UBER- FOR HIRE VEHICLES IN NYC

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Introduction

- In New York City, all taxi vehicles are managed by TLC (Taxi and Limousine Commission) established in 1971.
- TLC regulates New York City's Medallion (Yellow) taxi cabs, for-hire vehicles (community-based liveries, black cars, and luxury limousines), commuter vans, and paratransit vehicles.
- Over 200,000 (2 Lakhs) TLC licensed vehicles complete approximately 1,000,000 (1 Million) trips each day.
- High-volume-for-hire vehicle bases(HVFH) are companies that dispatch 10,000+ trips per day.
- We have selected UBER for our analysis which is also an HVFH company.

UBER

Founder in 2009

70 countries

10,500 cities

131 Million active users

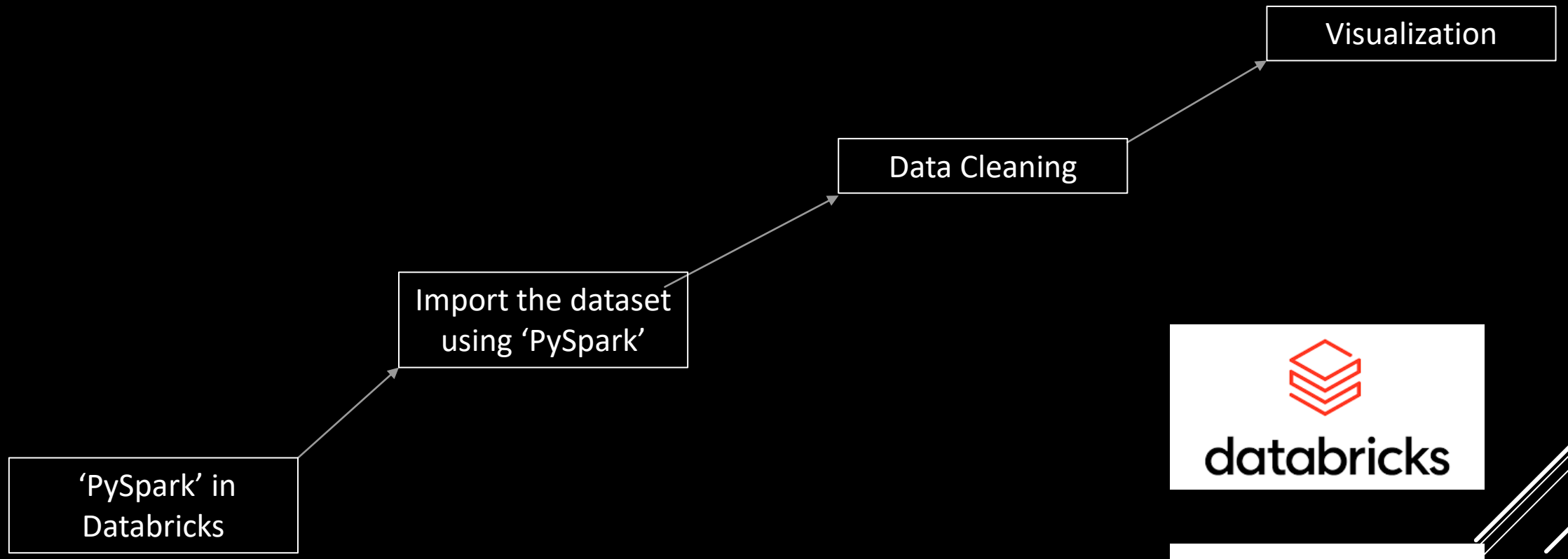
5.1 Million active drivers

23 Million trips per day

Data Set

- Data set contains trips made by UBER in 2021 in NYC.
- Taken from the Kaggle website.
- Size is 3.6 GB.
- Contains 17.45 crore entries of data with 24 columns.
- Columns include details like Pickup Time, Drop Time, Trip Miles, and Trip Time.
- Link to the Data set: https://www.kaggle.com/datasets/shuhengmo/uber-nyc-forhire-vehicles-trip-data-2021

Framework


Visualization
Data Cleaning
Import the dataset using ‘PySpark’
‘PySpark’ in Databricks
databricks
APACHE PySpark

Sample Dataset

	hvfhs_license_num	dispatching_base_num	originating_base_num	request_datetime	on_scene_datetime	pickup_datetime	dropoff_datetime	PULocatio
0	HV0003	B02682	B02682	2021-01-01 00:28:09	2021-01-01 00:31:42	2021-01-01 00:33:44	2021-01-01 00:49:07	
1	HV0003	B02682	B02682	2021-01-01 00:45:56	2021-01-01 00:55:19	2021-01-01 00:55:19	2021-01-01 01:18:21	
2	HV0003	B02764	B02764	2021-01-01 00:21:15	2021-01-01 00:22:41	2021-01-01 00:23:56	2021-01-01 00:38:05	
3	HV0003	B02764	B02764	2021-01-01 00:39:12	2021-01-01 00:42:37	2021-01-01 00:42:51	2021-01-01 00:45:50	
4	HV0003	B02764	B02764	2021-01-01 00:46:11	2021-01-01 00:47:17	2021-01-01 00:48:14	2021-01-01 01:08:42	
...	...	...	...	...	...	...	...	
11908463	HV0003	B02765	B02765	2021-01-31 23:13:51	2021-01-31 23:25:03	2021-01-31 23:25:40	2021-01-31 23:40:10	
11908464	HV0003	B02872	B02872	2021-01-31 23:23:56	2021-01-31 23:29:03	2021-01-31 23:29:31	2021-01-31 23:47:44	
11908465	HV0003	B02872	B02872	2021-01-31 23:42:53	2021-01-31 23:49:23	2021-01-31 23:49:32	2021-02-01 00:04:36	
11908466	HV0003	B02764	B02764	2021-01-31 23:04:32	2021-01-31 23:09:13	2021-01-31 23:09:29	2021-01-31 23:27:46	
11908467	HV0003	B02764	B02764	2021-01-31 23:22:20	2021-01-31 23:28:33	2021-01-31 23:28:33	2021-01-31 23:56:36	

11908468 rows × 24 columns

Expected Results

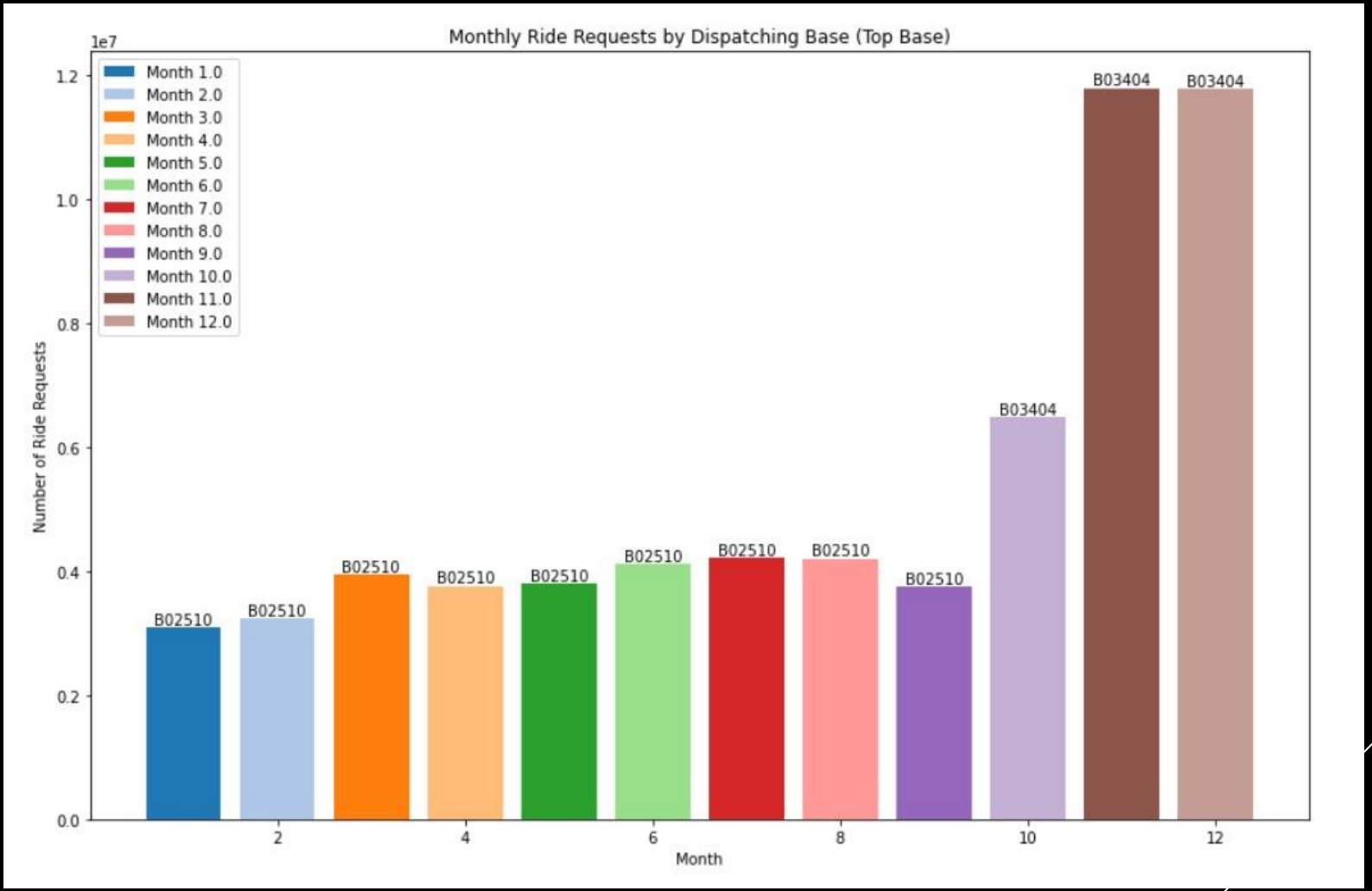
1. What time of the day do users request most taxis?
2. Average distance traveled by taxi.
3. Taxi zone where more taxis are requested.
4. Percentage of wheelchair-accessible vehicles requested.
5. Insights about shared rides.

