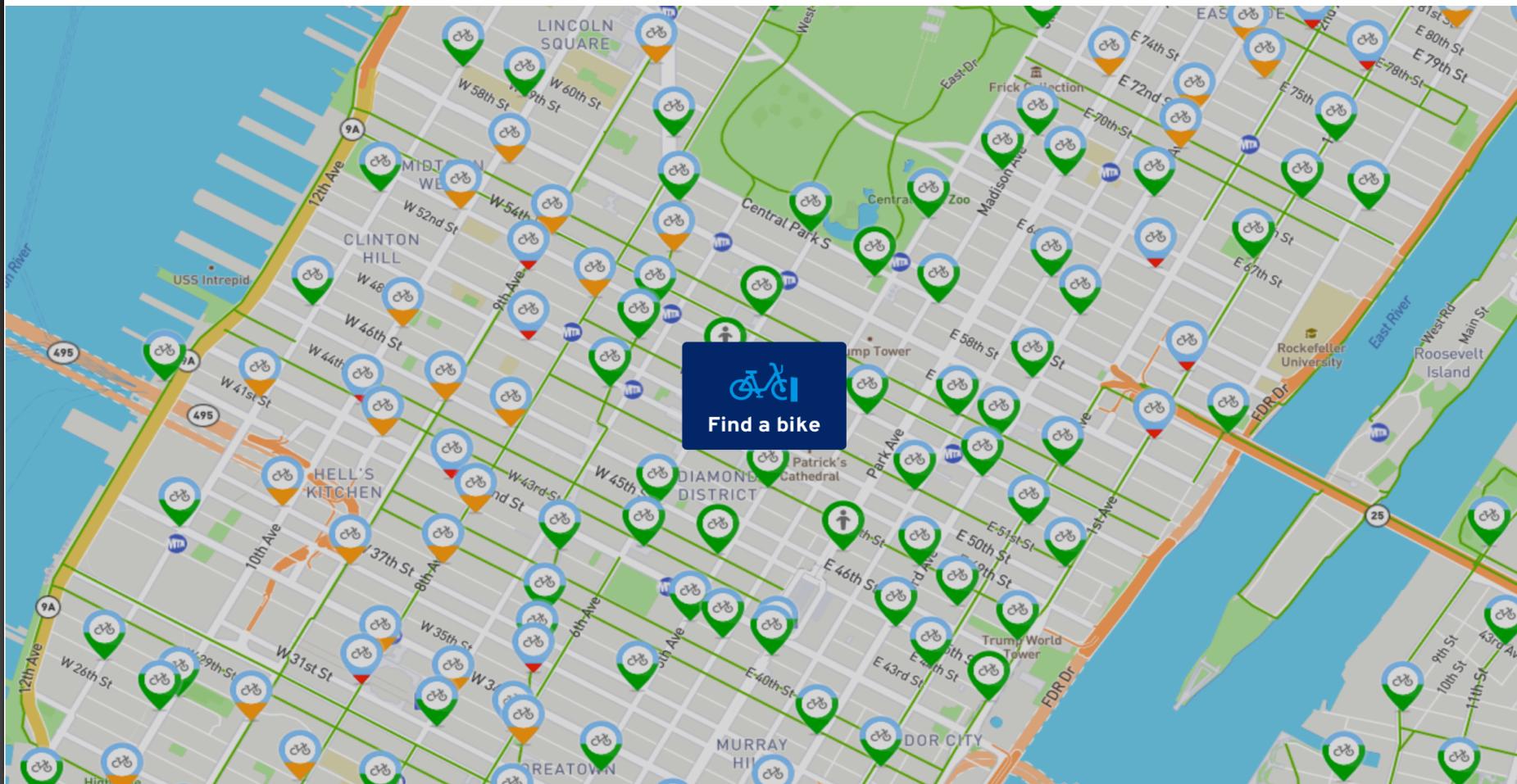


Citibike 2017 Data Analytics

Simon Alizadeh



12,000 bikes. 750 stations. 60 neighborhoods.





Data Sources & Cleanup

- Data Source: <https://s3.amazonaws.com/tripdata/index.html>
- Data Original Format: 12 csv files covering 12 months of 2017
- Data Cleanup tool: Python (jupyter notebook)
- Data Cleanup Steps:
 - Populated blank Birth Years with overall average Birth Year
 - Populated blank Gender fields with average Gender type proportional to males and female populations
 - Added Season column for Seasonal Trend Analysis



Story Points

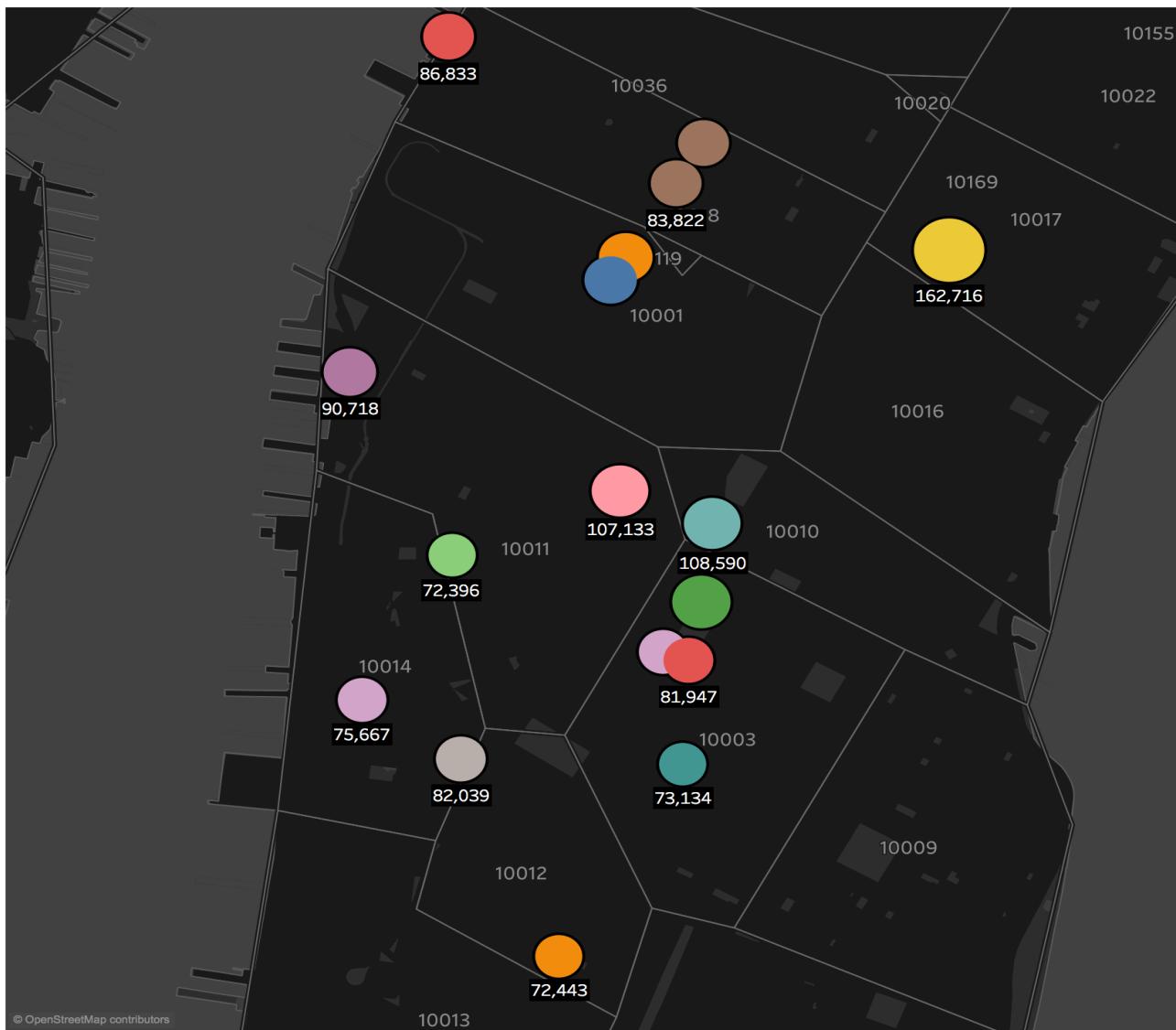
- Top 20 Stations by Location
- Age and Gender Analytics
- Seasonal Trends
- Ridership Growth Analysis

Top 20 Stations Locations



18 of the top 20 starting station locations are the same as top 20 ending station locations.

