Factors That Affect Uber Pickup Requests in New York City

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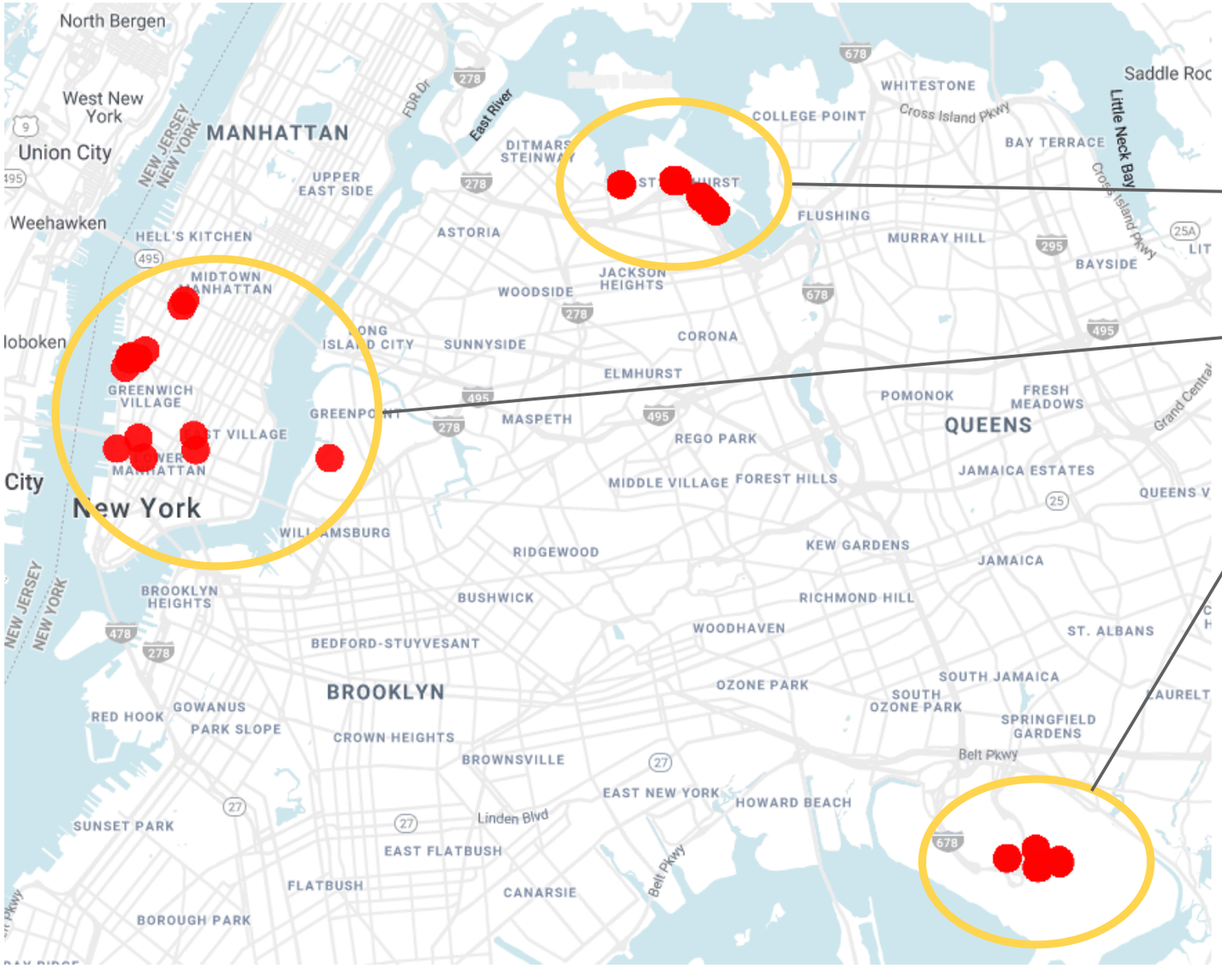
Assumption for Uber Surge Time in NYC

We assume that the most Uber pickups request would happen during the below circumstances:

Location:	• John F. Kennedy Airport • LaGuardia Airport
Month:	• August and September
Weekday:	• Friday and Weekend
Time:	• Between 5 – 7 PM
Weather:	• Raining days

