type** at each pickup location.
- Supports strategic vehicle distribution based on customer preferences and location demand.





## Other Implementation Enhancements for Uber Trip Analysis Dashboard

### ➤ Bookmark for Data Details

- Add a "**Data Details**" bookmark to display a pop-up or side panel explaining:
  - Meaning of key metrics (Total Bookings, Total Trip Distance, etc.).
  - Description of tables used in the analysis.
  - Data source and refresh frequency.

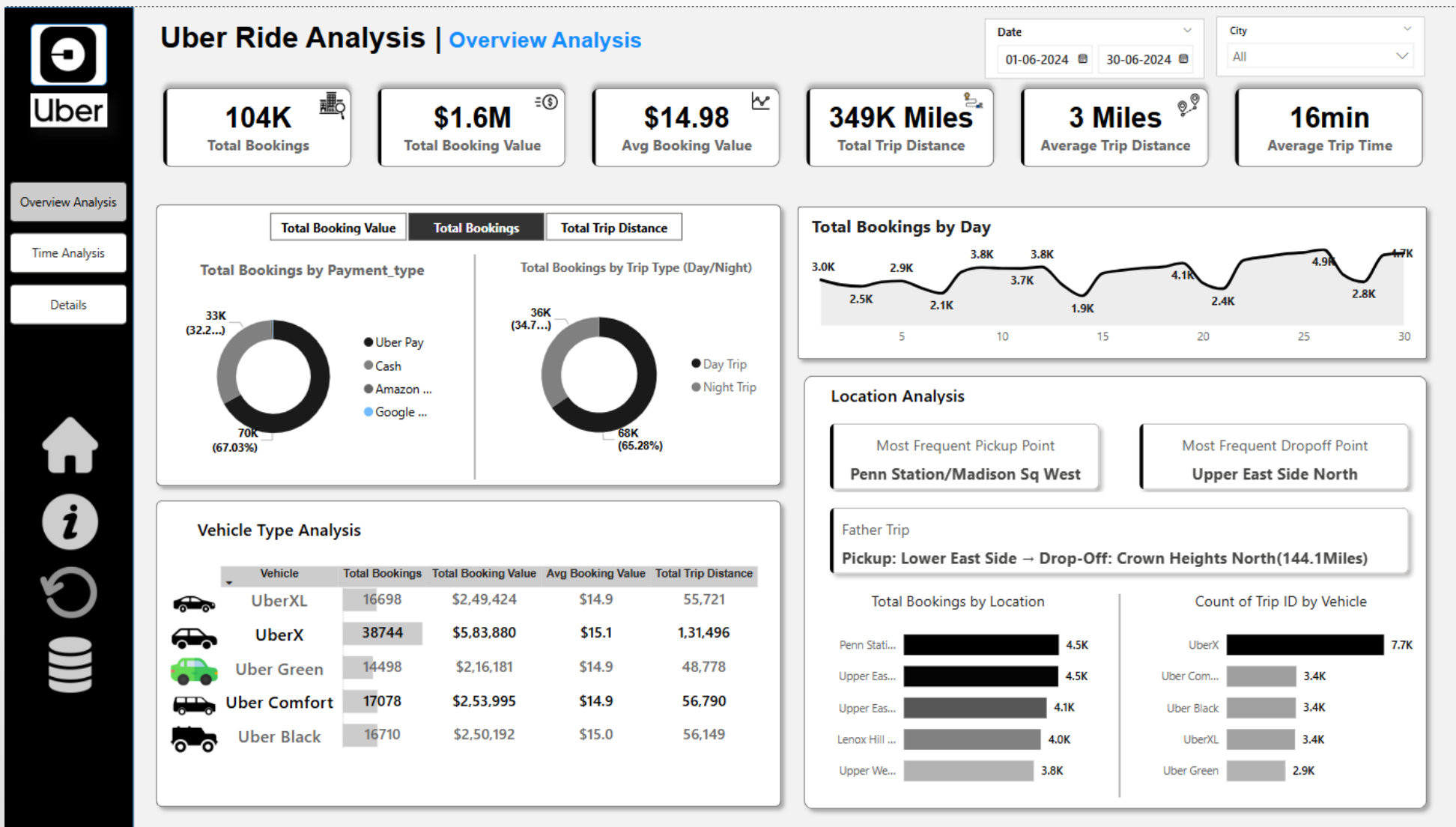
### ➤ Clear Slicer Button

- Add a "**Clear Filters**" button using a **blank button with a Reset Slicers action** to reset all selections in one click.
- Improves user experience for quick dashboard resets.