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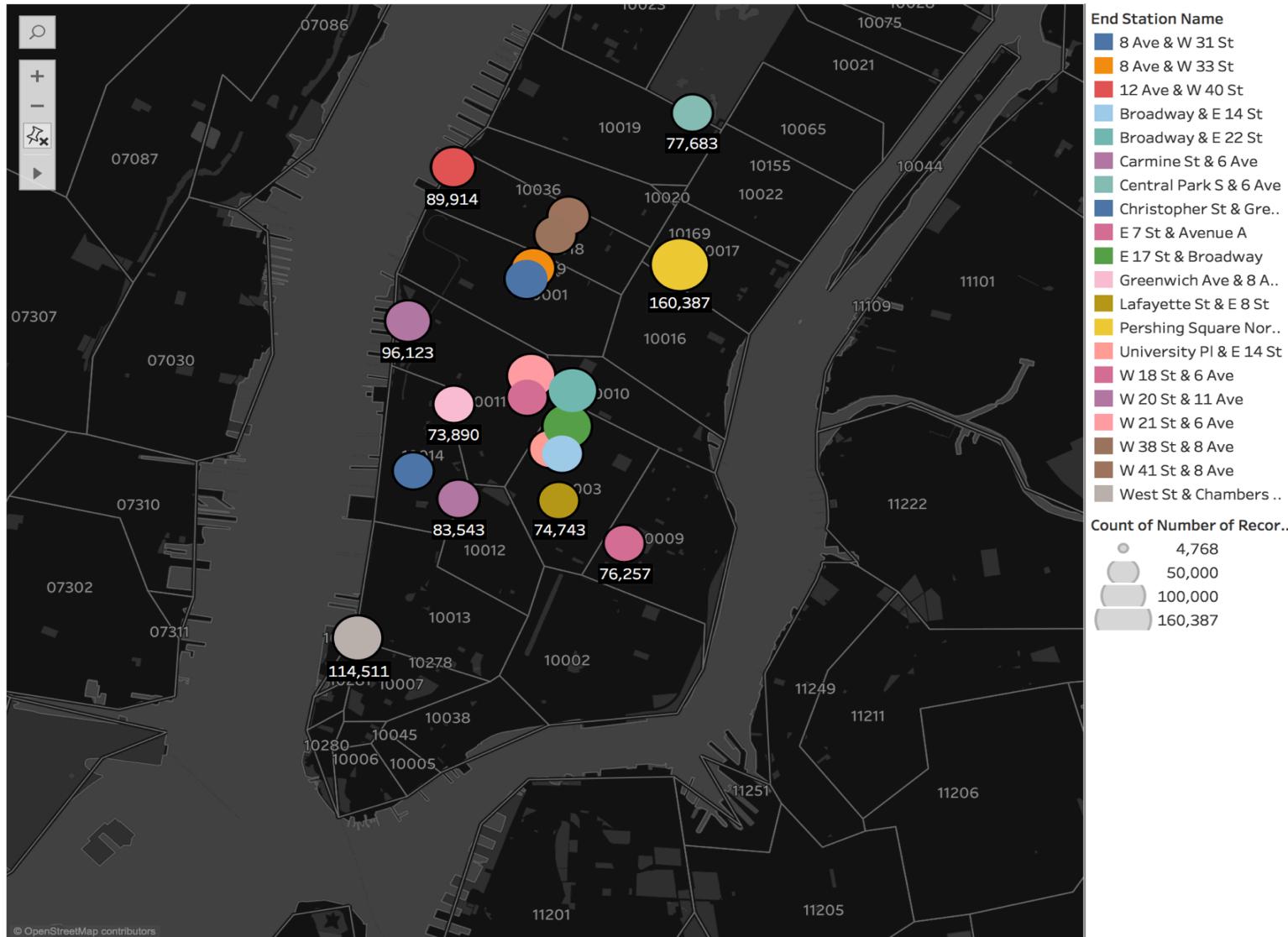
Start Station Name
8 Ave & W 31 St
8 Ave & W 33 St
12 Ave & W 40 St
Broadway & E 14 St
Broadway & E 22 St
Carmine St & 6 Ave
Central Park S & 6 Ave
Christopher St & Gre..
Cleveland Pl & Spring..
E 17 St & Broadway
Grand Army Plaza & ..
Greenwich Ave & 8 A..
Lafayette St & E 8 St
Pershing Square Nor..
University Pl & E 14 St
W 20 St & 11 Ave
W 21 St & 6 Ave
W 38 St & 8 Ave
W 41 St & 8 Ave
West St & Chambers ..

Count of Number of Rec..
6,619
50,000
100,000
162,716

Top 20 Stations Locations



18 of the top 20 starting station locations are the same as top 20 ending station locations.



Age & Gender Analytics

Total number of rides in 2017 was over 16M.

Most riders were 39 years old.

Men and women age 21 to 36 year olds rode the most.

Men of average age 38.9 and women of average age 31.7 rode the most.