Scope of Analysis

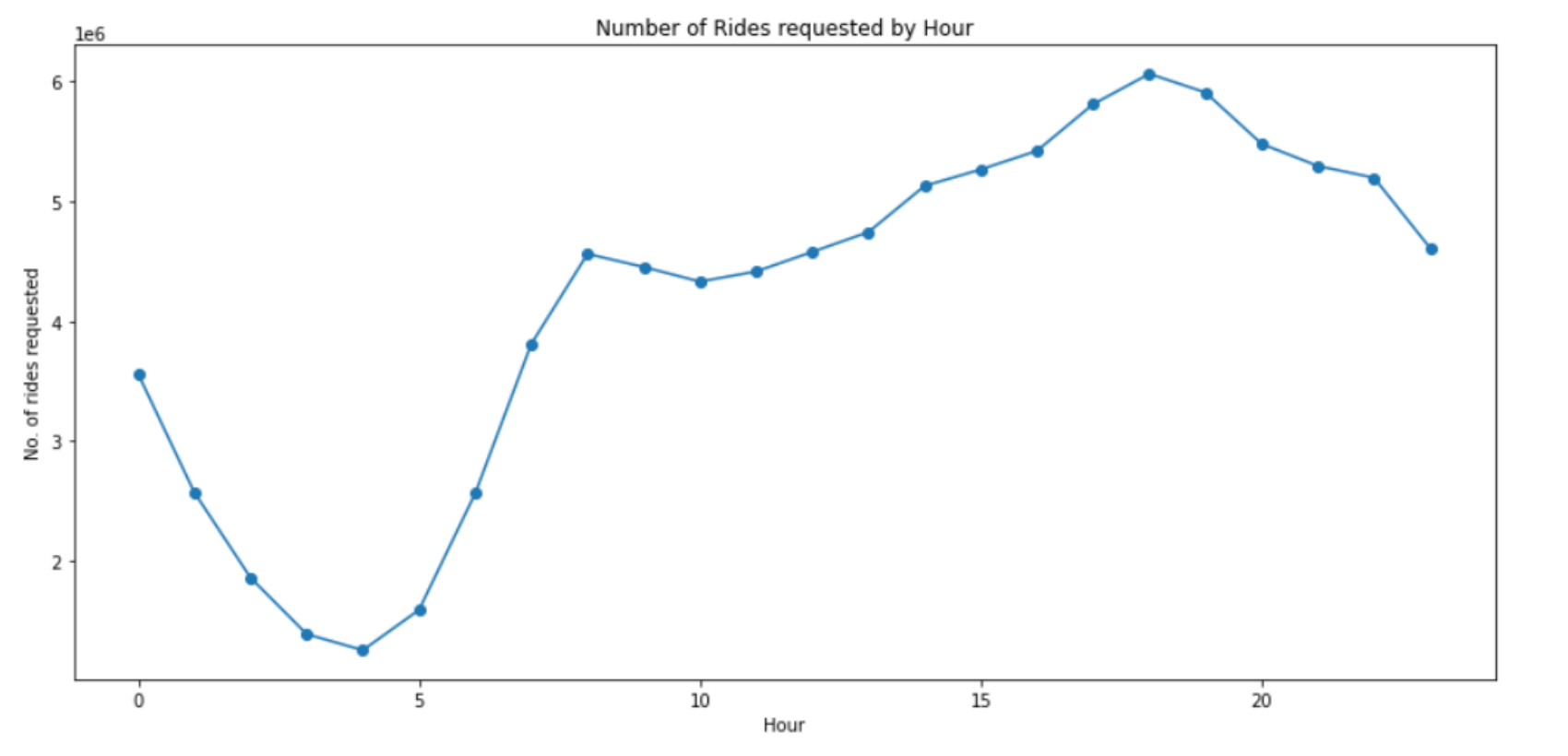
- Rides requested statistics
- Delay by UBER to pick up the customer
- Company delay per Dispatch Base
- Delay by the customer to arrive at the Pick-up location
- Customer delay per Dispatch Base

OUTCOMES OF ANALYSIS

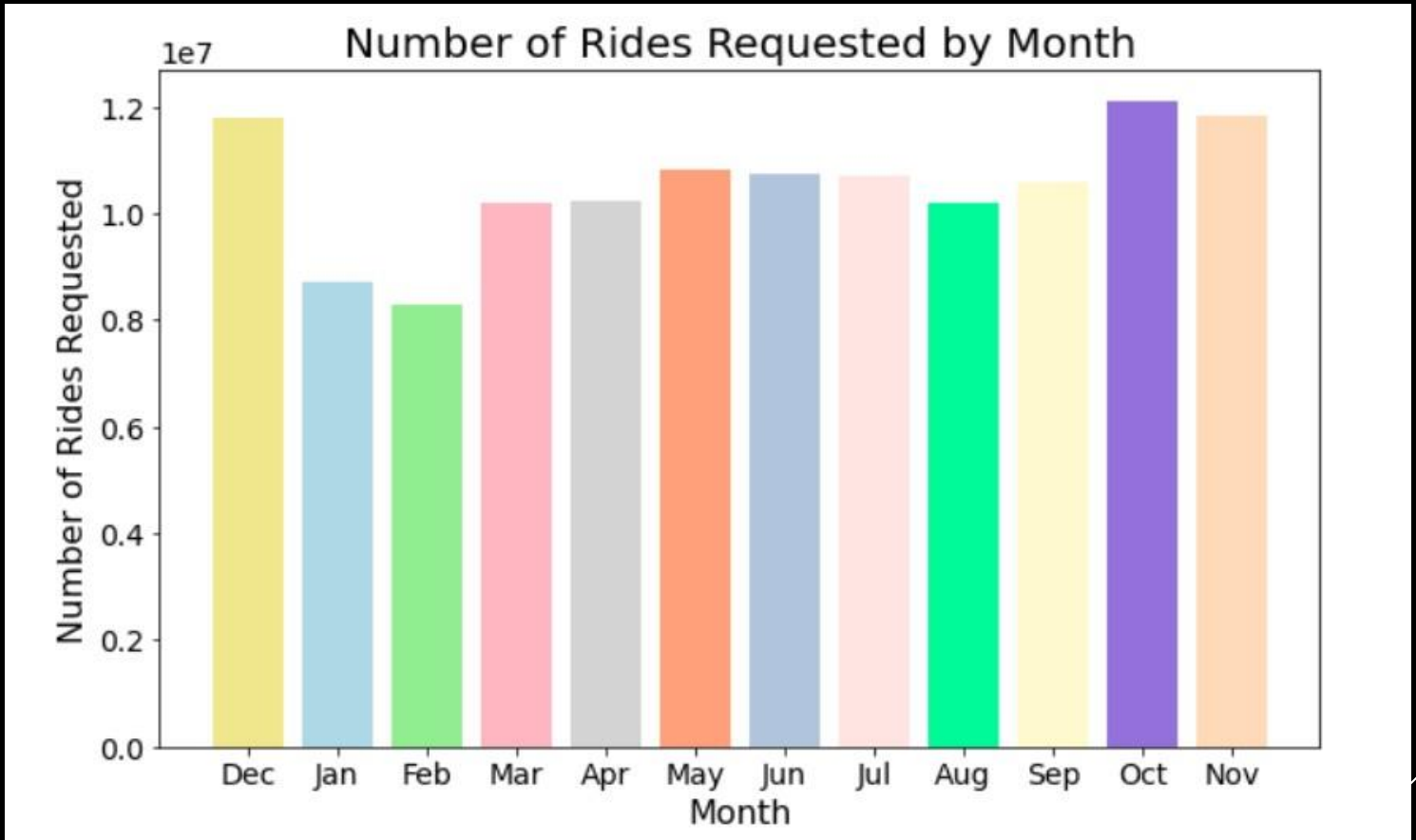
Monthly Top Dispatching Base as Per Ride Requested