### ➤ Download Raw Data Button

- Add a **button to export raw data** in CSV or Excel format.
- Use **Power Automate** or **built-in Power BI Export functionality**.
- Enables users to analyse raw data outside Power BI if needed.

# Dashboard 1 :- Overview Analysis



## DAHBOARD 2: TIME ANALYSIS

To understand trip patterns based on time, Uber needs to analyse ride demand and trends across different time intervals. This dashboard will help in optimizing operations, pricing, and driver availability.

### Global Dynamic Measure (Filters All Charts)

A **measure selector** will be created for:

- ✓ **Total Bookings**
- ✓ **Total Booking Value**
- ✓ **Total Trip Distance**

This dynamic measure will update all visuals based on user selection.

Total Booking Value

Total Bookings

Total Trip Distance

## Visualizations:

### By Pickup Time (10-Minute Intervals) - Area Chart

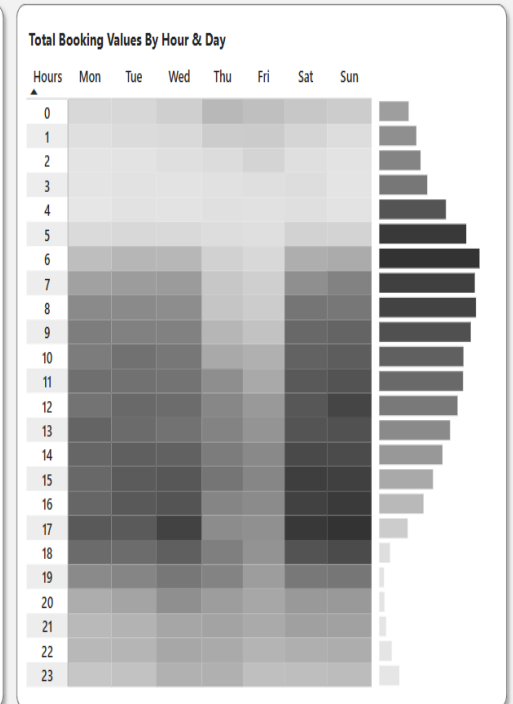
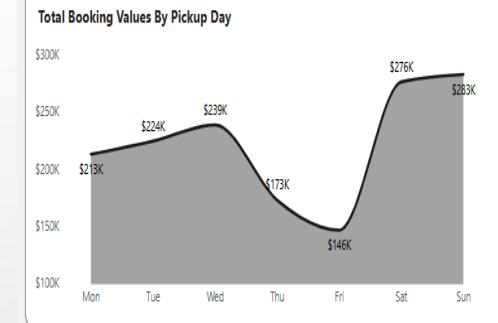
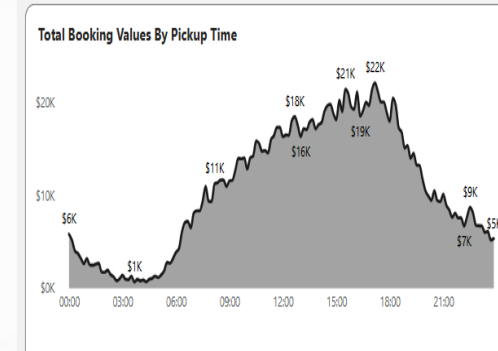
- Groups trip bookings into **10-minute intervals** throughout the day.
- Helps in identifying peak and off-peak demand periods.