Uber

Uber Surge Zones in New York



Surge Zone #1:
LaGuardia Airport

Surge Zone #2:
Mid and Lower Manhattan

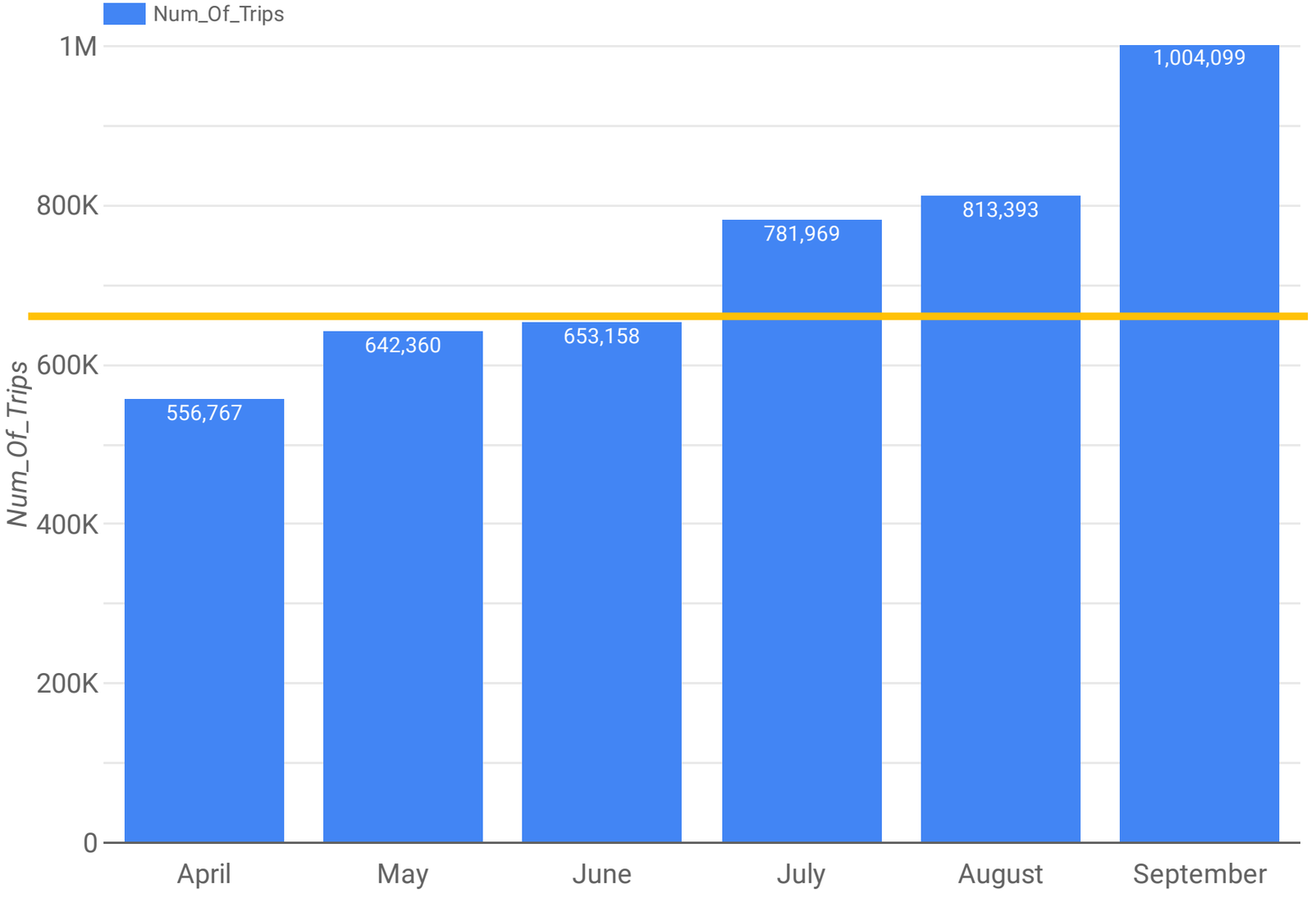
Surge Zone #3:
John F. Kennedy Airport

Tool: BigQuery Geographic Information Systems -- https://bigquerygeoviz.appspot.com/

Query:

```
SELECT
  ST_GeogPoint(Lon, Lat) AS WKT,
  count(*) AS Num_Of_Pickups
FROM
 `team-3-249220.team3.All_Data`
GROUP BY
  Lon, Lat
ORDER BY
  Num_Of_Pickups DESC
LIMIT 100
```