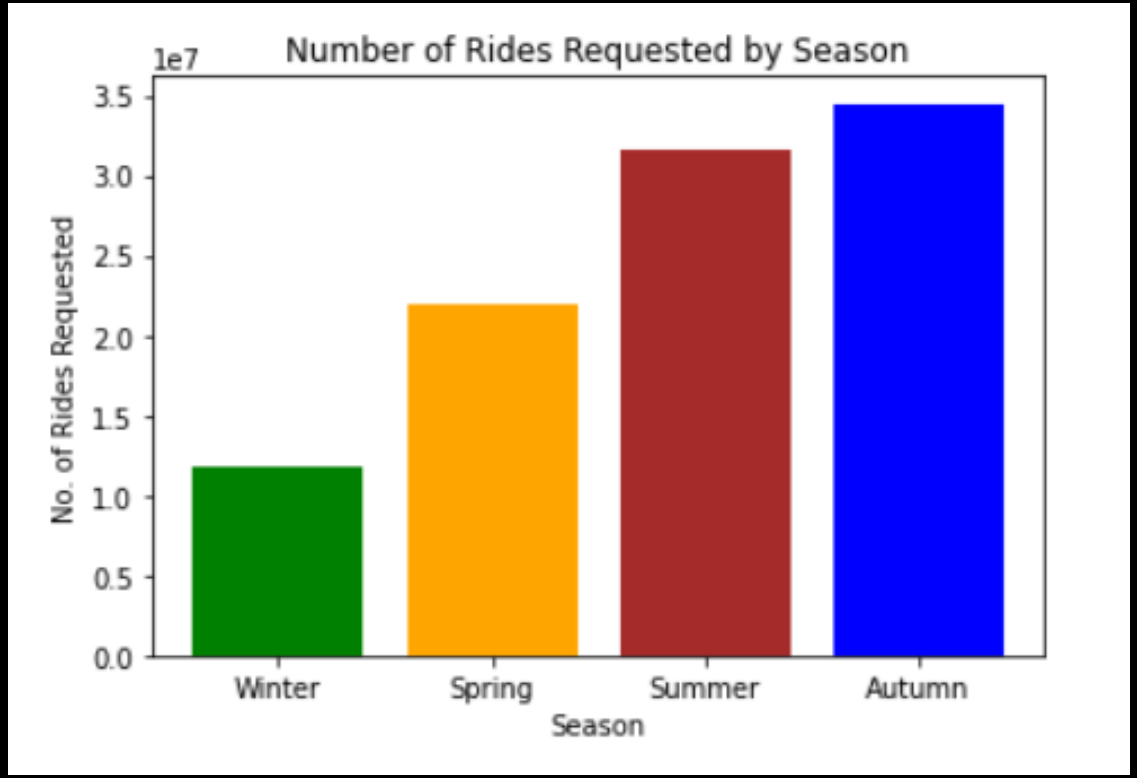
No. of Rides Requested Per Hour



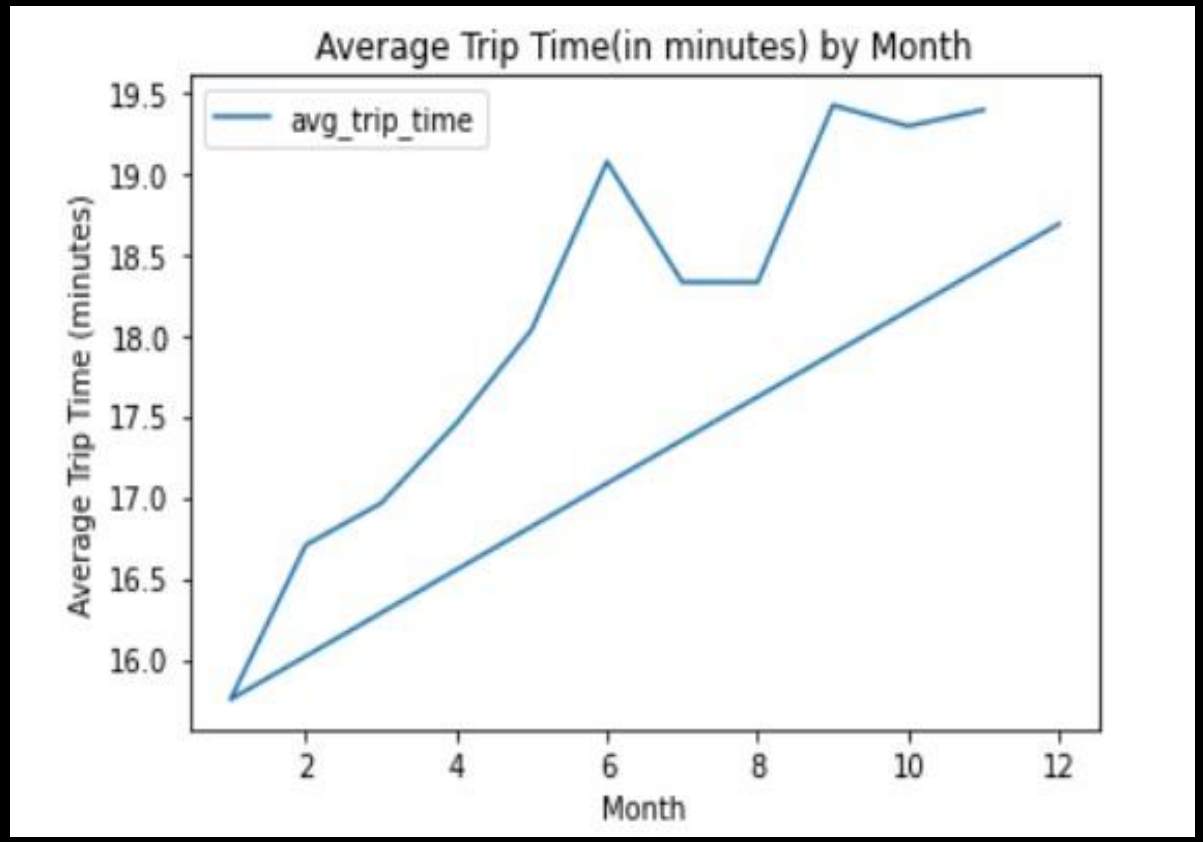
No. of Rides Requested Per Month

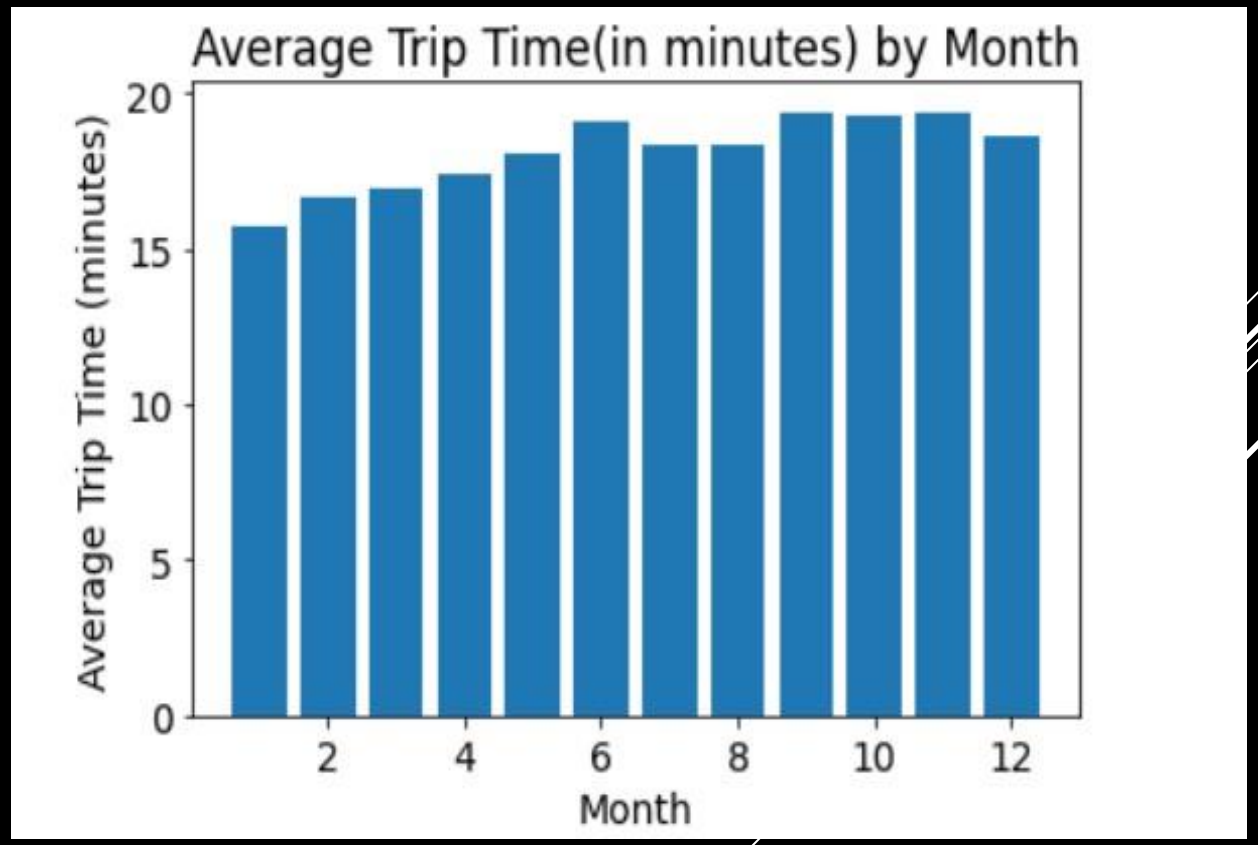