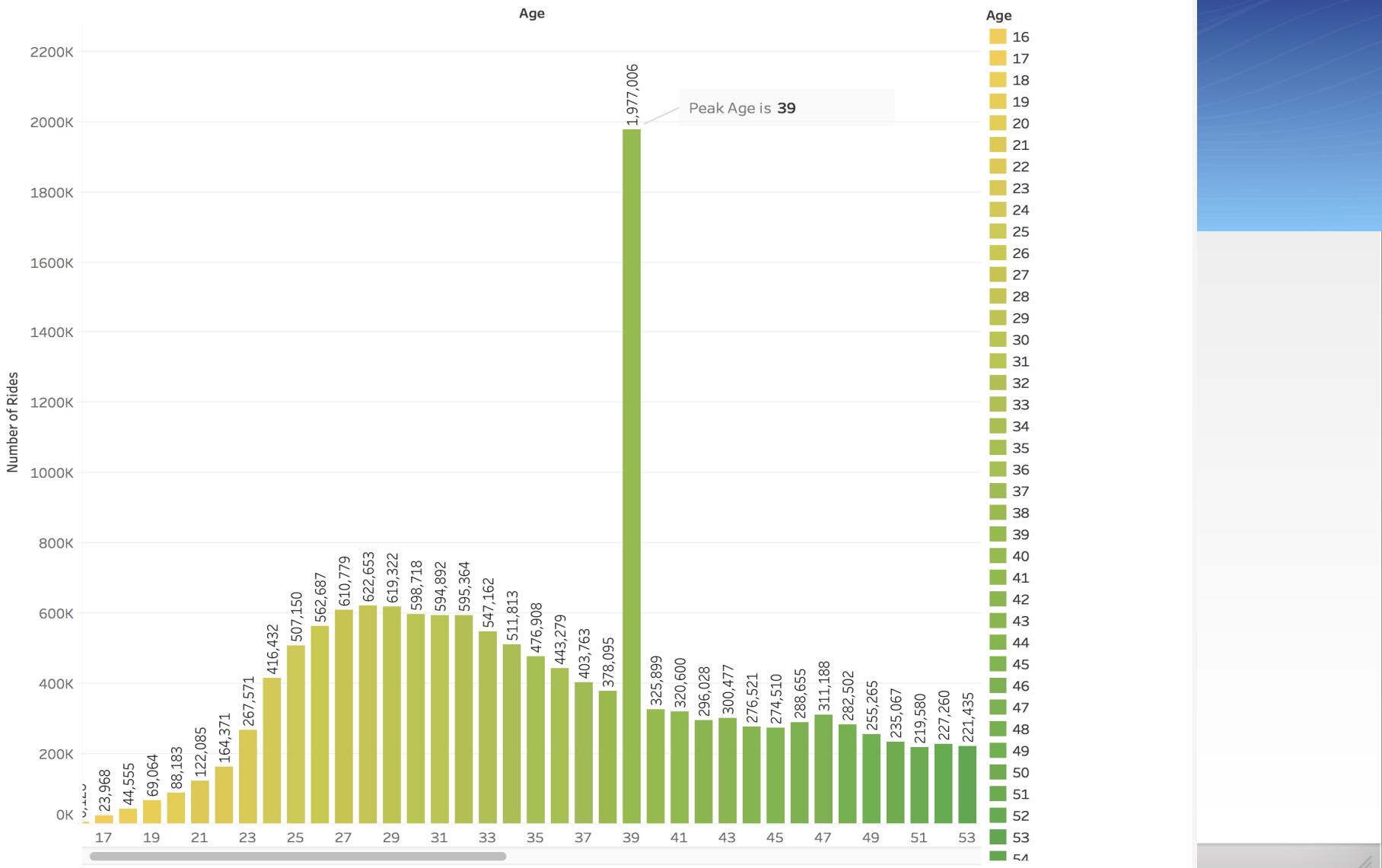
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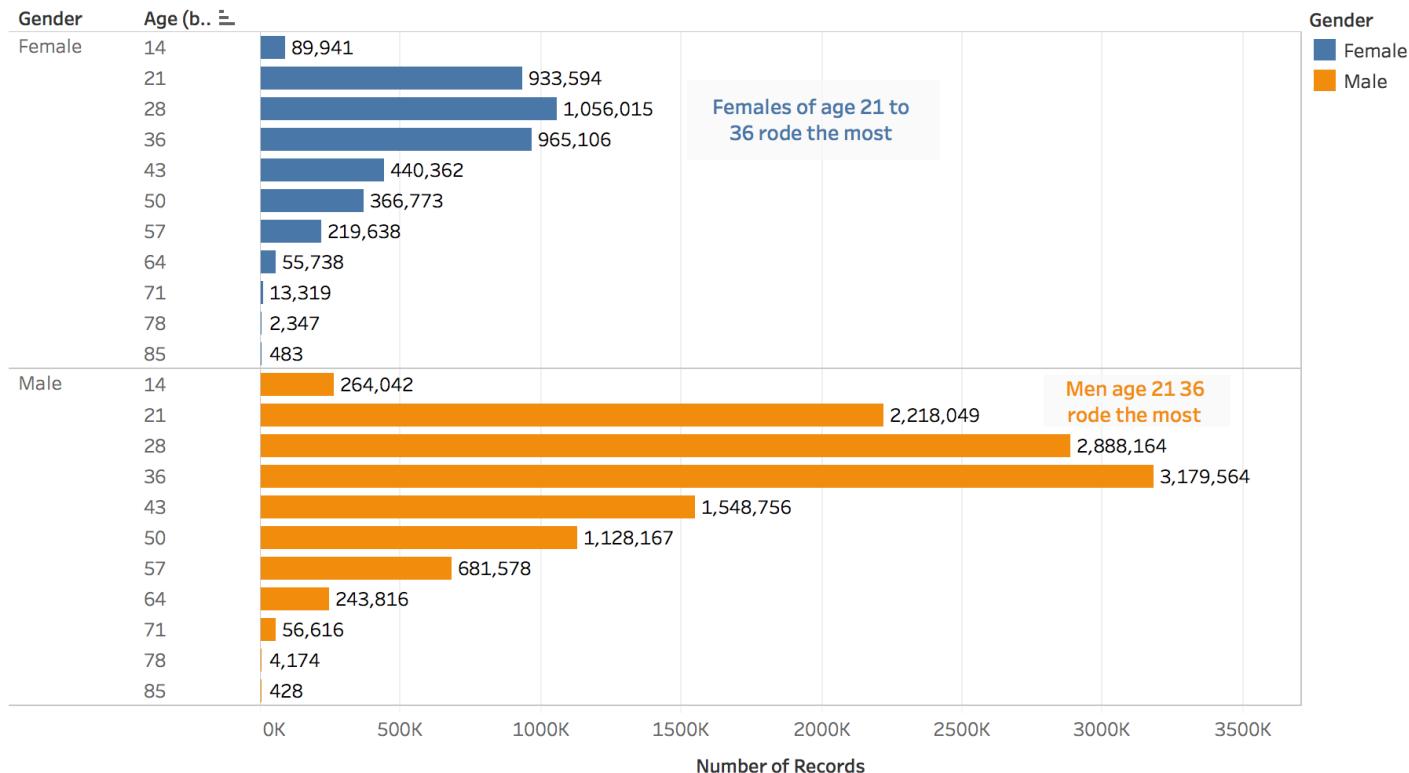
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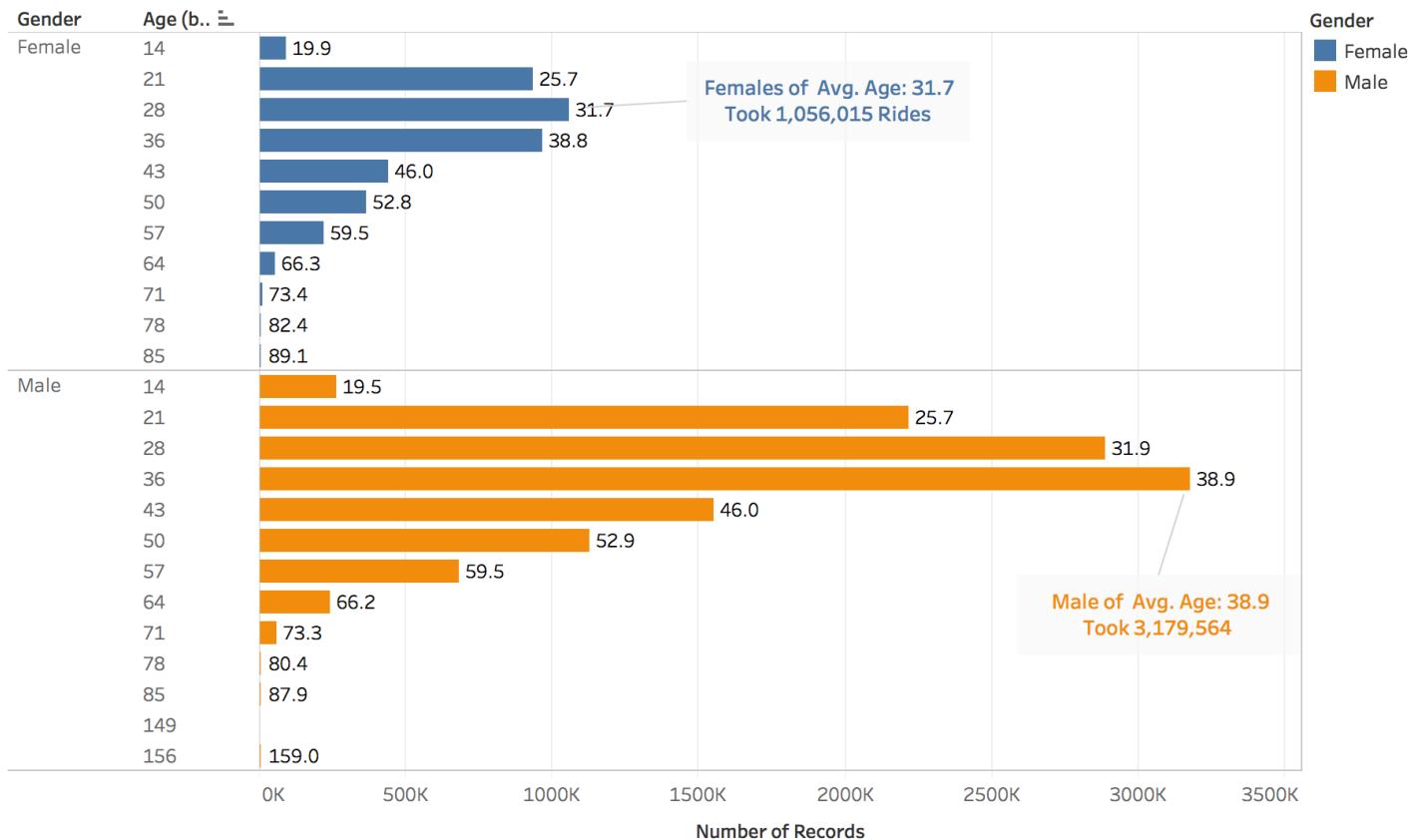
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Gender