Q2 and Q3 Monthly Uber Pickups in New York City

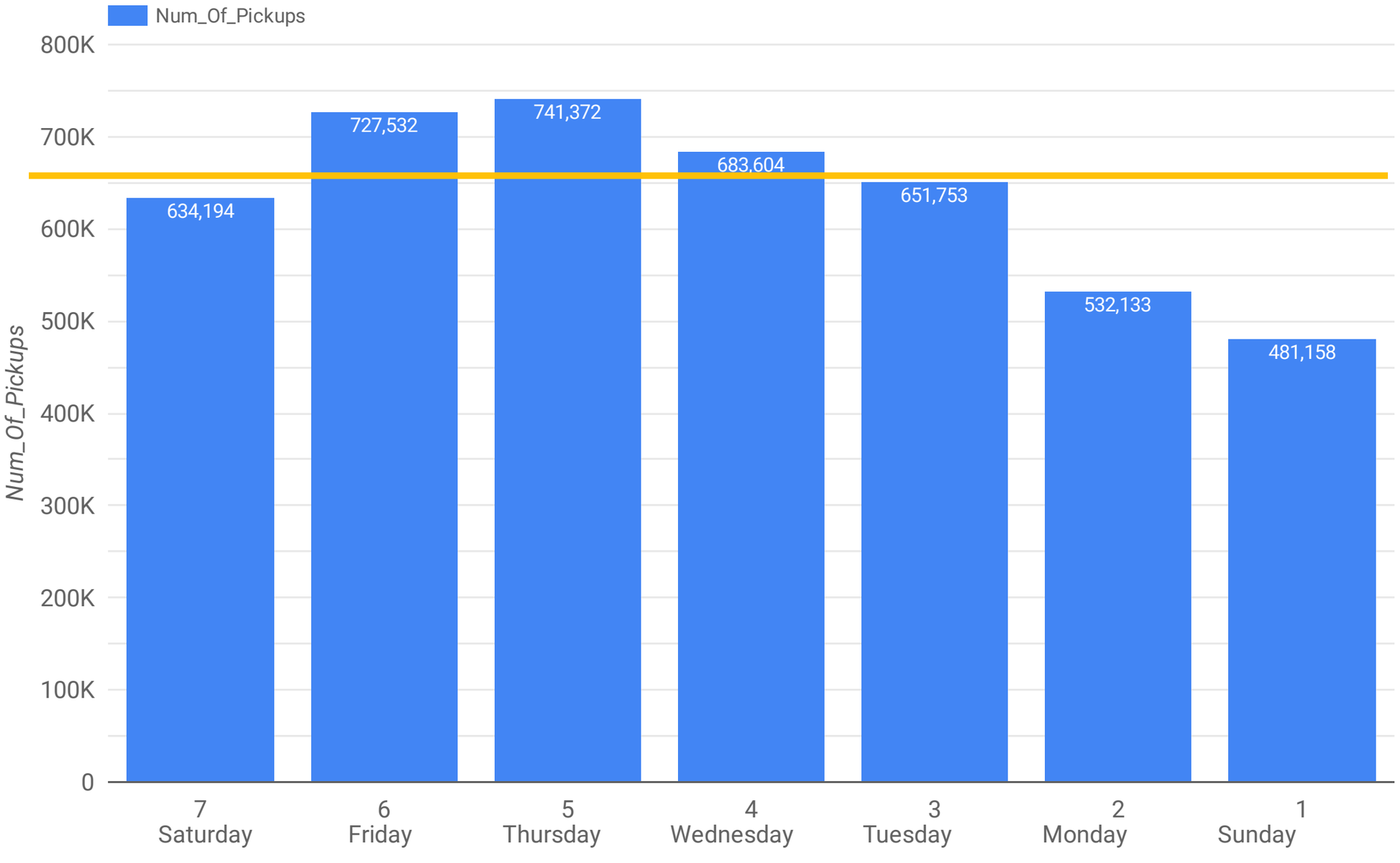


Top 3 busiest Month:

- September
- August
- July

Daily Uber Pickup Requests In A Week

- **Thursday** is the busiest day in a week with most Uber pickup requests
- Is WEEKDAY one of the factors that affect Uber Pickup requests?