### By Day Name - Line Chart

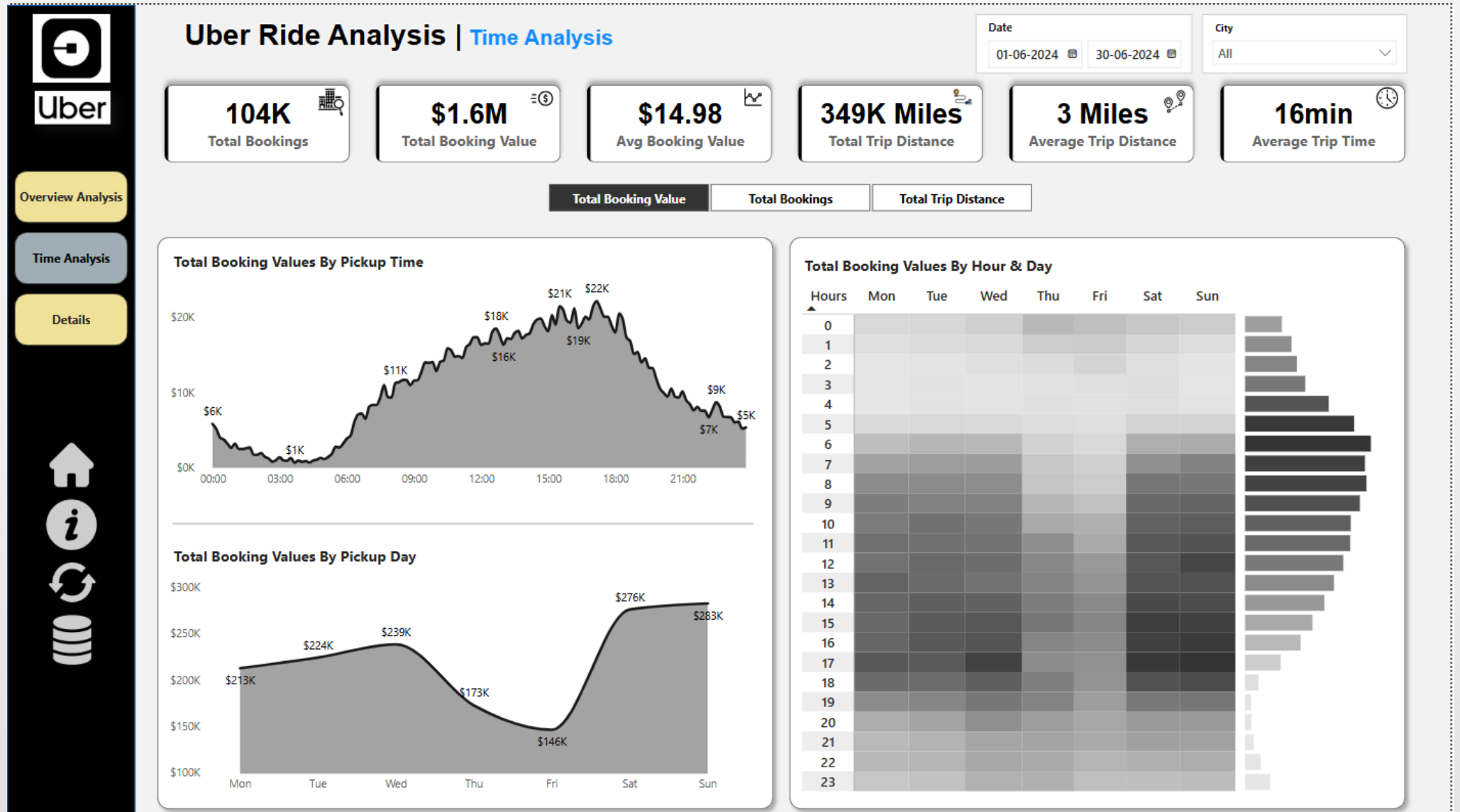
- Shows booking trends across **Monday to Sunday**.
- Useful for analysing weekday vs. weekend demand.

### By Hour and Time - Heatmap (Matrix Grid)

- **Rows:** Hours of the Day (0–23)
- **Columns:** Days of the Week (Mon-Sun)
- **Values:** Selected Dynamic Measure (e.g., Total Bookings)
- Highlights peak booking hours across different days.



## Dashboard 2 : - Time Analysis Using Power bi



## **DAHBOARD 3: DETAILS TAB**

To provide in-depth insights and allow users to explore granular data, a **Grid Tab** will be created. This tab will enable drill-through functionality, allowing users to access detailed records based on selections made in other dashboards.

### **Features of the Grid Tab:**

#### ➤ **Grid Table with Key Fields:**

- Displays essential trip details

#### ➤ **Drill-Through Functionality:**




- Users can right-click on a data point from other visuals (e.g., charts, heatmaps) and **drill through to this Grid Tab**.
- Displays detailed records related to the selected data point.

#### ➤ **Bookmark for Full Data View:**

- A "**View Full Data**" bookmark to toggle between filtered drill-through data and the complete dataset.
- Allows users to reset filters and see all records easily.



