

BUSINESS REQUIREMENT

UBER TRIP ANALYSIS

DAHBOARD 1: OVERVIEW ANALYSIS

Analyse Uber trip data using Power BI to gain insights into booking trends, revenue, and trip efficiency, helping stakeholders make data-driven decisions.

Calculations:

1. **Total Bookings** – How many trips were booked over a given period?
2. **Total Booking Amount** – What is the total revenue generated from all bookings?
3. **Average Booking Amount** – What is the average revenue per booking?
4. **Total Trip Distance** – What is the total distance covered by all trips?
5. **Average Trip Distance** – How far are customers traveling on average per trip?
6. **Average Trip Time** – What is the average duration of trips?

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 Calculations.
- **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.
- **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.

➤ Farthest Trip

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

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.

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.

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 Hour and Time - 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.

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.

Calculations used:

Measure(s)

Table Name	Measure Name	Expression
trip details	Total Bookings	COUNT('Trip Details'[Trip ID])
trip details	Total Booking Amount	SUM('Trip Details'[fare_amount])+SUM('Trip Details'[Surge Fee])
trip details	avg booking amount	DIVIDE([Total Booking Amount],[Total Bookings],BLANK())
trip details	total trip distance	var totalmiles = SUM('Trip Details'[trip_distance])/1000 return CONCATENATE(FORMAT(totalmiles,"0,0"),"K miles")

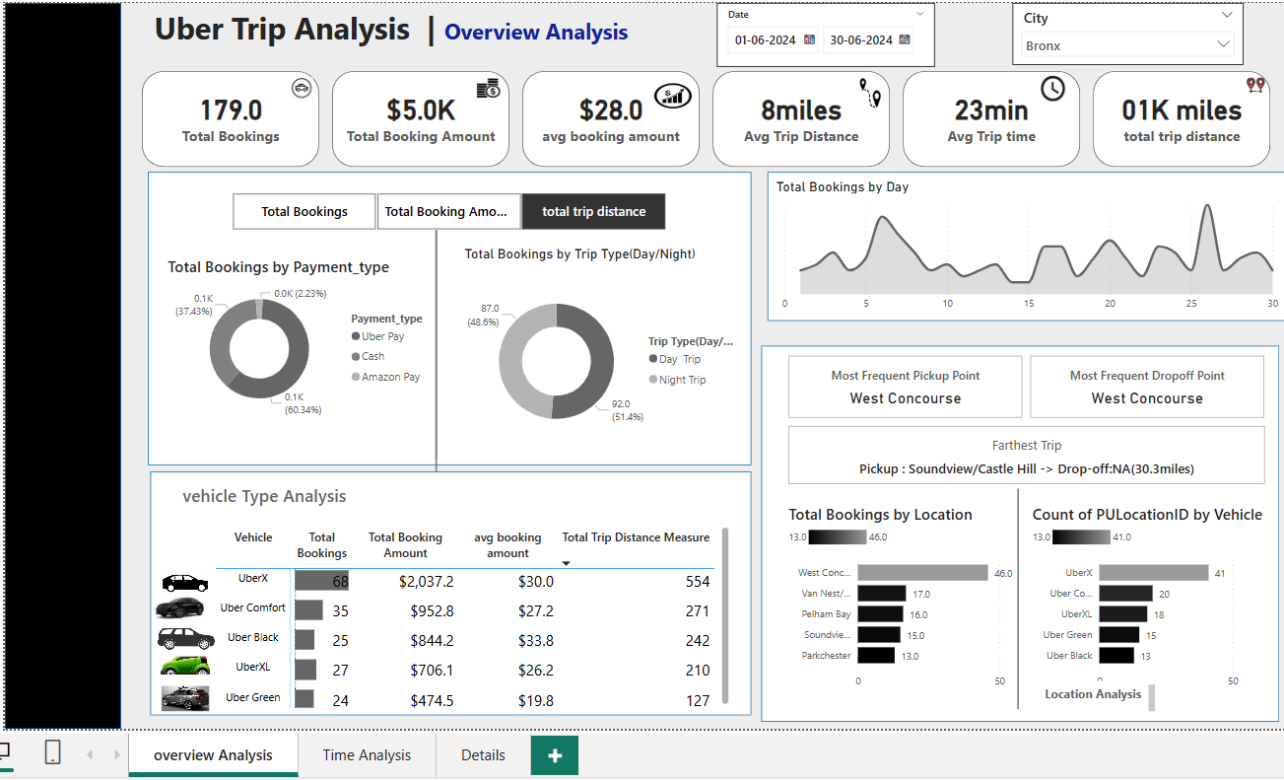
Table Name	Measure Name	Expression
trip details	Avg Trip Distance	var Avgmiles = ROUND(AVERAGE('Trip Details'[trip_distance]), 0) RETURN CONCATENATE(Avgmiles, "miles")
trip details	Avg Trip time	VAR AvgTime = AVERAGEX('Trip Details',DATEDIFF('Trip Details'[Pickup Time],'Trip Details'[Drop Off Time],MINUTE)) return CONCATENATE(FORMAT(AvgTime,"0"),"min")
trip details	Total Trip Distance Measure	SUM('Trip Details'[trip_distance])
trip details	Title for Grid	"vehicle Type Analysis"
trip details	Most Frequent Pickup Point	,VAR PickupPoint = , TOPN(, 1,, SUMMARIZE(, 'Trip Details',, 'Location Table'[Location],, 'PickupCount', COUNT('Trip Details'[Trip ID]),),, [PickupCount],, DESC,),,RETURN , CONCATENATEX(PickupPoint, 'Location Table'[Location], ", "),
trip details	Most Frequent Dropoff Point	,VAR DropOffCounts = , ADDCOLUMNS(, SUMMARIZE('Location Table', 'Location Table'[Location], 'Location Table'[LocationID]),, "DropOffCounts", , CALCULATE(, COUNT('Trip Details'[Trip ID]),, USERELATIONSHIP('Trip Details'[DOLocationID], 'Location Table'[LocationID]),),),,VAR RankedDropoffs = , ADDCOLUMNS(, DropOffCounts,, "Rank", , RANKX(DropOffCounts, [DropOffCounts],, DESC, DENSE),),,VAR TopDropoff =, FILTER(RankedDropoffs, [Rank] = 1),,RETURN , CONCATENATEX(TopDropoff, 'Location Table'[Location], ", "),
trip details	Farthest 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)"
trip details	Title for by Pickup Time	SELECTEDVALUE('Dynamic Measure'[Dynamic Title]) & "Pickup Time"
trip details	Title for by Dropoff Time	SELECTEDVALUE('Dynamic Measure'[Dynamic Title]) & "Dropoff Time"