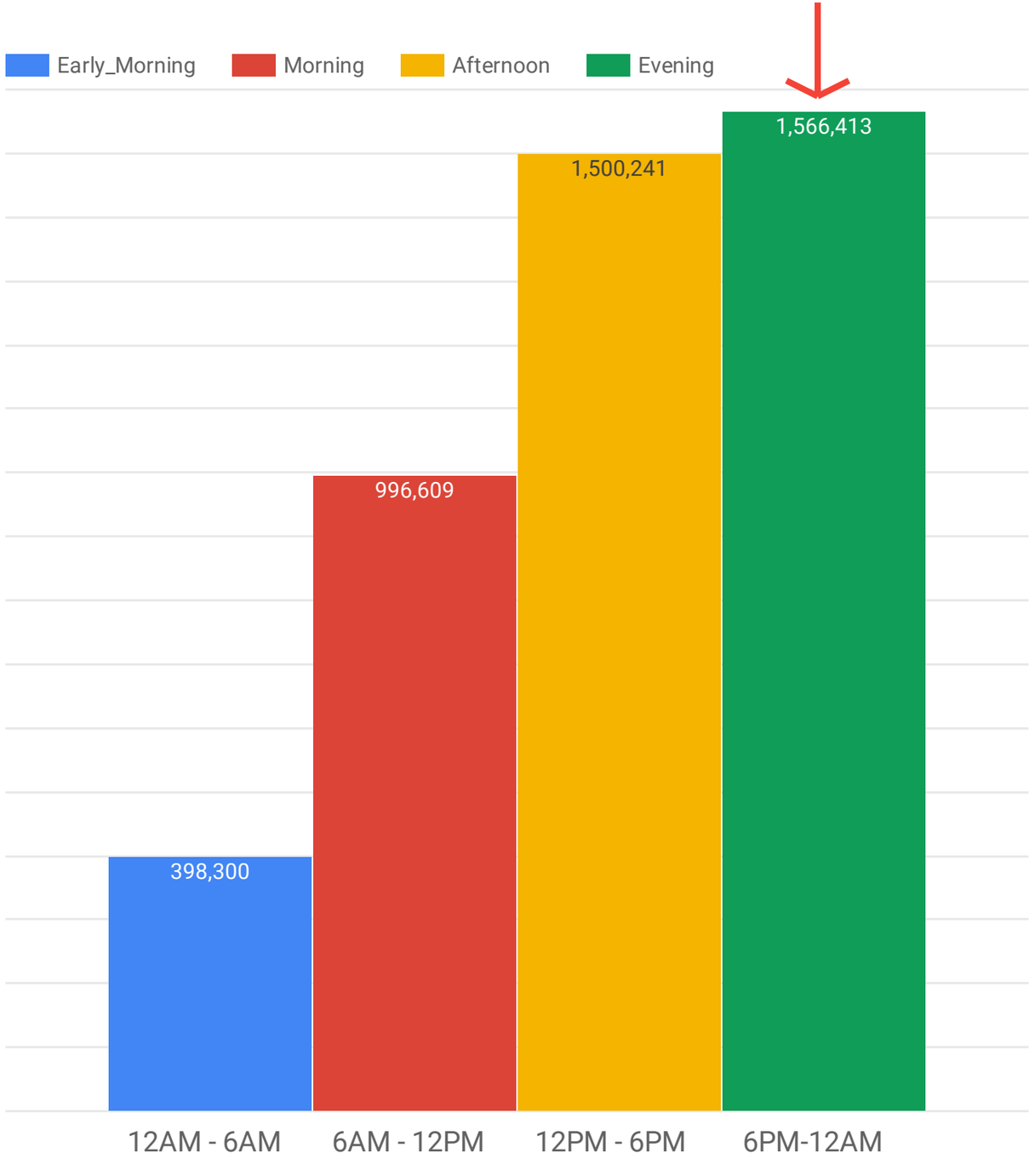


Number of Uber Pickup Requests in Different Time Period of a Day

Uber drivers received the most requests during the **evening period (18:00:00 -- 23:59:59)**