- Female
- Male

Females of Avg. Age: 31.7
Took 1,056,015 Rides

Male of Avg. Age: 38.9
Took 3,179,564

Seasonal Trends

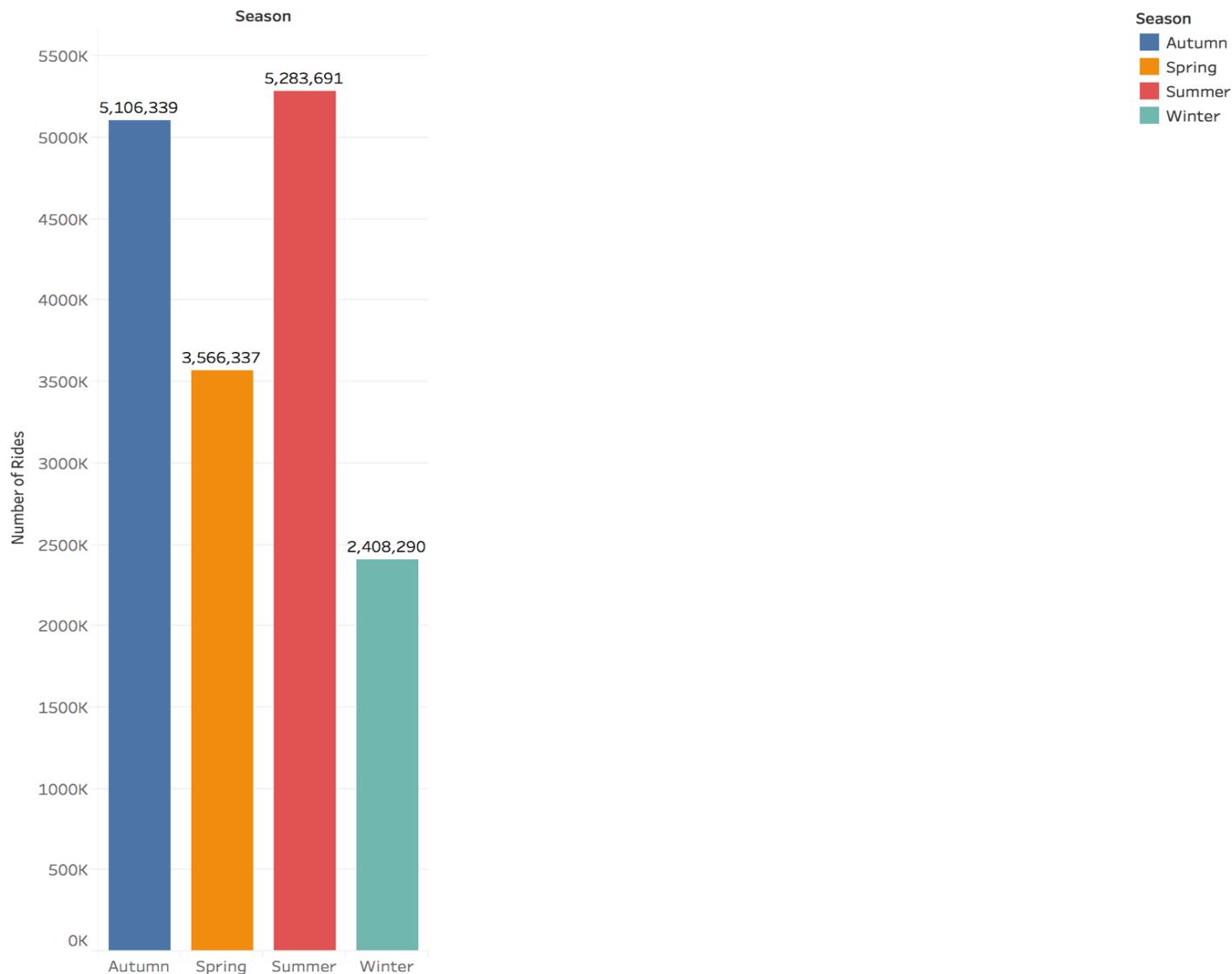


Summer and autumn were the most popular time of year for riding.



Peak hour for riding was 5pm across all seasons!

Men and women rode mostly in autumn and summer.