# Dashboard 3 :- Detail Tab


  
 Overview Analysis
   
 Time Analysis
   
 Details
   
  

  


## Uber Ride Analysis | Details



Trip ID	Pickup Date	Pickup Time	Pickup Location	Dropoff Location	Passenger Count	Total Bookings	Booking Value	Trip Distance	Vehicle	Payment_type
1	01-06-2024	00:42:50	East Village	Sunnyside	1	1	\$21.5	5.60	UberX	Uber Pay
2	01-06-2024	00:06:29	Lincoln Square East	Penn Station/Madison Sq West	1	1	\$8.0	1.72	Uber Black	Cash
3	01-06-2024	00:08:05	Sutton Place/Turtle Bay North	Upper West Side North	1	1	\$13.0	3.41	Uber Black	Cash
4	01-06-2024	00:28:20	Prospect-Lefferts Gardens	Brownsville	1	1	\$9.0	1.81	UberX	Cash
5	01-06-2024	00:38:05	Garment District	Kips Bay	1	1	\$8.0	1.89	Uber Black	Cash
6	01-06-2024	00:06:00	Central Harlem	Lincoln Square West	6	1	\$14.0	3.29	UberX	Cash
7	01-06-2024	00:40:41	Lincoln Square East	Lenox Hill West	2	1	\$8.5	2.05	UberX	Cash
8	01-06-2024	00:32:01	Clinton East	East Harlem South	2	1	\$12.5	3.54	Uber Comfort	Cash
9	01-06-2024	00:20:27	Clinton East	West Chelsea/Hudson Yards	1	1	\$5.5	1.10	Uber Green	Cash
10	01-06-2024	00:54:40	Lenox Hill East	Times Sq/Theatre District	2	1	\$11.6	1.90	UberX	Uber Pay
11	01-06-2024	00:18:51	Clinton East	Central Harlem North	1	1	\$28.5	6.66	UberXL	Uber Pay
12	01-06-2024	00:17:18	Kips Bay	Parkchester	2	1	\$36.5	13.12	Uber Comfort	Uber Pay
13	01-06-2024	00:00:31	JFK Airport	Prospect Heights	1	1	\$37.0	12.59	Uber Green	Cash
14	01-06-2024	00:21:51	Clinton East	Lincoln Square East	1	1	\$5.5	1.10	UberXL	Cash
15	01-06-2024	00:29:31	Morningside Heights	Lower East Side	1	1	\$27.0	9.00	UberX	Cash
16	01-06-2024	00:46:55	Kips Bay	Lenox Hill East	1	1	\$10.4	2.12	Uber Black	Uber Pay
17	01-06-2024	00:46:26	Midtown North	East Village	1	1	\$13.0	3.00	UberXL	Uber Pay
18	01-06-2024	00:14:47	Greenwich Village South	Seaport	1	1	\$14.6	3.10	Uber Comfort	Uber Pay
19	01-06-2024	00:42:52	East Williamsburg	Murray Hill	1	1	\$21.3	5.63	UberXL	Uber Pay
20	01-06-2024	00:20:49	Clinton East	Union Sq	1	1	\$8.6	1.53	Uber Green	Uber Pay
21	01-06-2024	00:44:00	Fort Greene	Prospect Heights	1	1	\$8.5	1.70	Uber Comfort	Cash
22	01-06-2024	00:04:52	Penn Station/Madison Sq West	Williamsburg (North Side)	1	1	\$25.5	5.80	UberXL	Uber Pay
23	01-06-2024	00:50:26	Penn Station/Madison Sq West	Greenwich Village South	1	1	\$10.5	2.50	Uber Comfort	Uber Pay
24	01-06-2024	00:03:50	Clinton East	Seaport	1	1	\$21.2	4.59	Uber Comfort	Uber Pay
26	01-06-2024	00:02:46	East Village	Gramercy	1	1	\$7.0	1.08	UberX	Cash
Total					146478	103728	\$15,53,672.8	3,48,933.81		

# POWER BI PROJECT DATASET RESOURCE

## **Project Resource: -**

GitHub Project Link: <https://github.com/SUNIL7978/Power-Bi-Uber-Trip-Analysis>

## **Profile Link: -**

LinkedIn Profile : <https://www.linkedin.com/in/sunil-kumar-prusty-5b0591343/>

GitHub Profile : <https://github.com/SUNIL7978>

Mail Id : [sunilprusty16@gmail.com](mailto:sunilprusty16@gmail.com)

Contact : +918908676533

**Thank You**