

Citi Bike Ridership Exploratory Analysis

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Introduction

Goal: Perform visualizations and **identify significant patterns** of Citi Bike Ridership.

- Who is riding Citi Bike?
- How long are they riding?
- Which stations are most popular?

Data

Citi Bike site: <https://www.citibikenyc.com/system-data>

Timeframe: July 2019

File size: 93.36 MB

Columns: 15

Rows: 21,81,064 (trips registered)

Past Data Format

Trip Duration (seconds)

Start Time and Date

Stop Time and Date

Start Station Name

End Station Name

Station ID

Station Lat/Long

Bike ID

User Type (Customer/ Subscriber)

Gender

Year of Birth



Current Data Format

Ride ID

Rideable type

Started at

Ended at

Start station name

Start station ID

End station name

End station ID

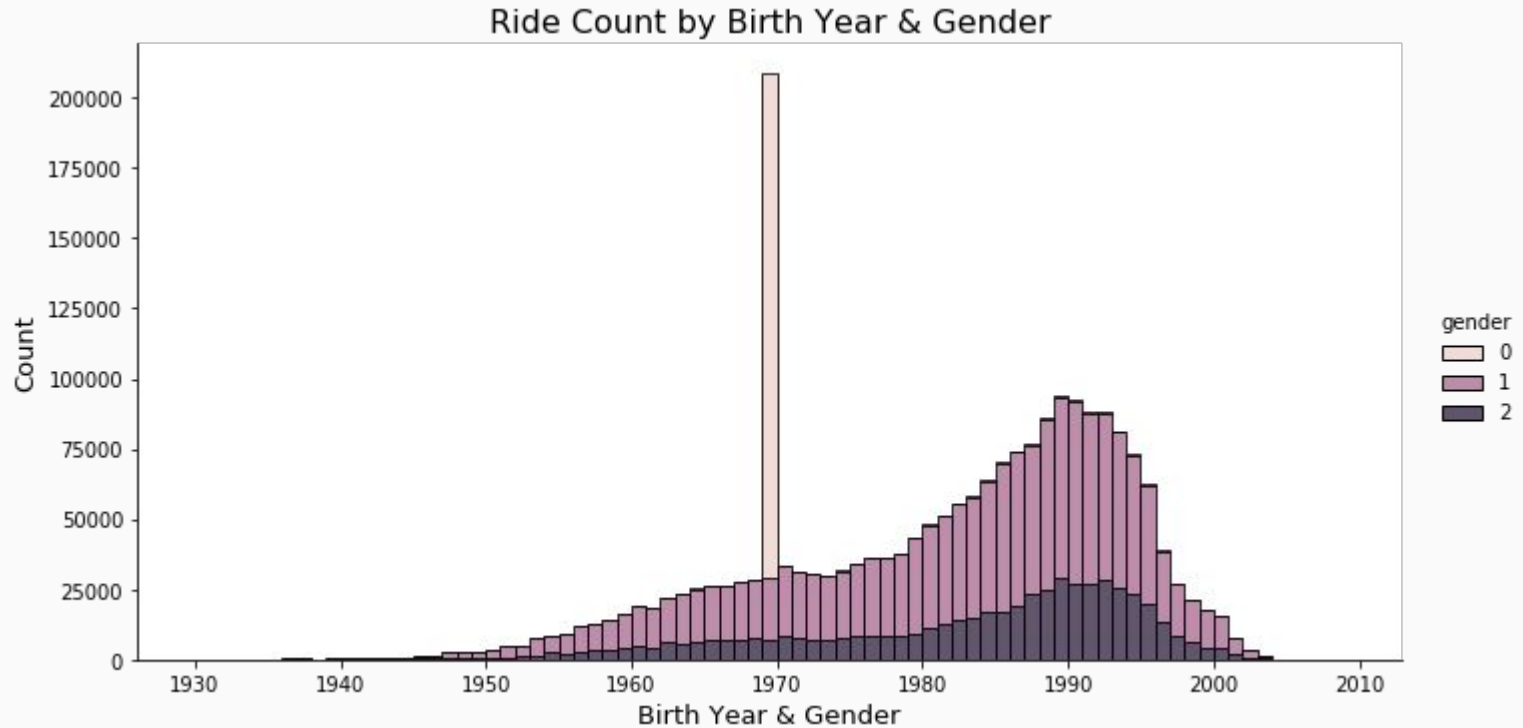
Start latitude

Start longitude

End latitude

End Longitude

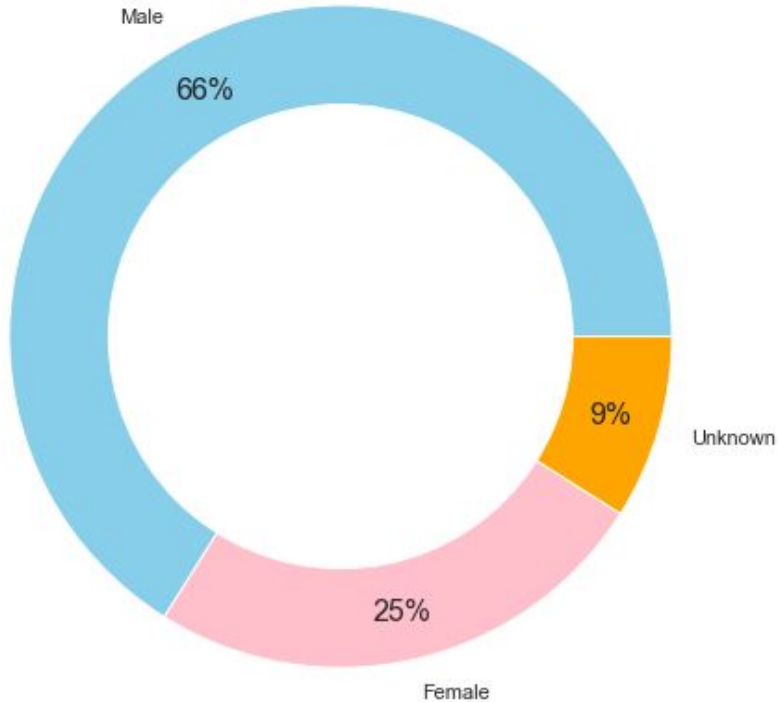
Member or casual ride



Ride count by gender plot is skewed. The reason behind this is because we have **outliers with values above 19,000 (9%)**. This may have happened due to an error in the built-in tracking system of the Citi bike system.