No. of Rides Requested Per Season

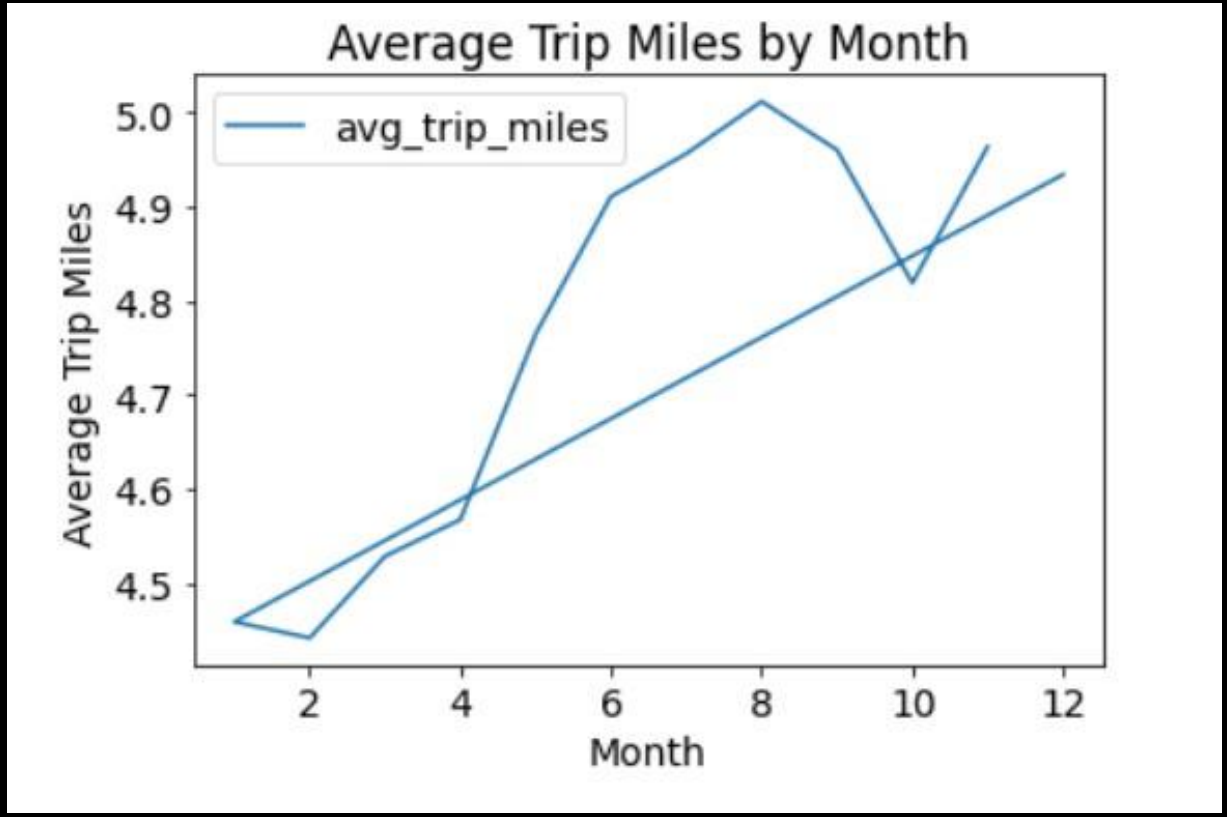


Average Trip Time(in minutes) Per MonthAverage

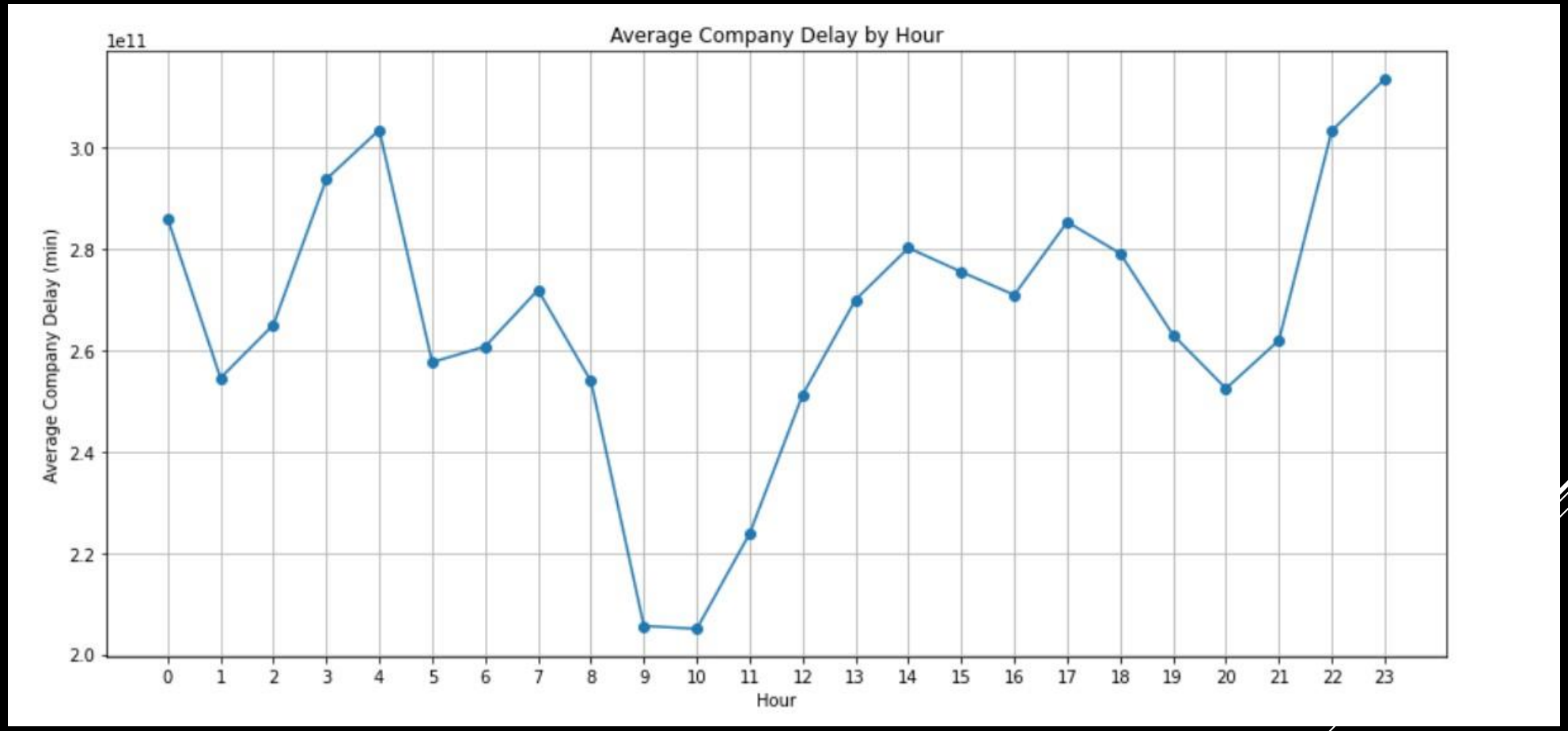




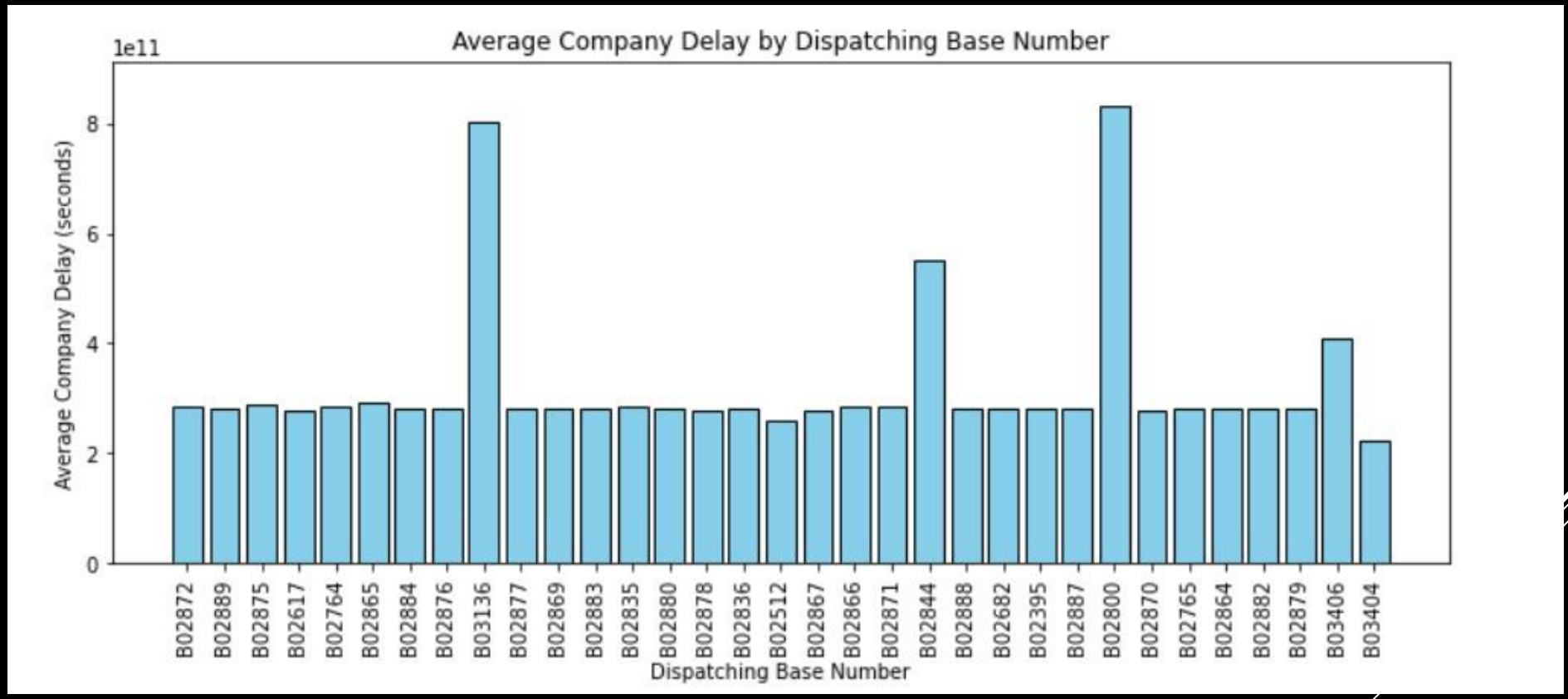