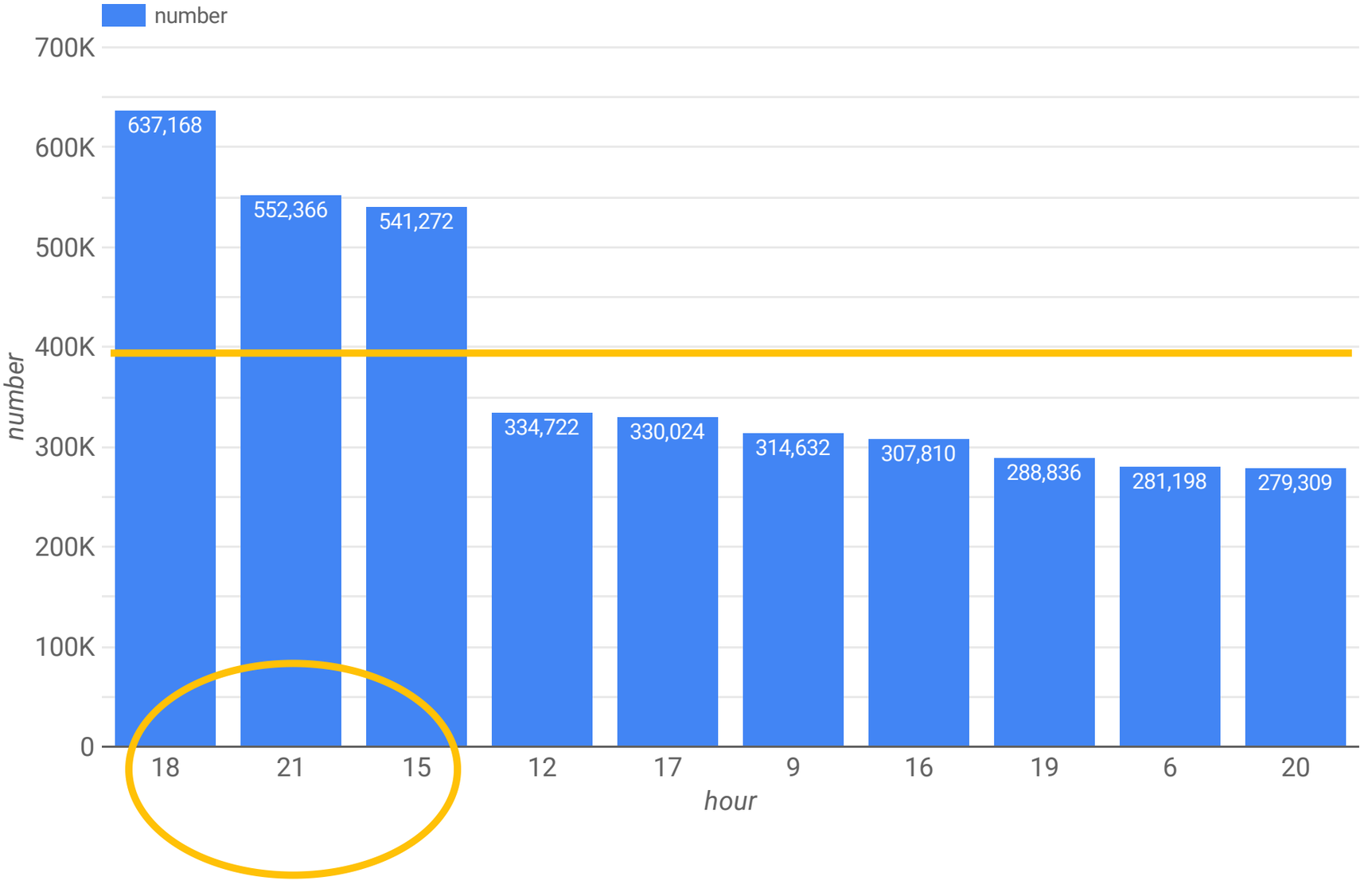
Query:

```
SELECT
CASE WHEN CAST(Date_Time as Time)
BETWEEN '00:00:00' AND '06:00:00'
THEN 'Early_Morning_0-6'

WHEN CAST(Date_Time as Time)
BETWEEN '06:00:00' AND '12:00:00'
THEN 'Morning_6-12'

WHEN CAST(Date_Time as Time)
BETWEEN '12:00:00' AND '18:00:00'
THEN 'Afternoon_12-18'

ELSE 'Evening_18-24' END AS
timeperiod,

COUNT(*) AS Number_Of_Pickups

FROM `team-3-249220.team3.All_Data`
GROUP BY timeperiod
ORDER BY Number_Of_Pickups ASC
```