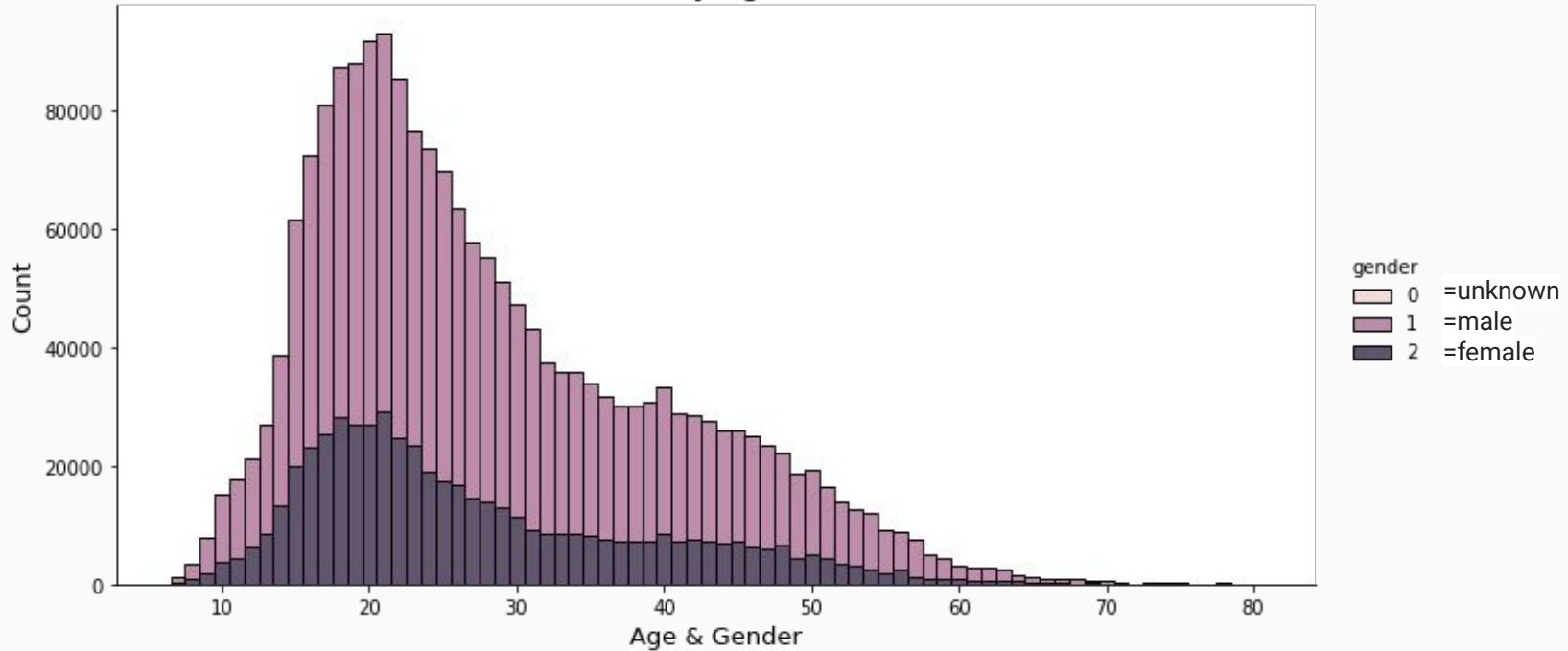
Findings

Citi Bikes Rider Gender

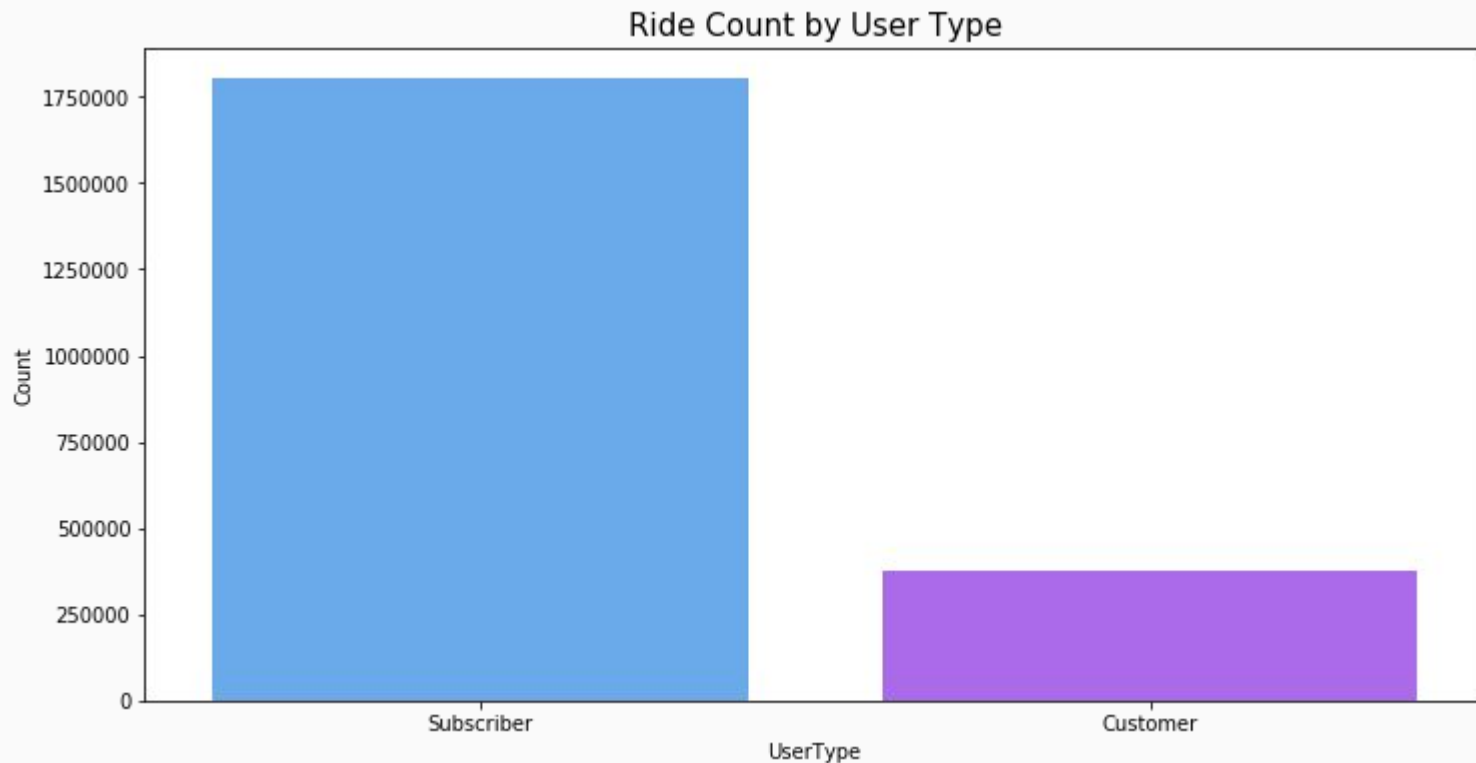


Men are riding more – far more – than women. In July 2019, 66% of riders were male, 