Calculated Column(s)

Table Name	Column Name	Expression
Trip Details	pickupdate	DATE(YEAR('Trip Details'[Pickup Time]),MONTH('Trip Details'[Pickup Time]),day('Trip Details'[Pickup Time]))
Trip Details	Trip Type(Day/Night)	VAR HourofDay = HOUR('Trip Details'[Pickup Time]) return IF(HourofDay>=17 HourofDay<6 , "Night Trip" , "Day Trip")
Trip Details	Pickup Hour (HH MM SS)	TIME(HOUR('Trip Details'[Pickup Time]),MINUTE('Trip Details'[Pickup Time]),SECOND('Trip Details'[Pickup Time]))
Trip Details	Pickup Hour (HH MM SS) (bins)	IF(, ISBLANK('Trip Details'[Pickup Hour (HH MM SS)]),, BLANK(),, (INT(('Trip Details'[Pickup Hour (HH MM SS)] * 1440) / 10) * 10) / 1440,)
Trip Details	Pickup Hour (HH MM SS) (bins) 2	IF(, ISBLANK('Trip Details'[Pickup Hour (HH MM SS)]),, BLANK(),, (INT(('Trip Details'[Pickup Hour (HH MM SS)] * 1440) / 10) * 10) / 1440,)
Trip Details	Drop Off Hour	TIME(HOUR('Trip Details'[Drop Off Time]),MINUTE('Trip Details'[Drop Off Time]),SECOND('Trip Details'[Drop Off Time]))
Trip Details	Drop Off Hour (bins)	IF(, ISBLANK('Trip Details'[Drop Off Hour]),, BLANK(),, (INT(('Trip Details'[Drop Off Hour] * 1440) / 10) * 10) / 1440,)
Trip Details	pickuphour	HOUR('Trip Details'[Pickup Time])
calender table	Day Name	FORMAT('calender table'[Date],"ddd")
calender table	Day Num	WEEKDAY('calender table'[Date],2)

Table Name	Column Name	Expression
Dynamic Measure	Dynamic Title	IF ('Dynamic Measure'[Dynamic Measure Order] = 0 , "Total Bookings" ,IF('Dynamic Measure'[Dynamic Measure Order]=1,"Total Booking Value",IF('Dynamic Measure'[Dynamic Measure Order]=2,"Total Trip Distance", "Other")))