Average Trip Miles Per Month



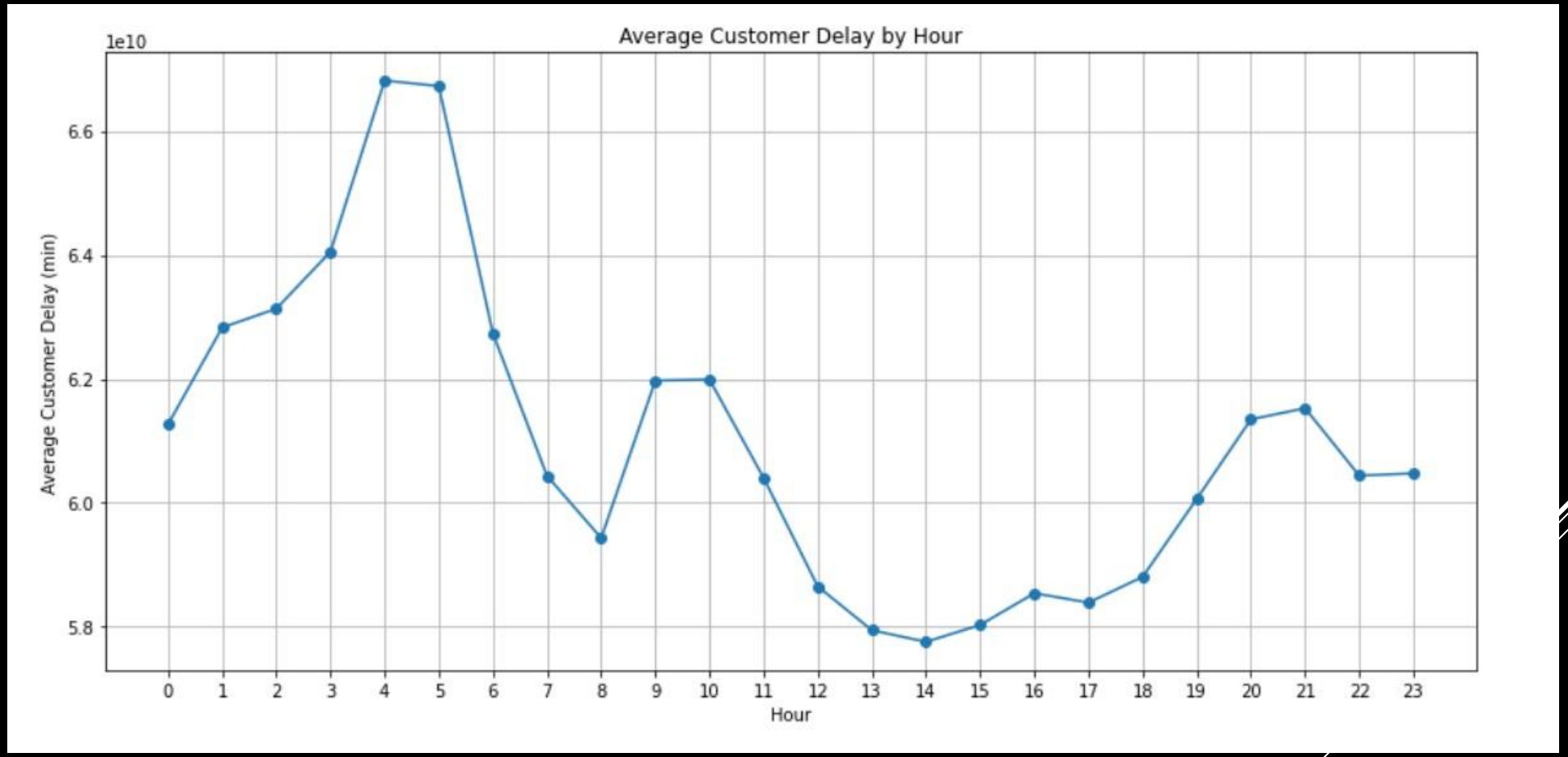
Average Company Delay Per Hour



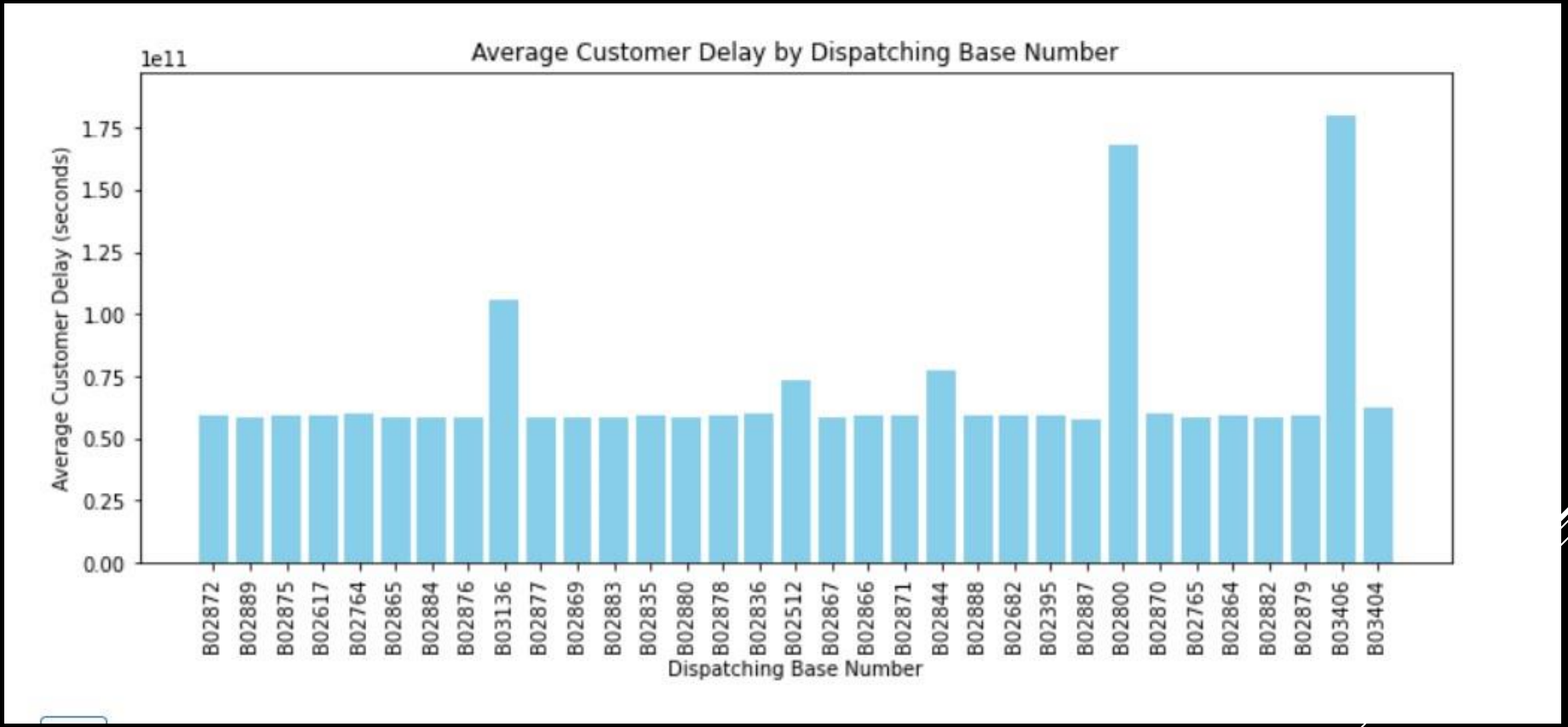
Average Company Delay Per Dispatching Base