Seasonal Trends

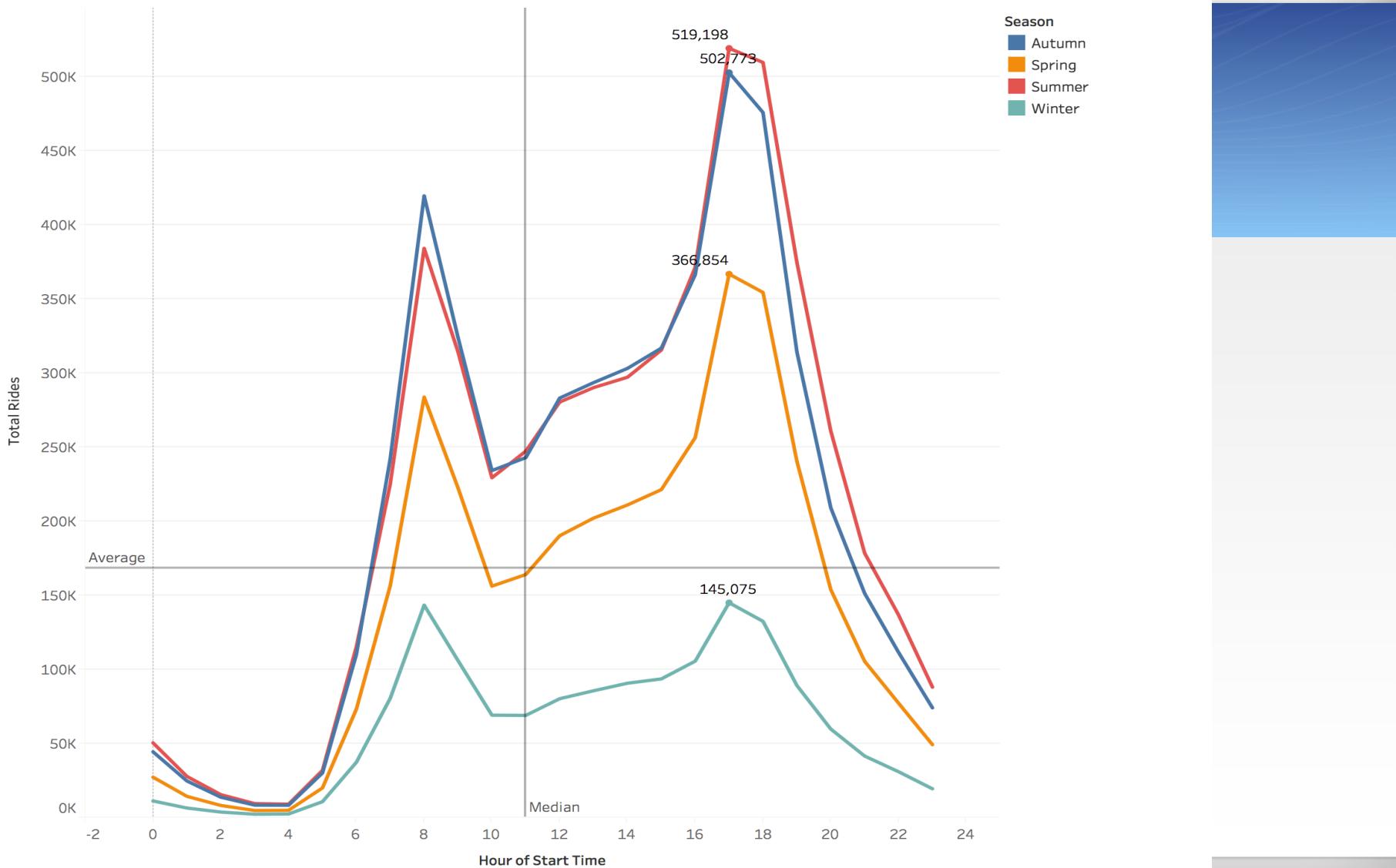


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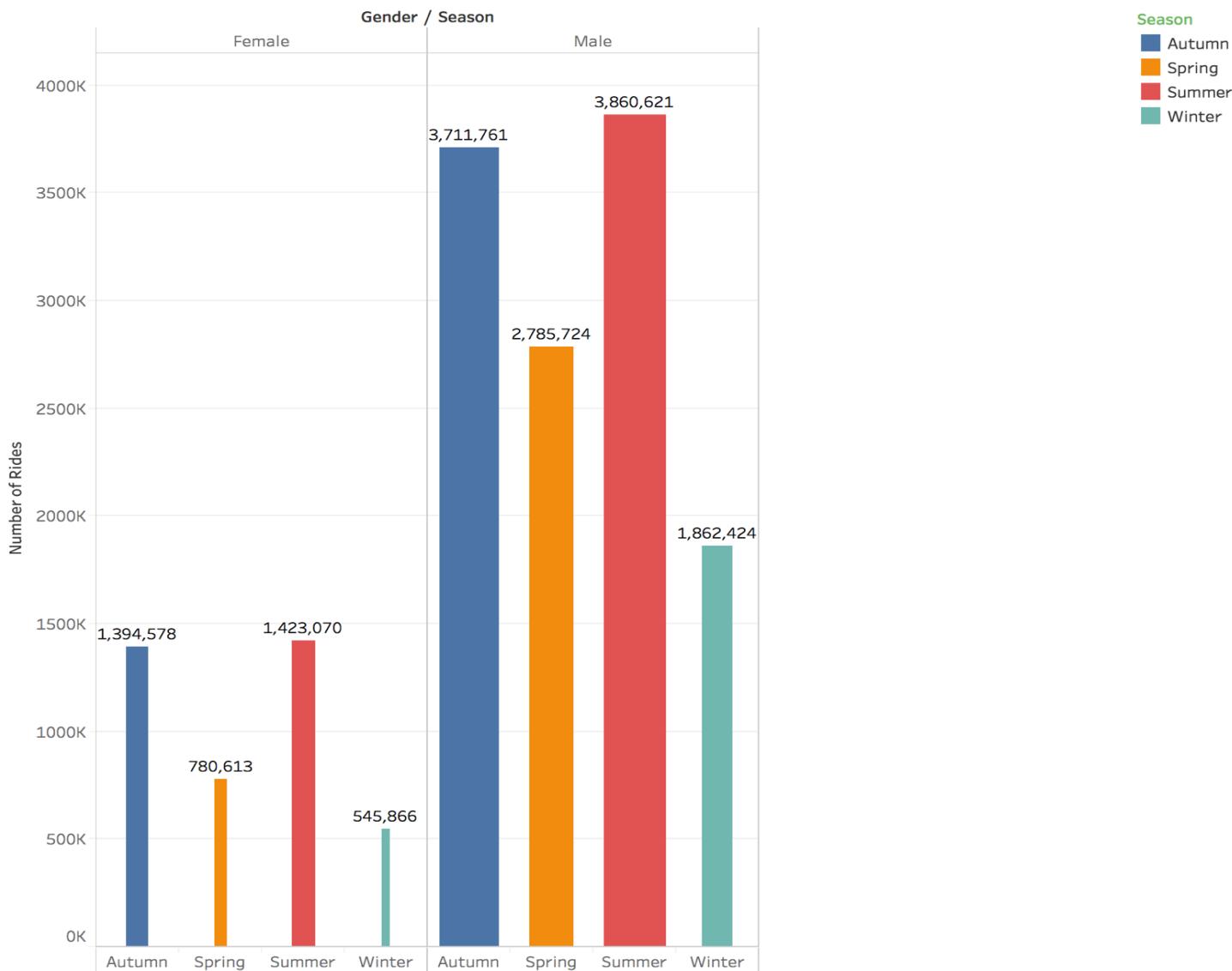


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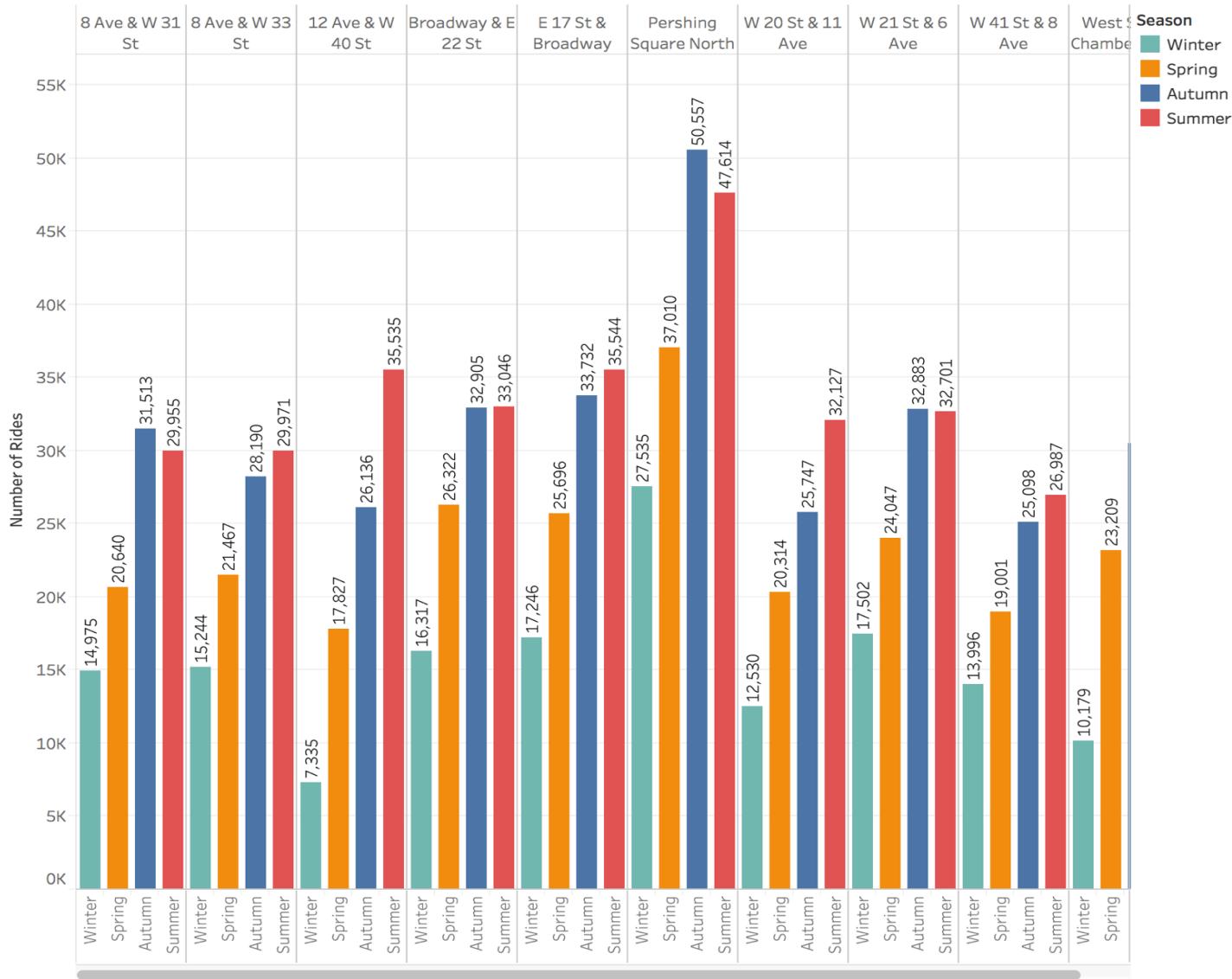