25% were female and 9% were unknown.

Ride Count by Age & Gender

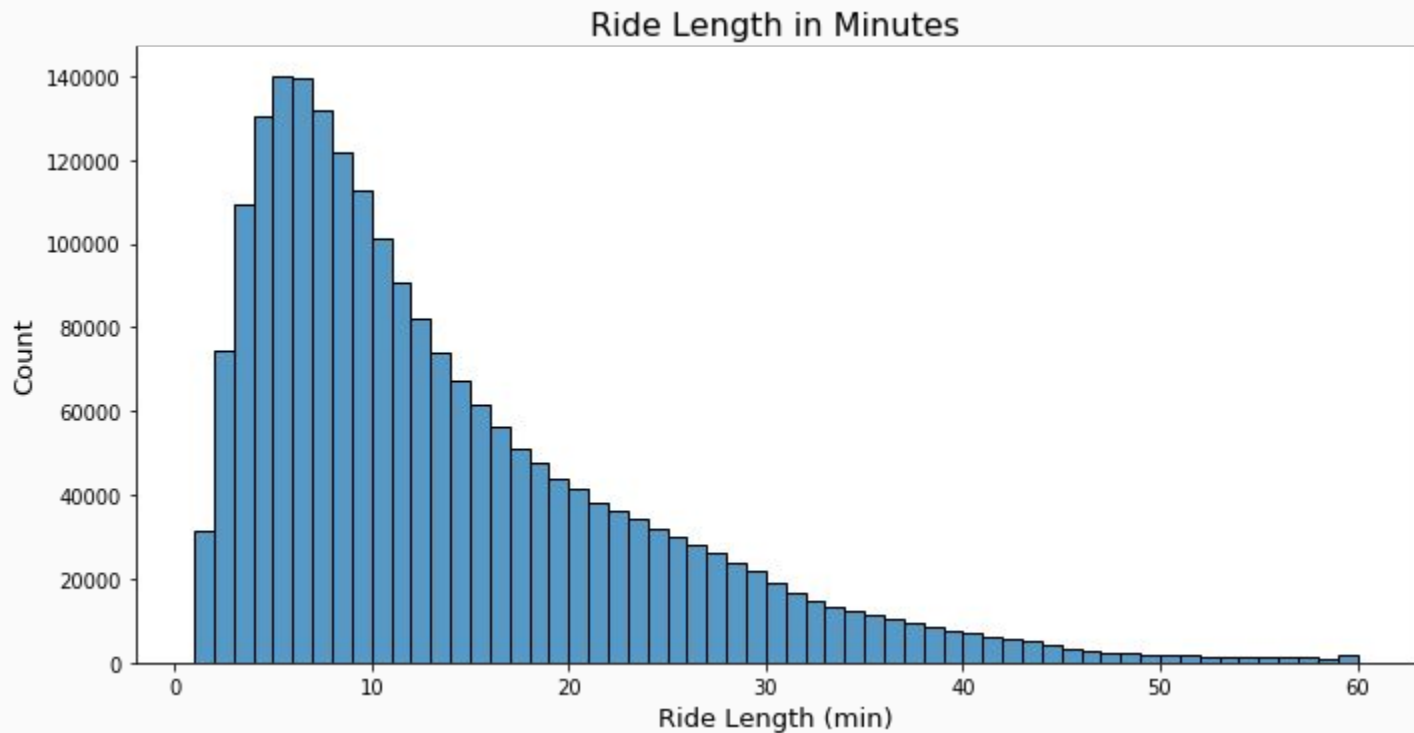


The largest share of trips were taken by **20-40 year old males**. In general, we see greater use by males than females, approximately 4x greater use regardless of age bucket. Age patterns emerge regardless of gender, with most trips taken by **20-30 year olds for both male and female riders**.