Result:



Uber Trip Analysis | Details



Trip ID	pickupdate	Pickup Hour	Vehicle	Payment_type	no of passengers	total trip distance	Total Booking Amount	Location	Total Bookings
103565	28 June 2024	10:50:50	UberX	Uber Pay	1	144.10	\$563.8	Lower East Side	1.0
14781	05 June 2024	17:04:56	UberX	Uber Pay	1	125.50	\$403.0	Penn Station/Madison Sq West	1.0
32353	11 June 2024	10:17:39	Uber Black	Uber Pay	1	62.40	\$245.9	Midtown East	1.0
88894	25 June 2024	10:11:52	Uber Green	Uber Pay	1	61.37	\$258.1	Midtown East	1.0
43342	14 June 2024	14:07:19	UberX	Uber Pay	1	51.20	\$231.0	JFK Airport	1.0
111181	29 June 2024	21:46:38	Uber Green	Uber Pay	1	47.09	\$124.3	Charleston/Tottenville	1.0
58035	18 June 2024	10:03:08	UberXL	Uber Pay	1	46.32	\$189.1	Midtown East	1.0
93151	25 June 2024	22:24:55	UberX	Uber Pay	1	45.91	\$126.8	Charleston/Tottenville	1.0
78275	23 June 2024	09:59:37	UberX	Uber Pay	1	45.47	\$239.5	Midtown East	1.0
80339	23 June 2024	15:55:35	UberX	Uber Pay	1	44.61	\$120.3	Rossville/Woodrow	1.0
48182	15 June 2024	19:09:06	Uber Comfort	Uber Pay	1	42.91	\$76.3	Jamaica Bay	1.0
93431	26 June 2024	01:34:22	Uber Green	Uber Pay	1	42.00	\$112.8	Charleston/Tottenville	1.0
84095	24 June 2024	11:13:24	UberXL	Uber Pay	1	41.67	\$112.8	Cambria Heights	1.0
112591	30 June 2024	09:59:42	UberXL	Uber Pay	1	39.98	\$183.0	Midtown East	1.0
38935	12 June 2024	20:31:36	UberX	Uber Pay	1	39.34	\$107.8	Charleston/Tottenville	1.0
87655	24 June 2024	22:44:23	UberX	Uber Pay	1	39.09	\$104.8	Cambria Heights	1.0
86409	24 June 2024	17:00:06	UberX	Uber Pay	1	38.47	\$108.3	Far Rockaway	1.0
47177	15 June 2024	15:19:02	Uber Green	Uber Pay	2	38.11	\$82.1	LaGuardia Airport	1.0
5591	02 June 2024	17:14:42	Uber Green	Uber Pay	1	38.09	\$100.0	LaGuardia Airport	1.0
79715	23 June 2024	14:56:14	UberX	Uber Pay	1	38.01	\$196.9	Midtown East	1.0
79961	23 June 2024	14:17:11	Uber Comfort	Uber Pay	1	37.67	\$110.8	NA	1.0
91034	25 June 2024	15:26:34	Uber Green	Cash	1	37.38	\$96.5	JFK Airport	1.0
32045	11 June 2024	09:56:26	Uber Green	Uber Pay	1	37.06	\$186.7	Midtown East	1.0
38503	12 June 2024	18:06:30	UberX	Uber Pay	1	36.42	\$111.3	Far Rockaway	1.0
74827	22 June 2024	14:03:53	UberXL	Uber Pay	1	35.92	\$97.8	Charleston/Tottenville	1.0
114427	30 June 2024	14:28:29	UberX	Uber Pay	1	35.80	\$122.0	JFK Airport	1.0
18771	07 June 2024	10:13:56	Uber Comfort	Uber Pay	1	35.67	\$95.3	Madison	1.0
69299	20 June 2024	22:48:59	Uber Comfort	Cash	1	35.20	\$95.5	LaGuardia Airport	1.0
96615	26 June 2024	15:19:30	Uber Comfort	Uber Pay	1	35.09	\$113.0	LaGuardia Airport	1.0
26846	09 June 2024	17:39:00	UberXL	Cash	1	34.64	\$90.5	Bloomfield/Emerson Hill	1.0
4793	02 June 2024	14:24:50	UberX	Cash	1	33.80	\$100.0	Midtown North	1.0
Total					146478	3,48,933.81	\$15,53,672.8		103728.0

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overview Analysis

Time Analysis

Details

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