Top 10 starting stations by season

Bottom 10 starting stations

Top 10 ending stations

Bottom 10 ending stations



Seasonal Trends

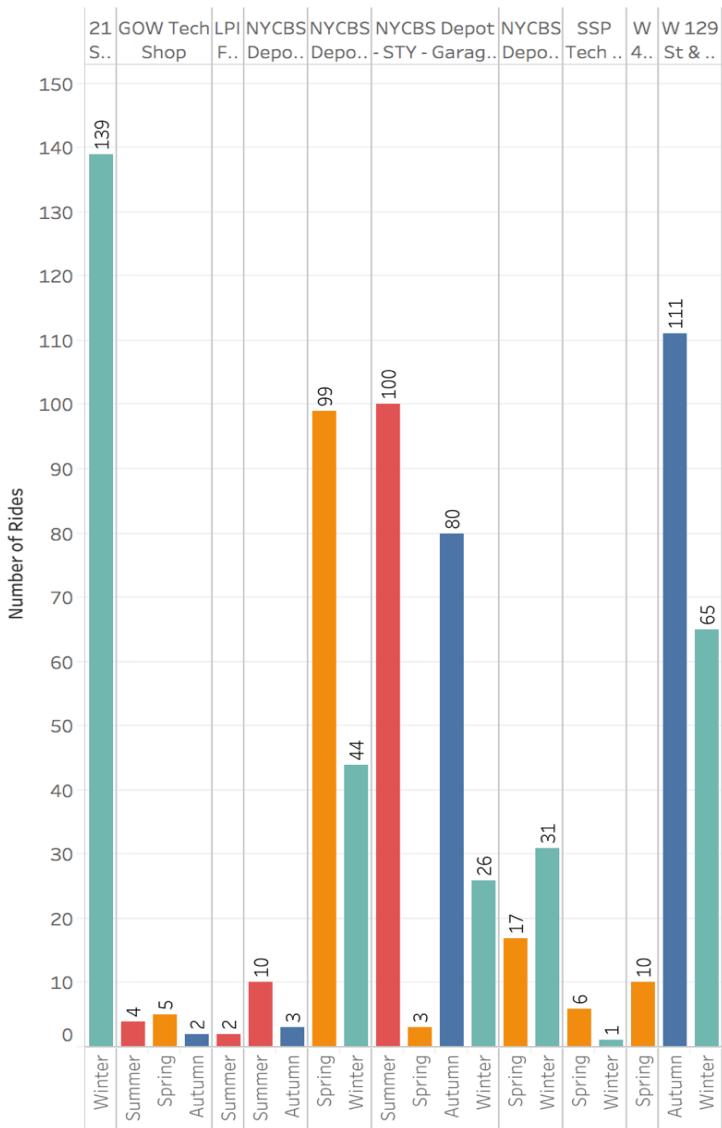


Top 10 starting stations by season

Bottom 10 starting stations

Top 10 ending stations

Bottom 10 ending stations



Season

- Summer
- Spring
- Autumn
- Winter

Seasonal Trends



Seasonal Trends

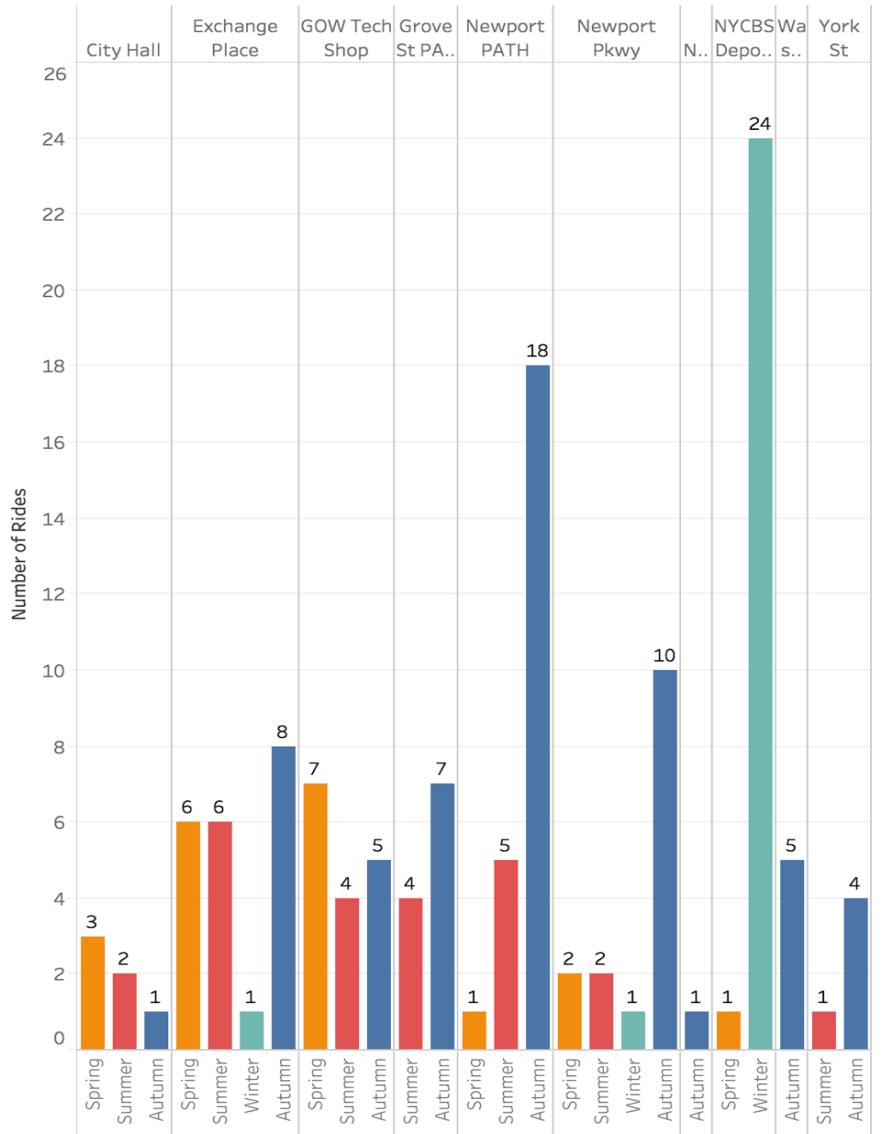


starting stations by season

Bottom 10 starting stations

Top 10 ending stations

Bottom 10 ending stations



Season

- Spring
- Summer
- Winter
- Autumn

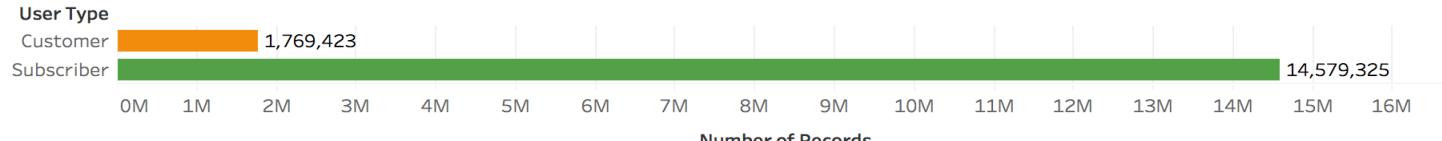
Ridership Growth Analysis

Subscriber base is very strong. Subscriber and customer growth follow the same pattern.

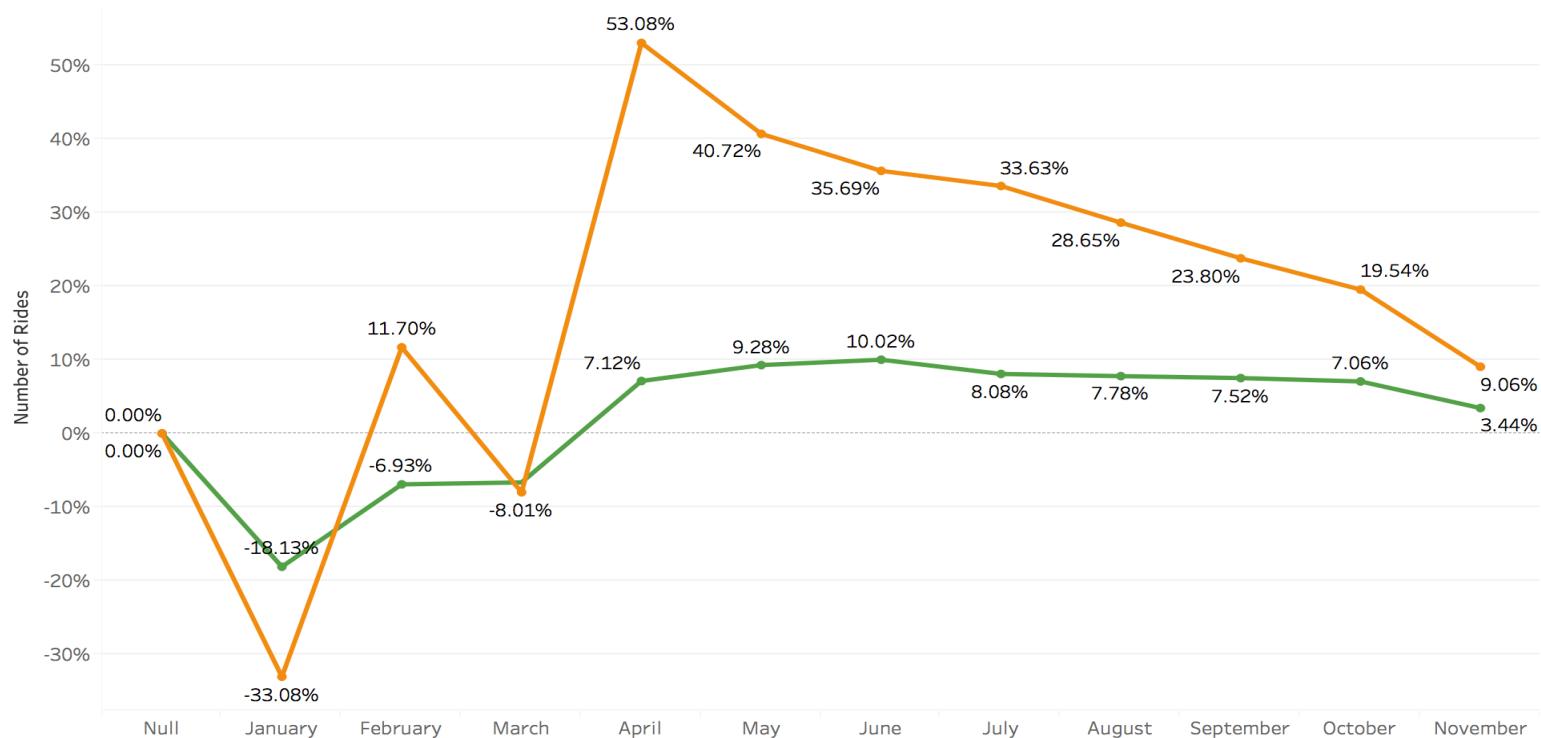
Overall month over month ridership growth was in the positive with declines in March and November only.