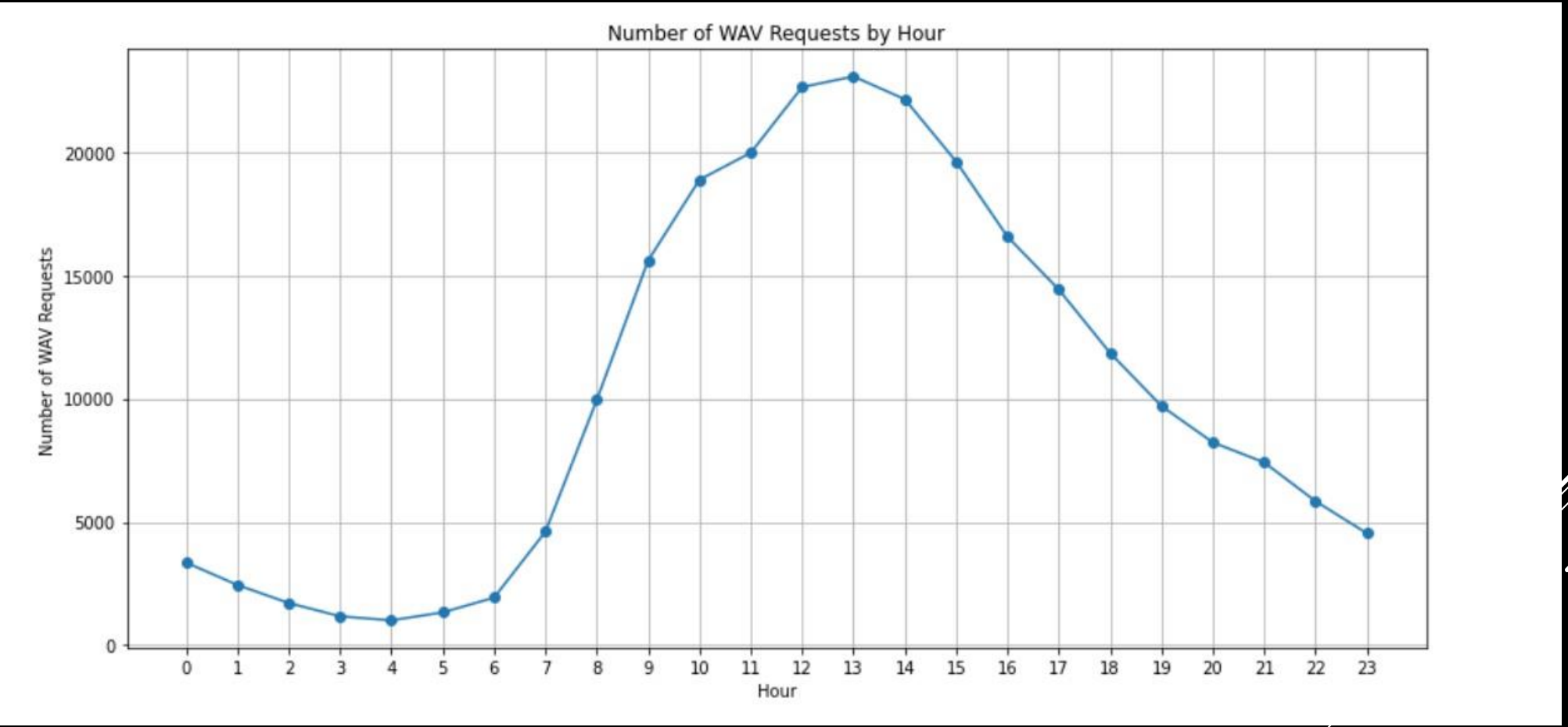
Average Customer Delay Per Hour



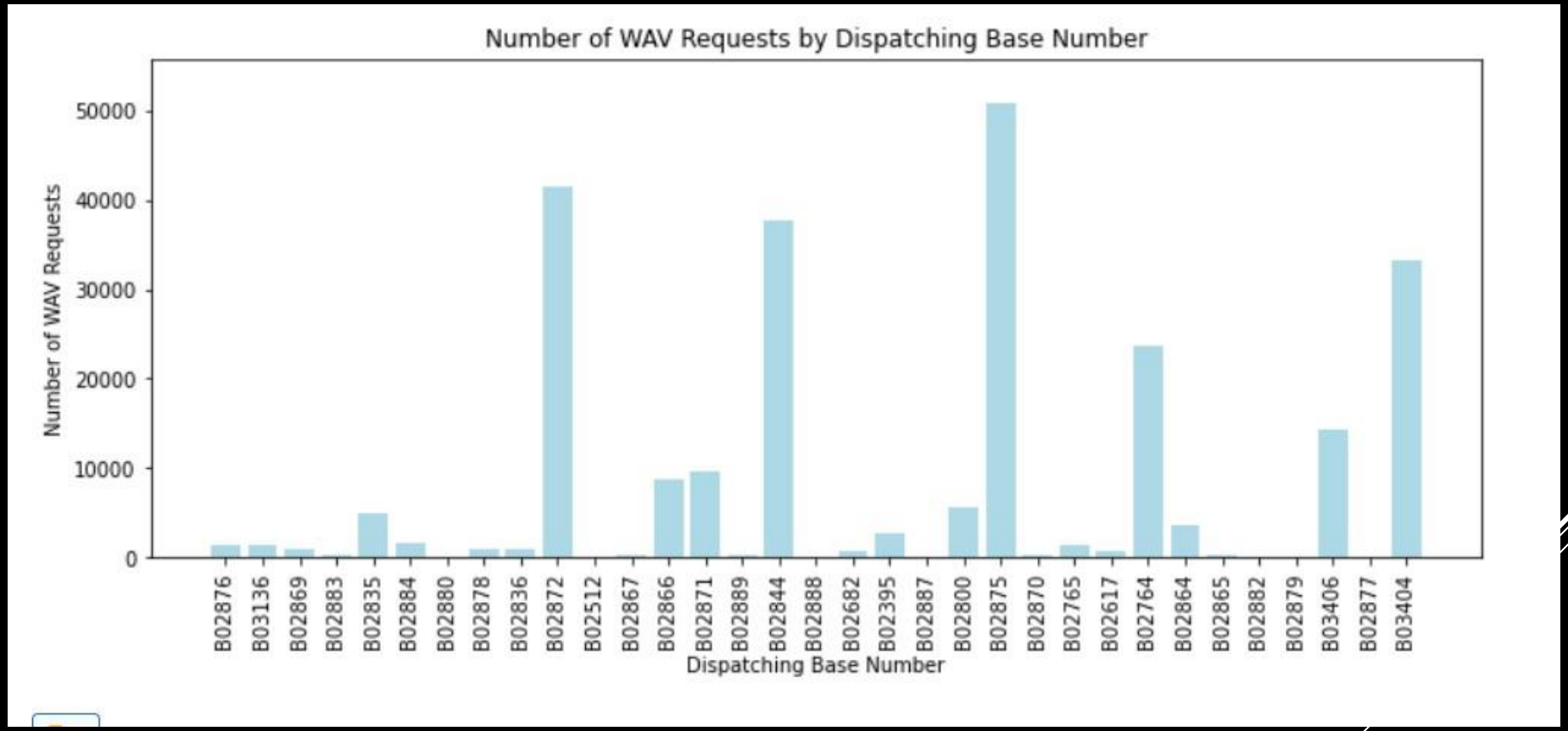
Average Customer Delay Per Dispatching Base