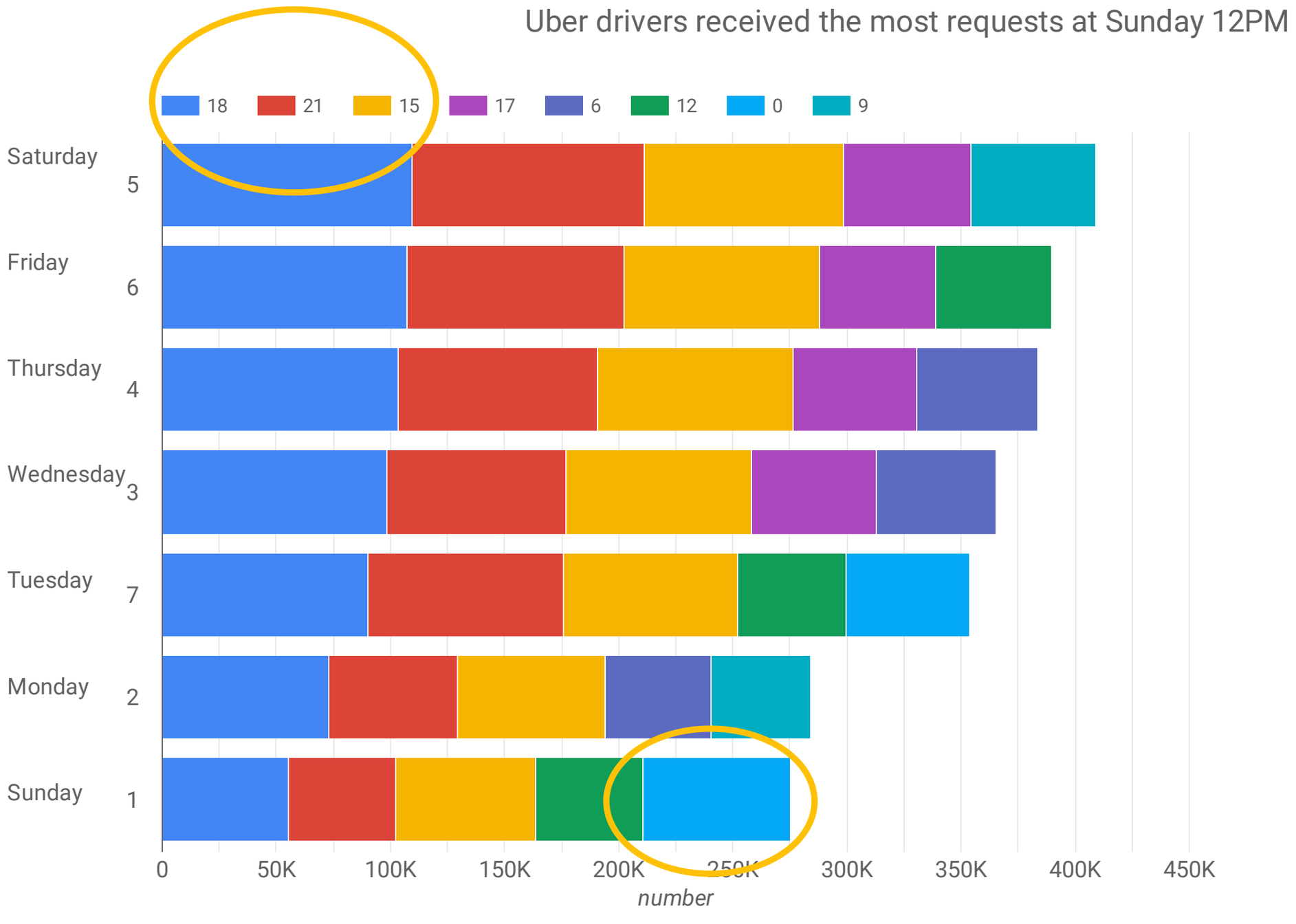


Hourly Pickup Requests

Uber drivers received the most requests at 6PM, 9PM, 15PM



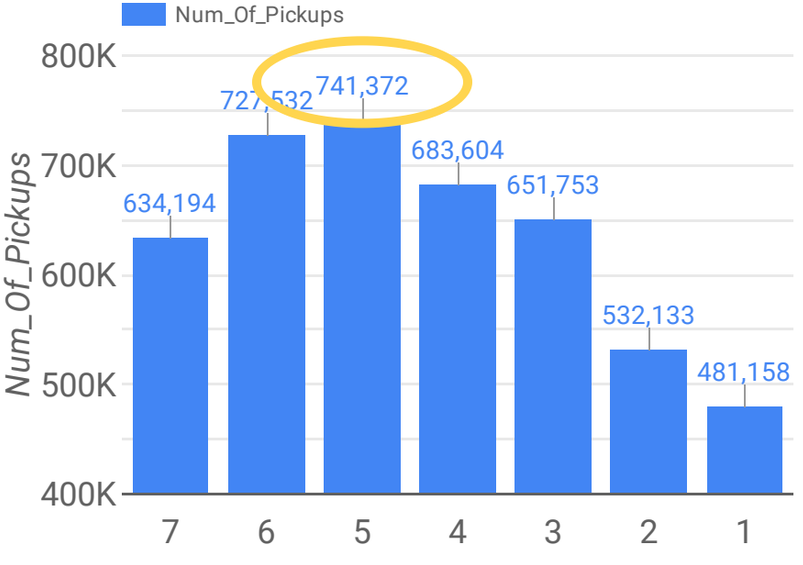
Top 5 Busiest Hour in a Day



Uber Pickups in 3 Busiest Months Under Different Weather Condition

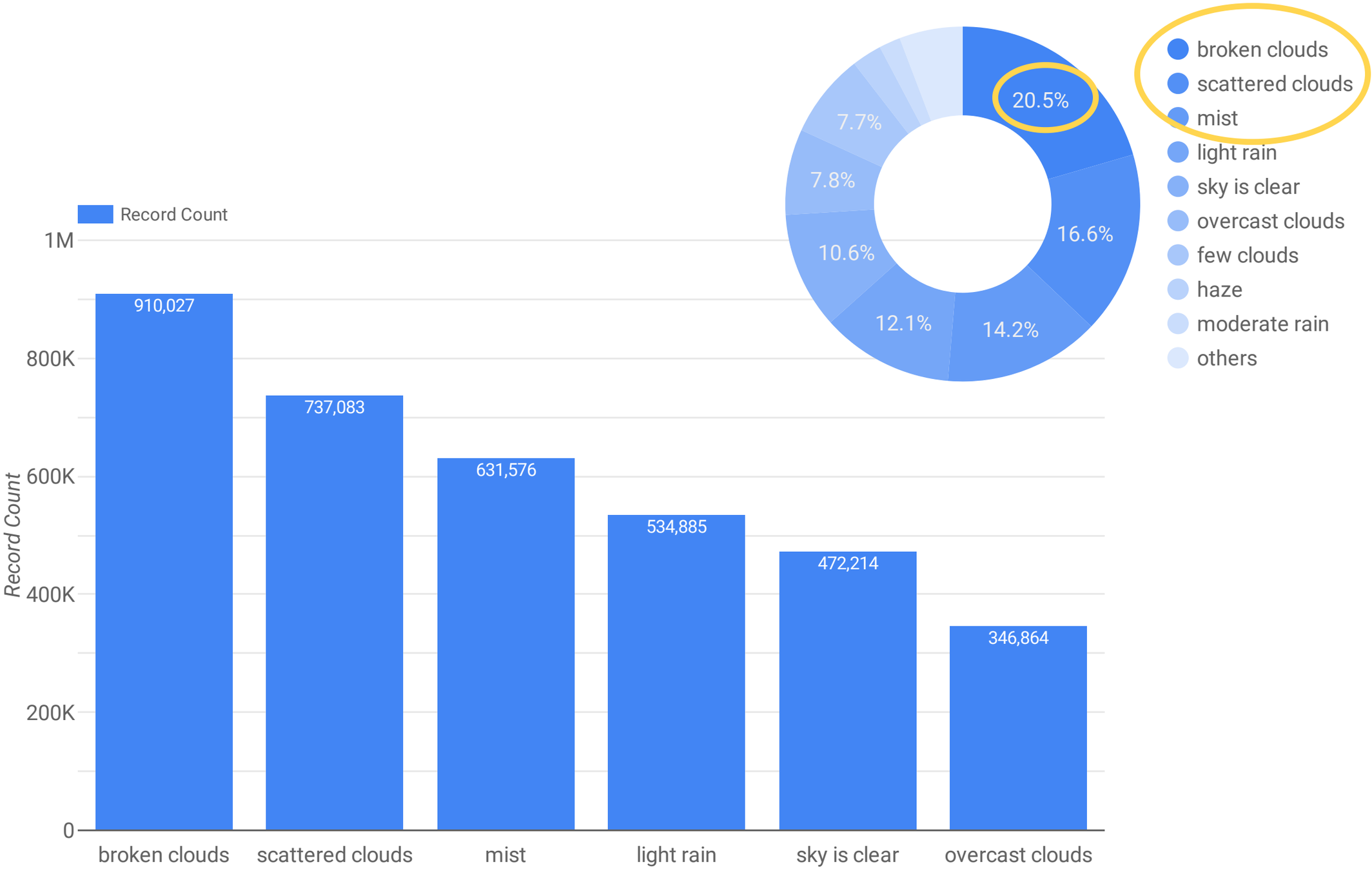
RoundedDate	weekd...	WeatherType	Record Count
Sep 30, 2014	3	mist	25,241
Sep 27, 2014	7	sky is clear	24,445
Sep 18, 2014	5	scattered clouds	22,855
Aug 6, 2014	4	broken clouds	22,425
Sep 17, 2014	4	scattered clouds	22,164
Sep 3, 2014	4	broken clouds	22,055
Jul 10, 2014	5	broken clouds	21,008
Sep 25, 2014	5	mist	20,797
Sep 12, 2014	6	scattered clouds	19,963
Aug 29, 2014	6	light rain	19,781
Jul 24, 2014	5	broken clouds	19,491
Sep 8, 2014	2	broken clouds	19,318
Jul 12, 2014	7	scattered clouds	18,640
Jul 17, 2014	5	broken clouds	17,817
Jul 22, 2014	3	scattered clouds	17,715
Jul 23, 2014	4	broken clouds	17,126

	DayOfWeek	Num_Of_Pickups
1.	5	741,372
2.	6	727,532
3.	4	683,604
4.	3	651,753
5.	7	634,194
6.	2	532,133
7.	1	481,158



Note: 1 = Sunday, 2 = Monday, 3 = Tuesday, 4 = Wednesday, 5 = Thursday, 6 = Friday, 7 = Saturday

Uber pickups Under different weather conditions



Hourly Uber PickUps Under Different Weather Conditions

```
SELECT ROUND(A.number/B.number, 2) as pickPerhourWeather , A.WeatherType from (SELECT
   count(*) as number, WeatherType
FROM
  `team-3-249220.team3.All_Weather_Pickups`
WHERE EXTRACT(Month FROM Date_Time) in (4,5,6,7,8,9) and WeatherType is not null
GROUP BY WeatherType
ORDER BY number DESC) as A
left join(
SELECT
   distinct(Newyork) as weather,count(*)as number
FROM
  `team-3-249220.team3.2014NewYorkCityWeather`
WHERE EXTRACT(Month FROM datetime) in (4,5,6,7,8,9)
GROUP BY weather
ORDER BY number DESC) as B
on A.WeatherType = B.weather
ORDER BY pickPerhourWeather desc
```