Compound annual ridership was positive and peaked from April through June.

Male and female ride from January through October overtaking males more with their kids out than decline as they do.



Subscriber/Customer Monthly Fluctuations



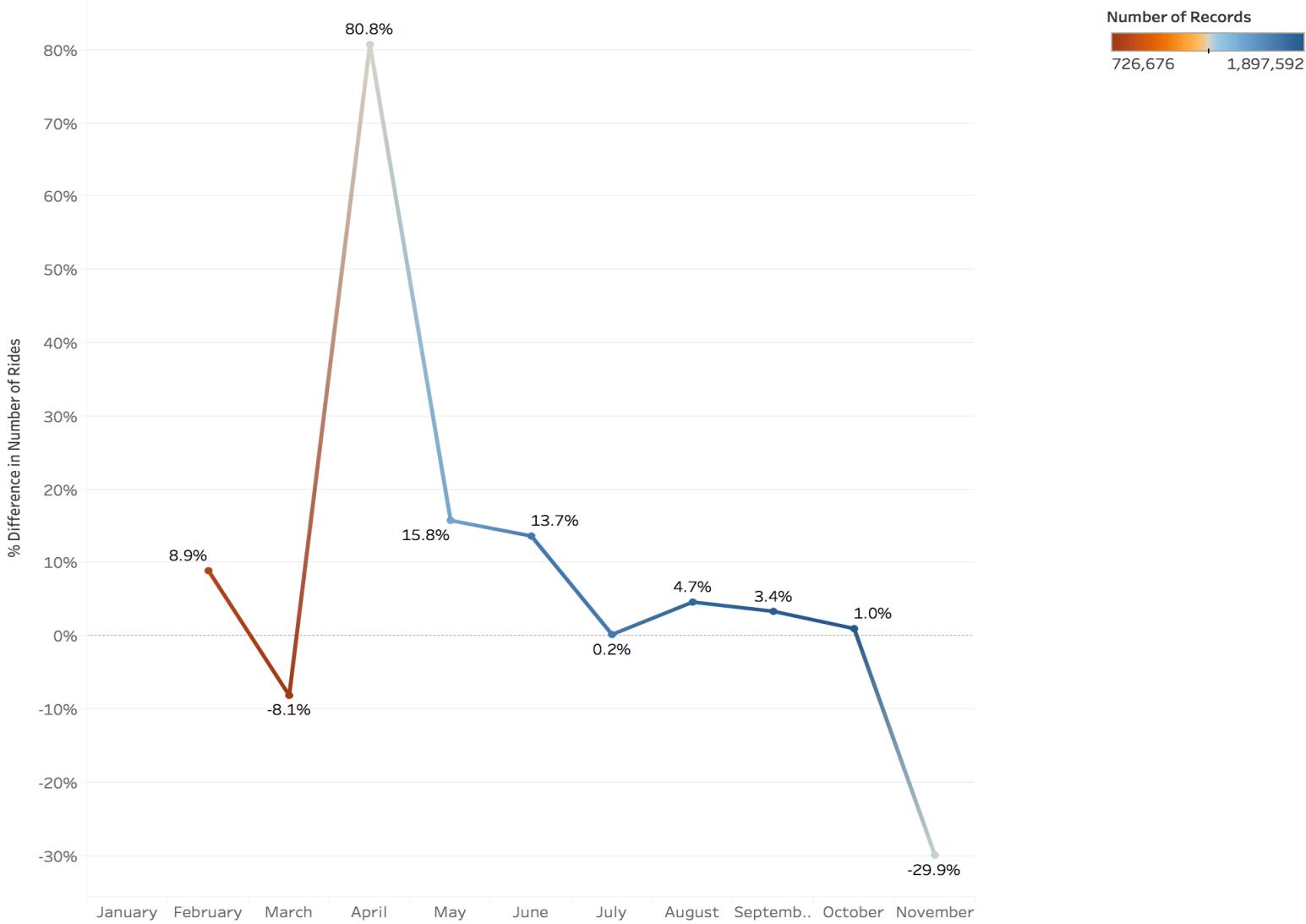
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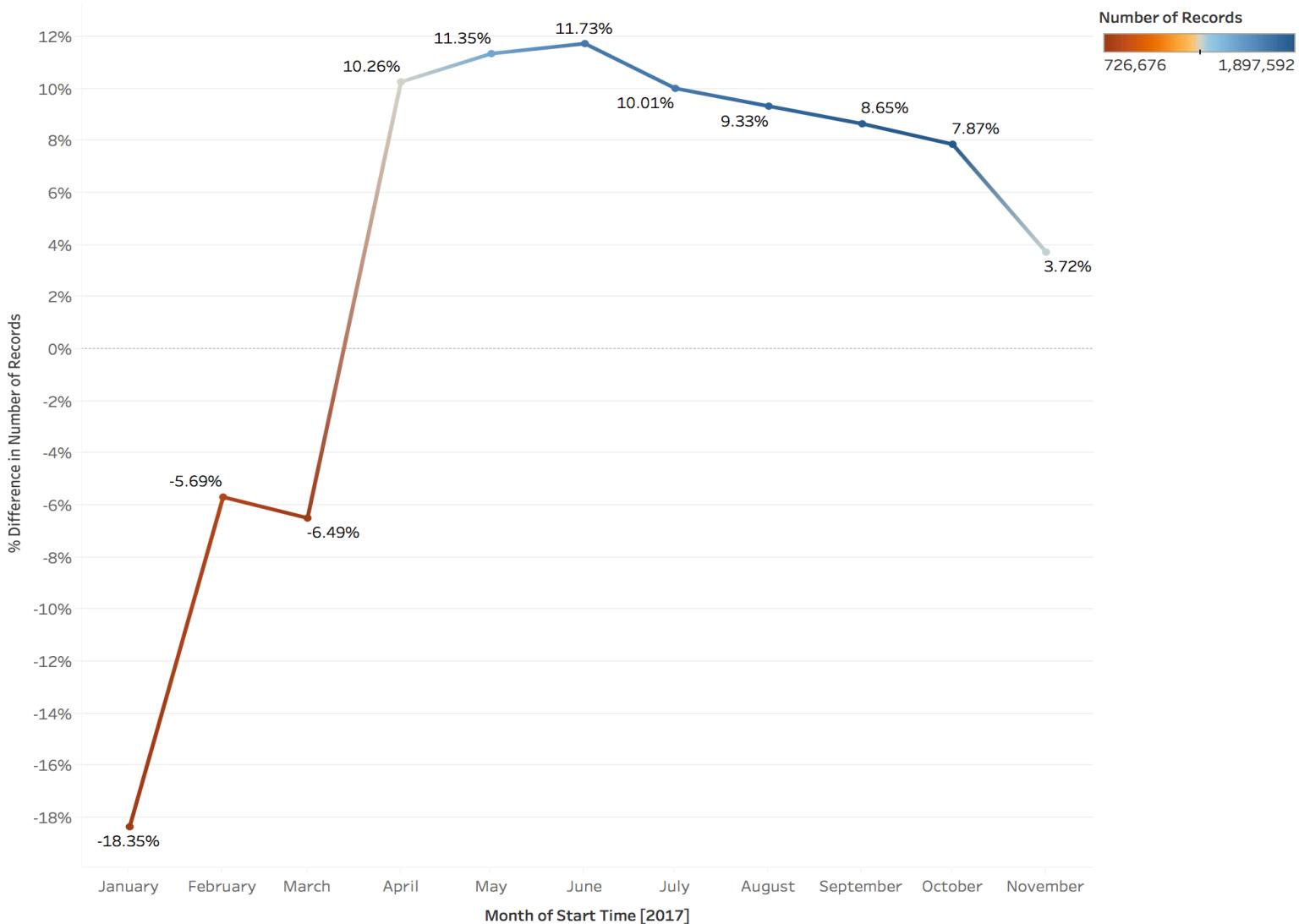
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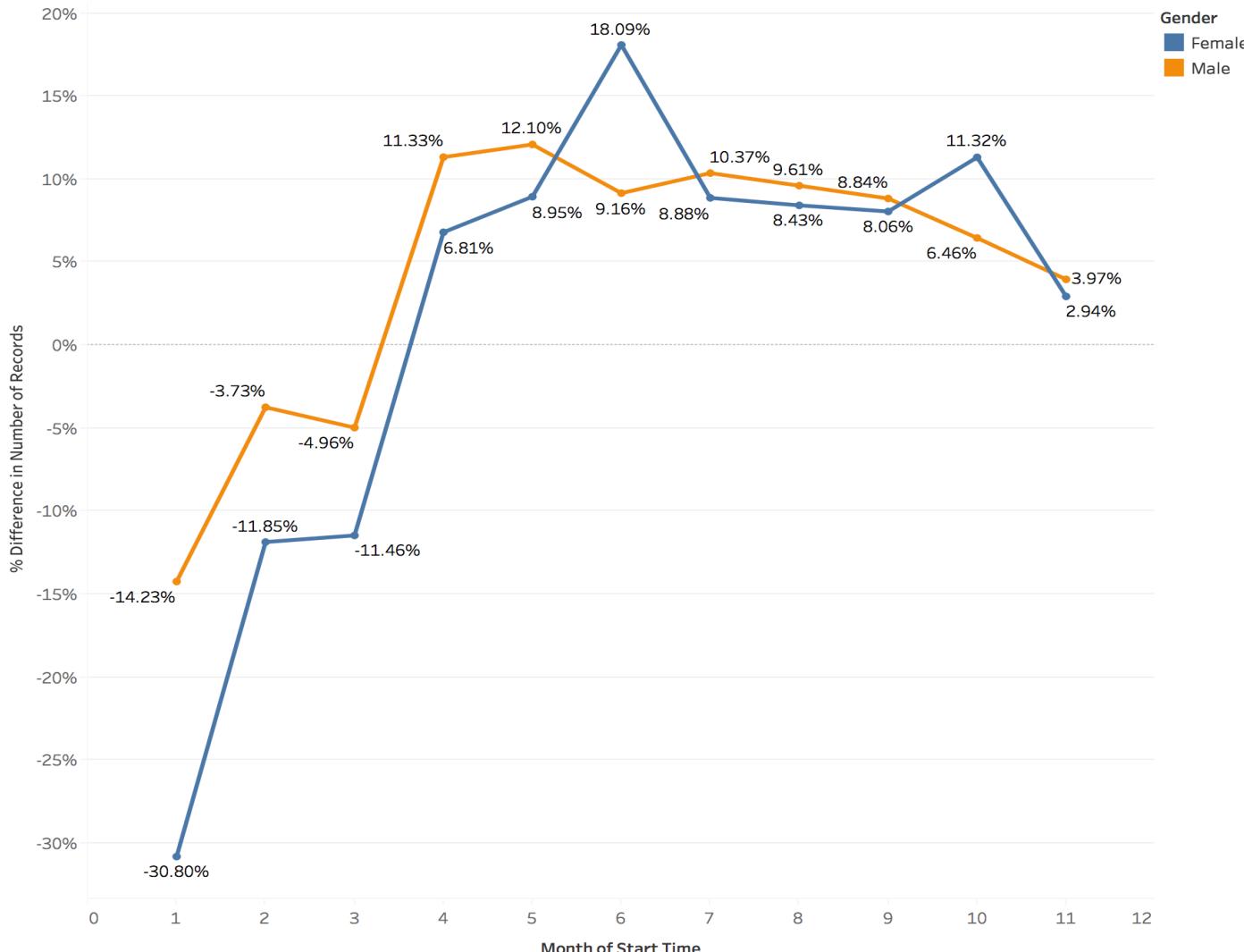
Subscriber
same