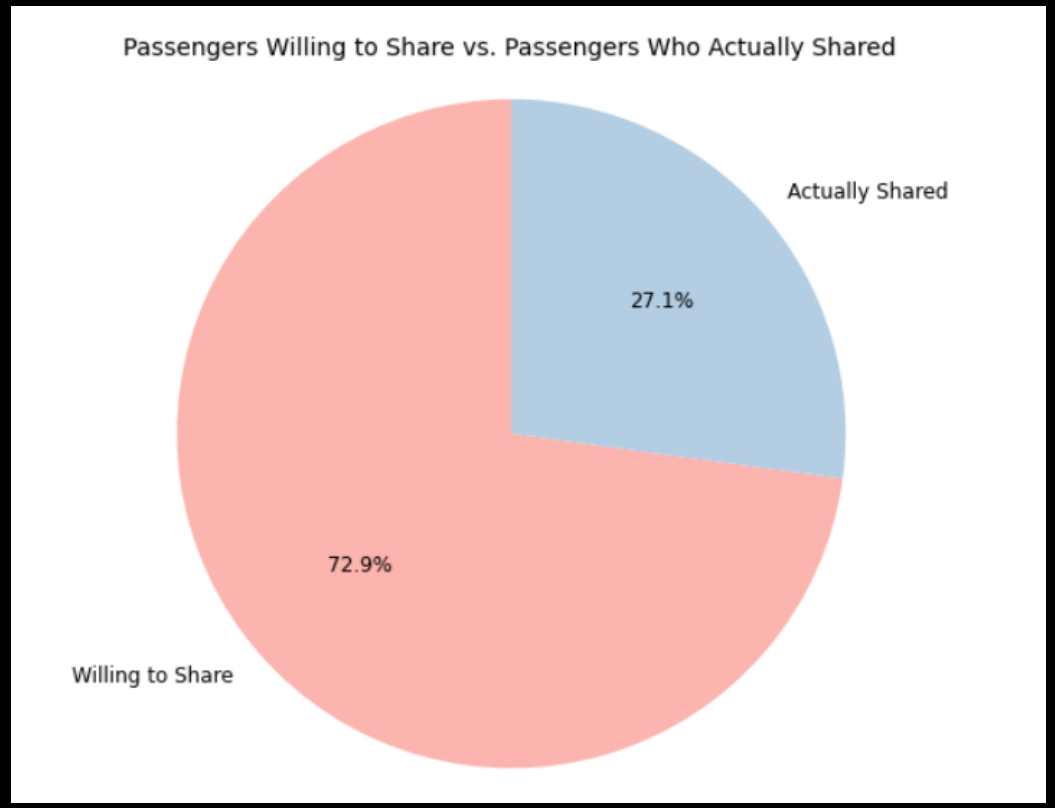
No. of Wheel-Chair Accessible Vehicles Requested Per Hour