Hourly Uber PickUps Under Different Weather Conditions

Weather Condition vs PickUp Per Hour

	WeatherType	pickPerhourWeather
1.	thunderstorm with light rain	2,259.67
2.	drizzle	1,710
3.	proximity thunderstorm	1,420.6
4.	light intensity drizzle	1,391.46
5.	haze	1,349
6.	heavy intensity rain	1,167.8
7.	dust	1,108.16
8.	scattered clouds	1,091.97
9.	very heavy rain	1,078.14
10.	broken clouds	1,060.64
11.	mist	1,056.15
12.	heavy intensity drizzle	1,009.5
13.	light rain	1,003.54
14.	overcast clouds	977.08
15.	thunderstorm	975.5

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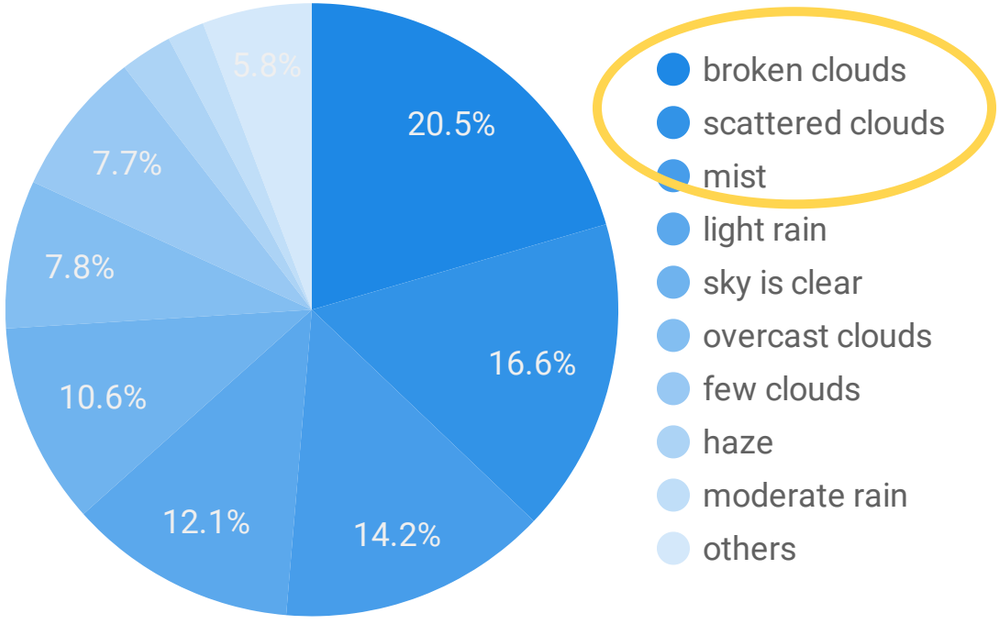
Weather Condition vs Total Pickup numbers

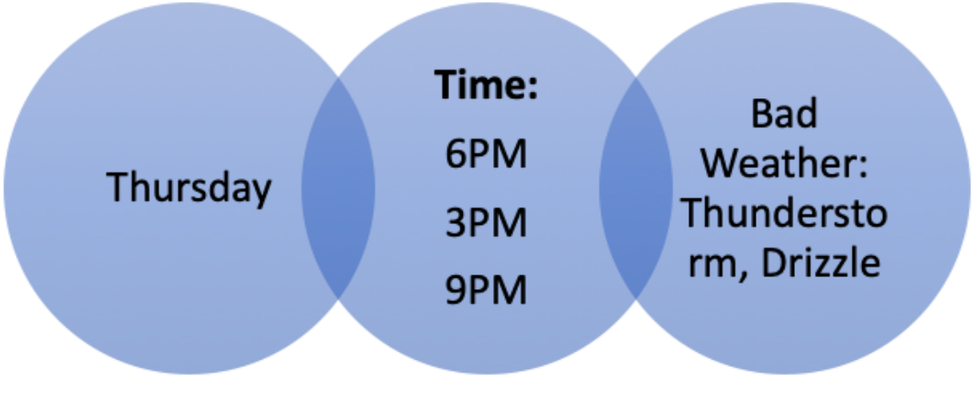


Conclusion & Recommendation

Results - Surge Time for Uber pickups given the factors of time period and weather:

Location:	• JFK • LGA
Month:	• September
Weekday:	• Thursday • 2nd: Friday.
Time:	• 6PM • This results in our predict range. • Unexpectedly, second two most requested times are 9 PM and 3 PM
Weather	• Broken cloud day from whole data • Thunderstorm with light rain per hour

Recommendations for Uber Drivers In New York City:




THANK YOU!
ANY QUESTIONS?