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Riders
among
Then c



Ridership Growth Analysis

Ridership declines in

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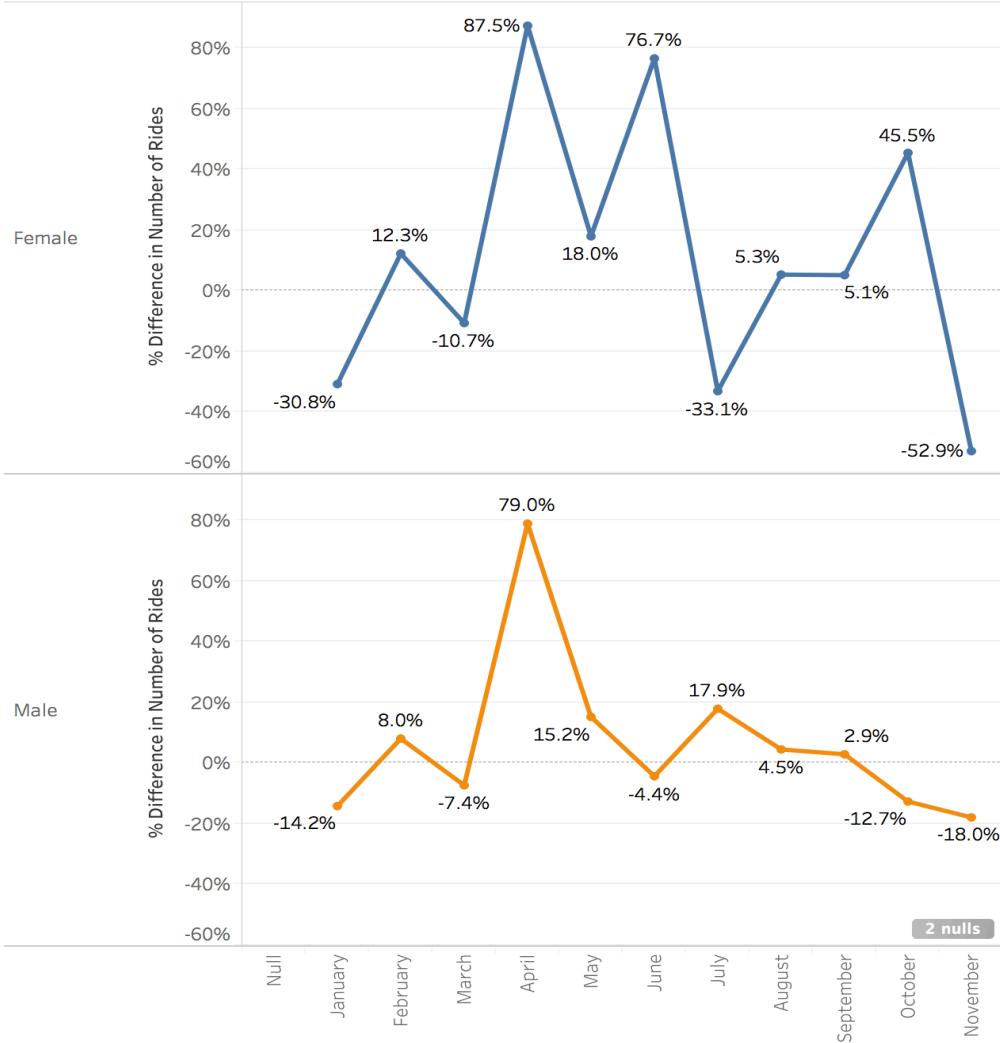
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Ridership growth follows the same path amongst male and female through May. Then diverge significantly thereafter.

Subsc April t



Gender



Gender

Female
Male

Ridership Growth Analysis

Ridership was positive through June.

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Subscriber base grows steadily through April then declined.