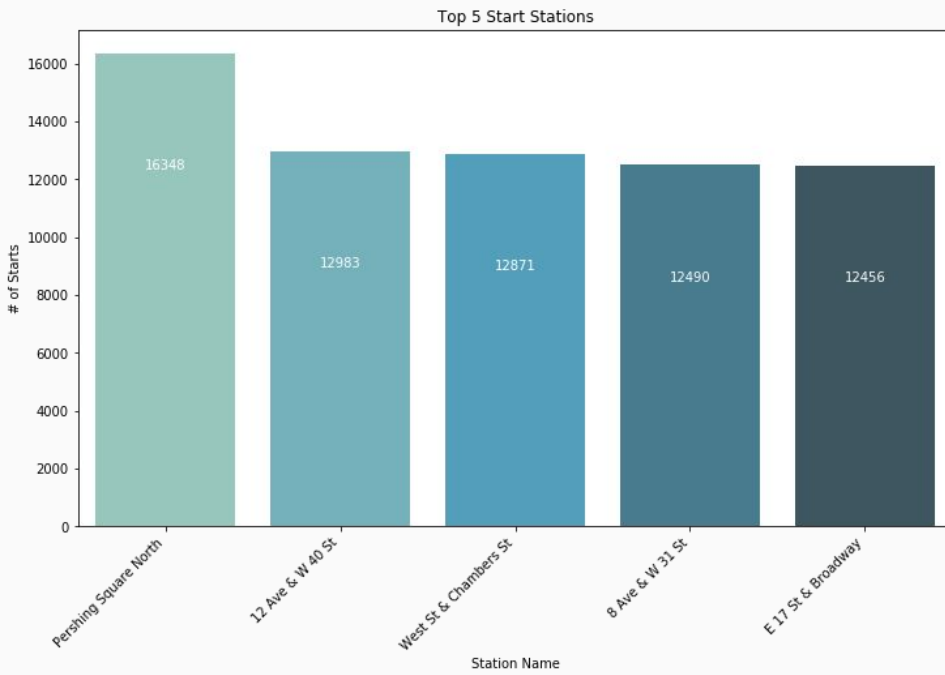


The largest share of trips were taken by annual members. Only small number of trips were taken by short-term customer.

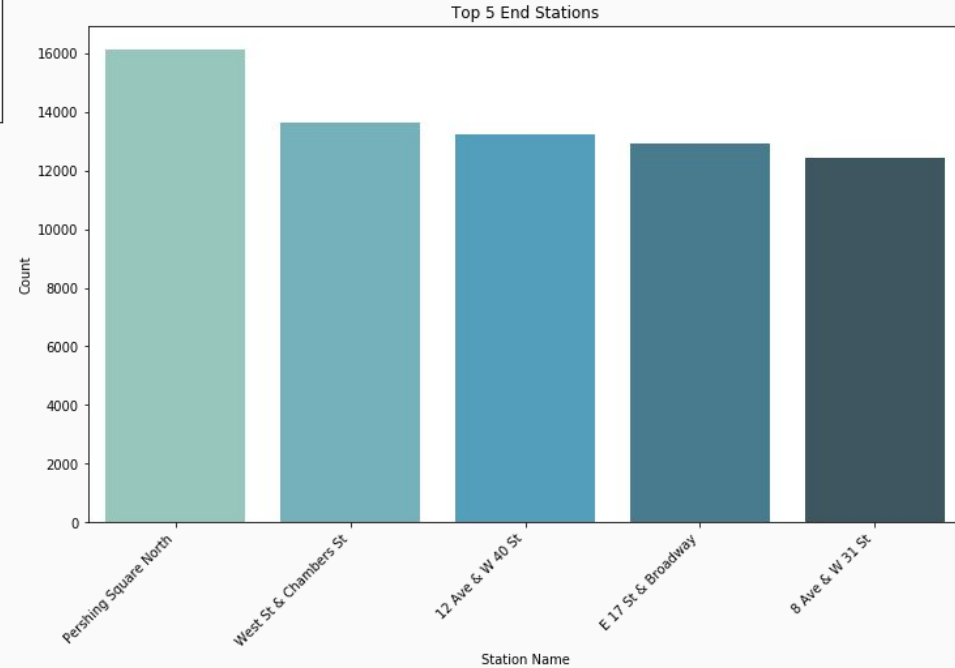
- **Customer = 24 hour/7 Day pass | Subscriber = Annual Pass**