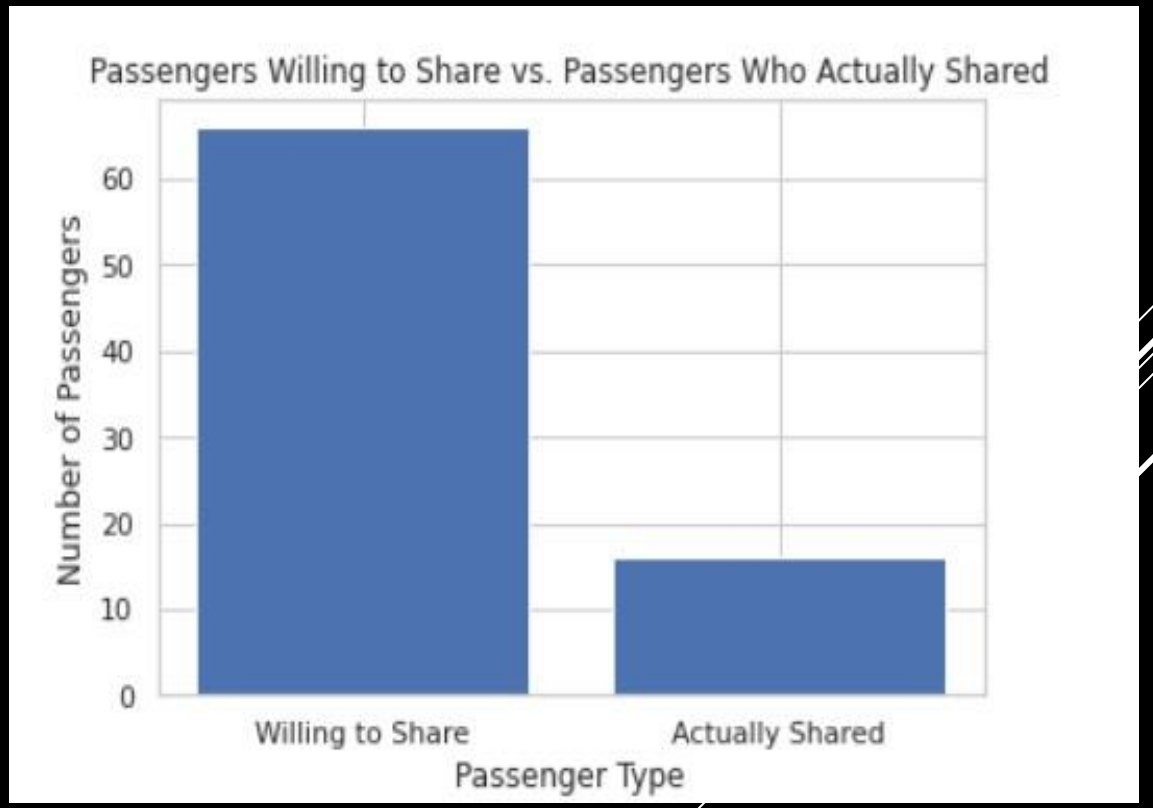


No. of Wheel-Chair Accessible Vehicles Requested Per Dispatching Base

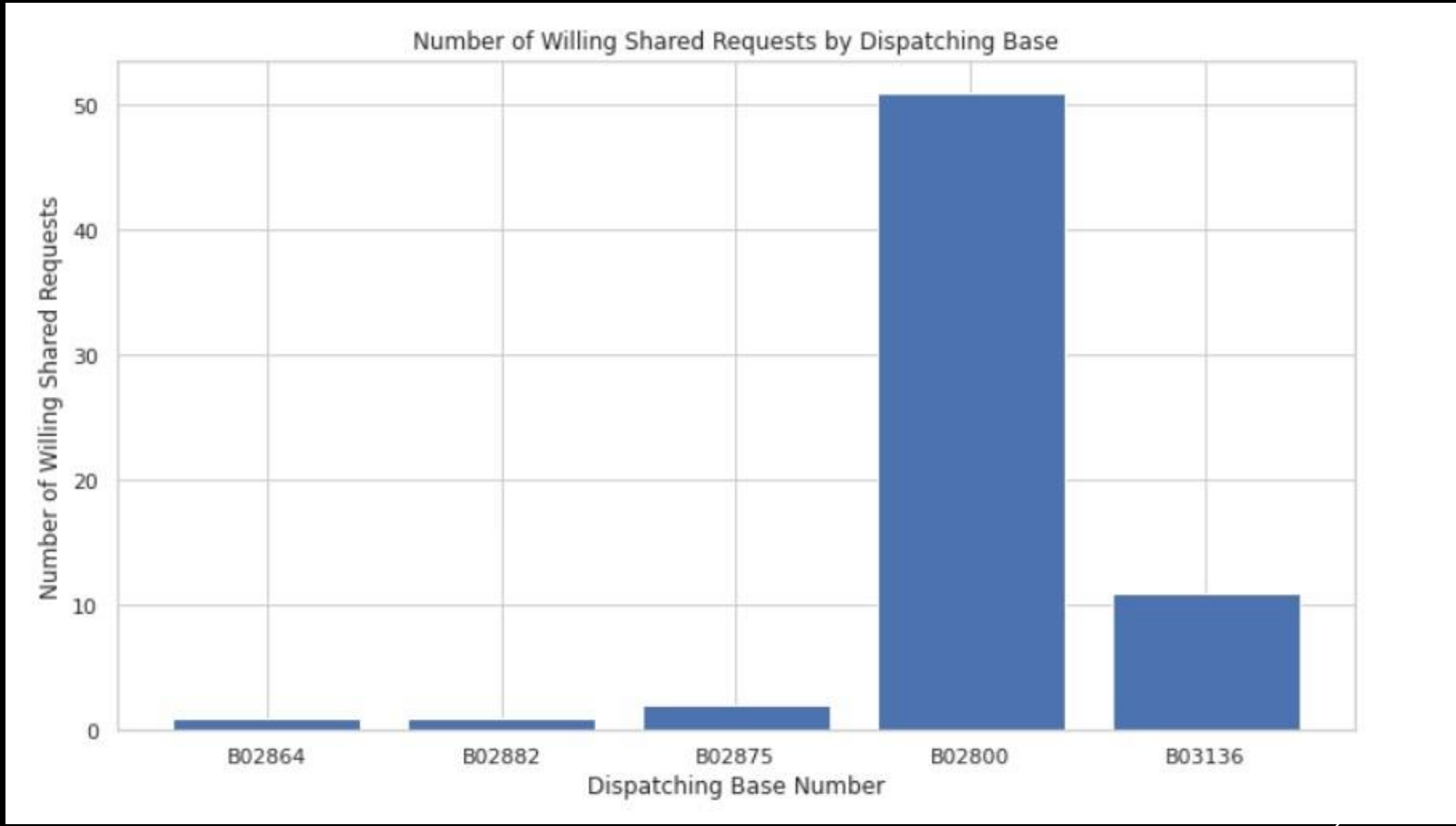


Passengers Willing to Share Ride Vs. Who Actually Shared

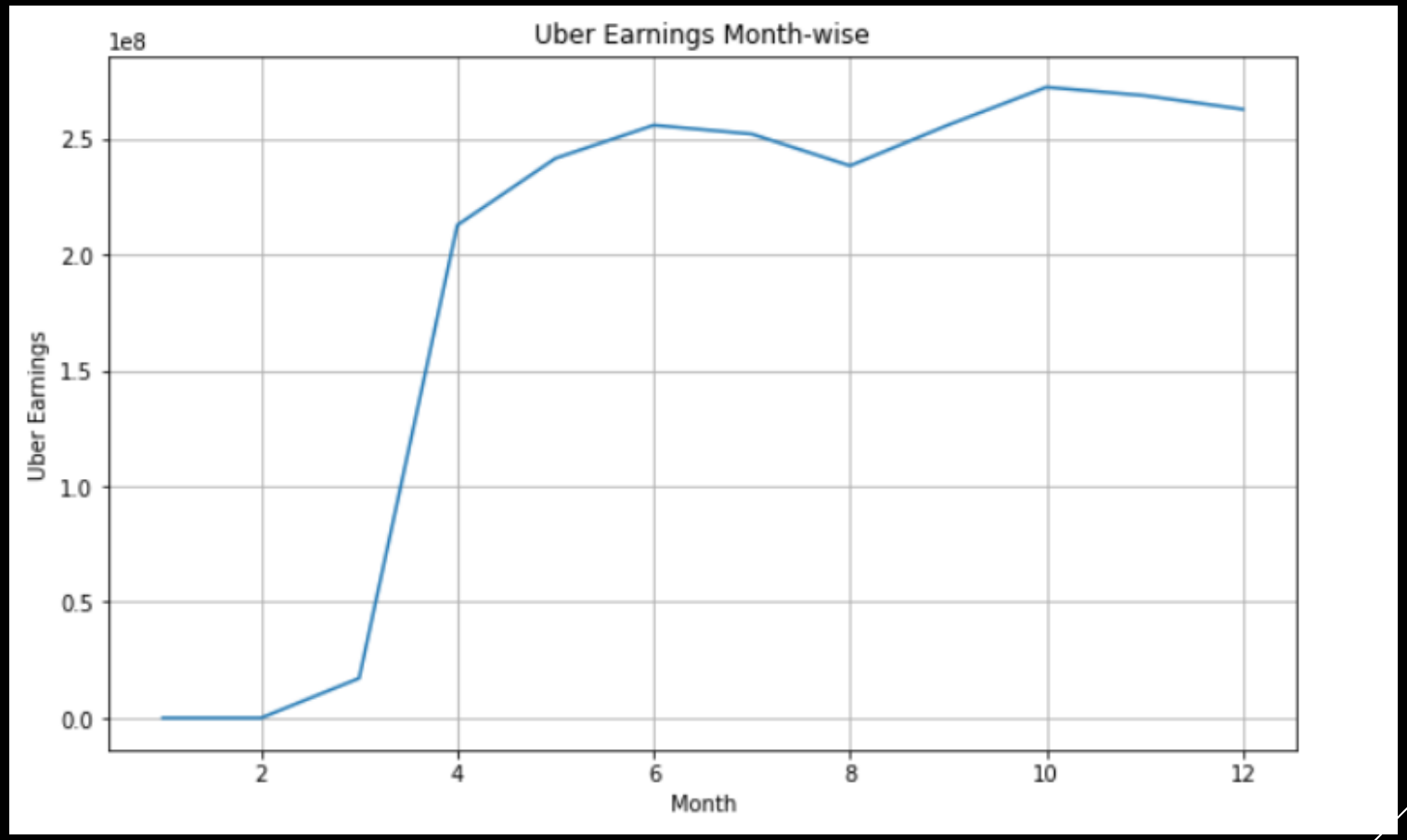




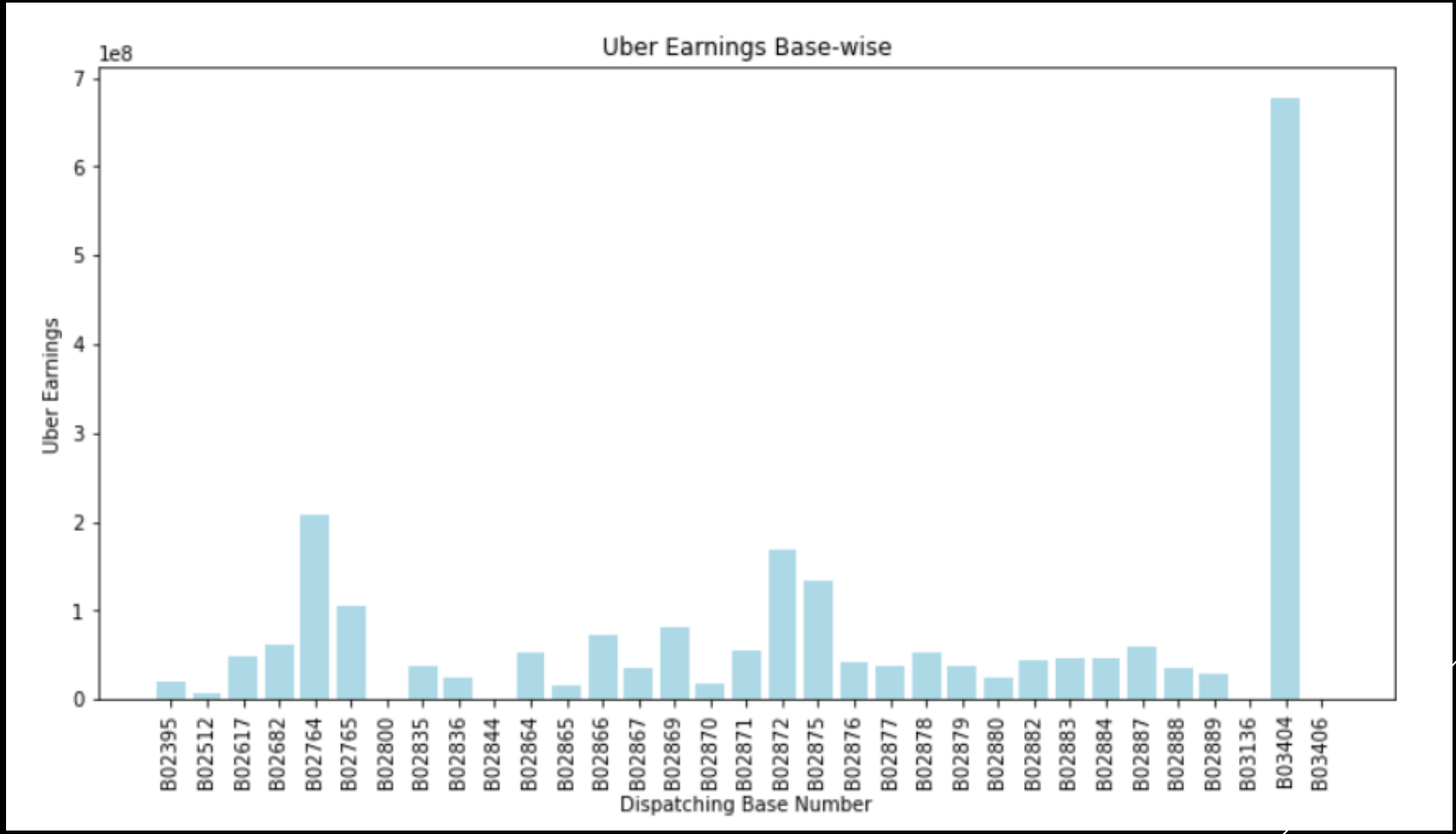
No. of Willing Shared Requests by Dispatching Base



UBER Earnings Per Month



UBER Earnings Per Dispatching Base



Benefits of Analysis

Analyze ride statics hourly, monthly, and season-wise.

Position its vehicles at the correct Dispatching Base during busy hours.

Benefits of Analysis

Analysing
Company Delay

Analyzing
customer delay

Benefits of Analysis

Planning the Maintenance of vehicles

Positioning of Wheelchair Accessible Vehicles

References

- *Uber NYC for-hire vehicles trip data (2021)*. (2023, February 2). Kaggle. https://www.kaggle.com/datasets/shuhengmo/uber-nyc-forhire-vehicles-trip-data-2021
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THANK YOU