Most NYC Citi Bike trips fall within the **3 to 10 minute range**. The shorter tip is 2 min and the longest is an hour. One possible explanation for the difference is that longer rides are more likely to be attributed to tourists who are exploring the city with more time to spare.



The most popular starting point for Citi Bike rides in New York City is at **Pershing Square North**.





The most popular starting points among female and male Citi Bike rides are **Broadway & E 22 St** and **E 12 St & Broadway**, **noted on the map below by the green marker** on the East side of Manhattan.

Female: Top 5 Start Stations

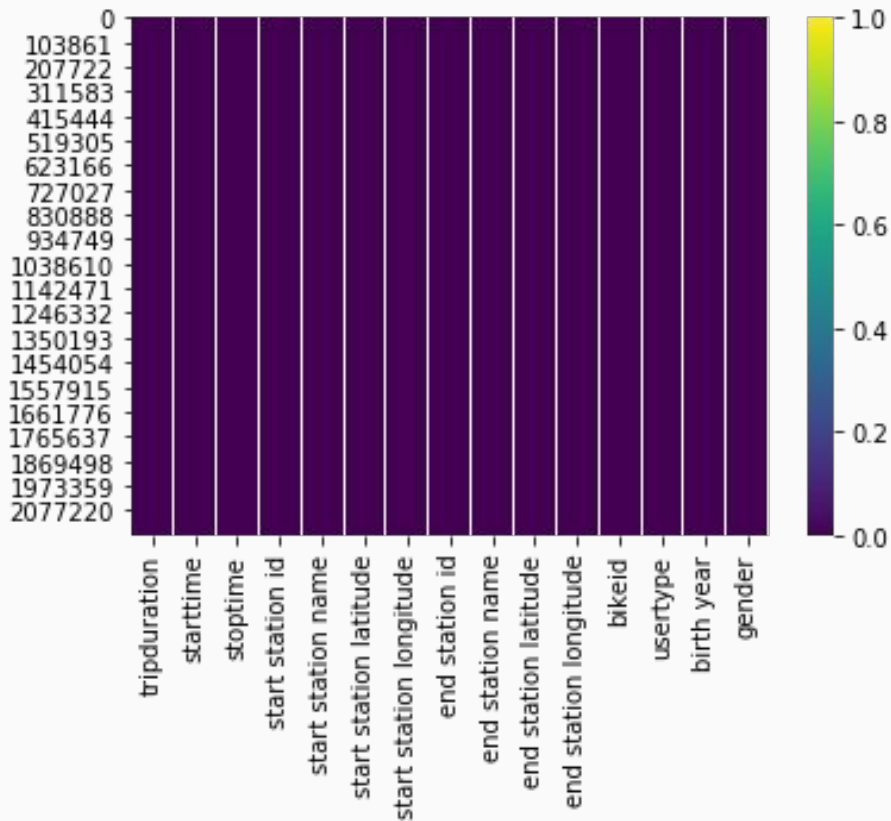
	Station Name	Count
0	West St & Chambers St	3593
1	12 Ave & W 40 St	3241
2	W 21 St & 6 Ave	3059
3	E 17 St & Broadway	3040
4	Broadway & E 22 St	2710

Male: Top 5 Start Stations

	Station Name	Count
0	Pershing Square North	13240
1	8 Ave & W 31 St	10208
2	E 17 St & Broadway	8664
3	Broadway & E 22 St	8569
4	Christopher St & Greenwich St	8111

Concluding thoughts on data

- Well organized and clean
- Limited
- Interactive map
- UserType v. Trip Duration
- Station usage v. neighborhood
- Most popular routes



References

- stackoverflow.com
- [geeksforgeeks.org](https://www.geeksforgeeks.org)
- dataindependent.com
- medium.com
- analyticsvidhya.com

Q&A