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How is Uber changing Taxi in New York City

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Background

Uber - a location-based app

- a new riding model
- connects drivers and passengers and provides ride-sharing service with a fair rate
- has begun compete with traditional taxi

Dataset

- Uber Pickups in New York City
  - over 4.5 million Uber pickups April–September 2014
  - Variables: Pickup date and time, pickup address

- NYC Yellow-Taxi Trips
  - Match the Uber Dataset April - September 2014 and January - June 2015
  - The dataset about 1-2 GB for each month
  - Variables: such as Pickup date and time, longitude & latitude, trip distance, passenger count, dropoff date and time, dropoff longitude &latitude, payment amount

- Goals

- Generate an interactive heatmap that shows the information of Uber and Taxi
- Compare Uber and Taxi data during the same period by controlling filters
- Improve usability of our visualization system to make sure it is easy to use for users with different backgrounds

- SQL Server & Bokeh

- Use SQL Server to prepare data and speed up system
- Use Bokeh package to create interactive plot in a quickly and easily way

```
1 select top 10 * from [dbo].[yellow_tripdata_2014-04]
2 --alter table [dbo].[yellow_tripdata_2014-04] drop column [RATE_CODE]
3 --add - migration Missing[RATE_CODE] -IgnoreChanges
```

PASSENGER_COUNT	TRIP_DISTANCE	PICKUP_LONGITUDE	PICKUP_LATITUDE	RATE_CODE	STORE_AND_FWD_FLAG
1	2.4	-73.96929	40.75857	1	N
1	0.7	-73.97129	40.76607	1	N
1	2.5	-73.9746	40.76189	1	N
1	1.5	-74.00024	40.73138	1	N
1	0.7	-73.95563	40.77688	1	N
1	2.3	-73.97602	40.75673	1	N
1	1.1	-73.98718	40.72884	1	N
1	1.5	-73.99759	40.73653	1	N
		-73.96495	40.76899	1	N

tension/Resources/resourceType/Microsoft.Compute%2FVirtualMachines

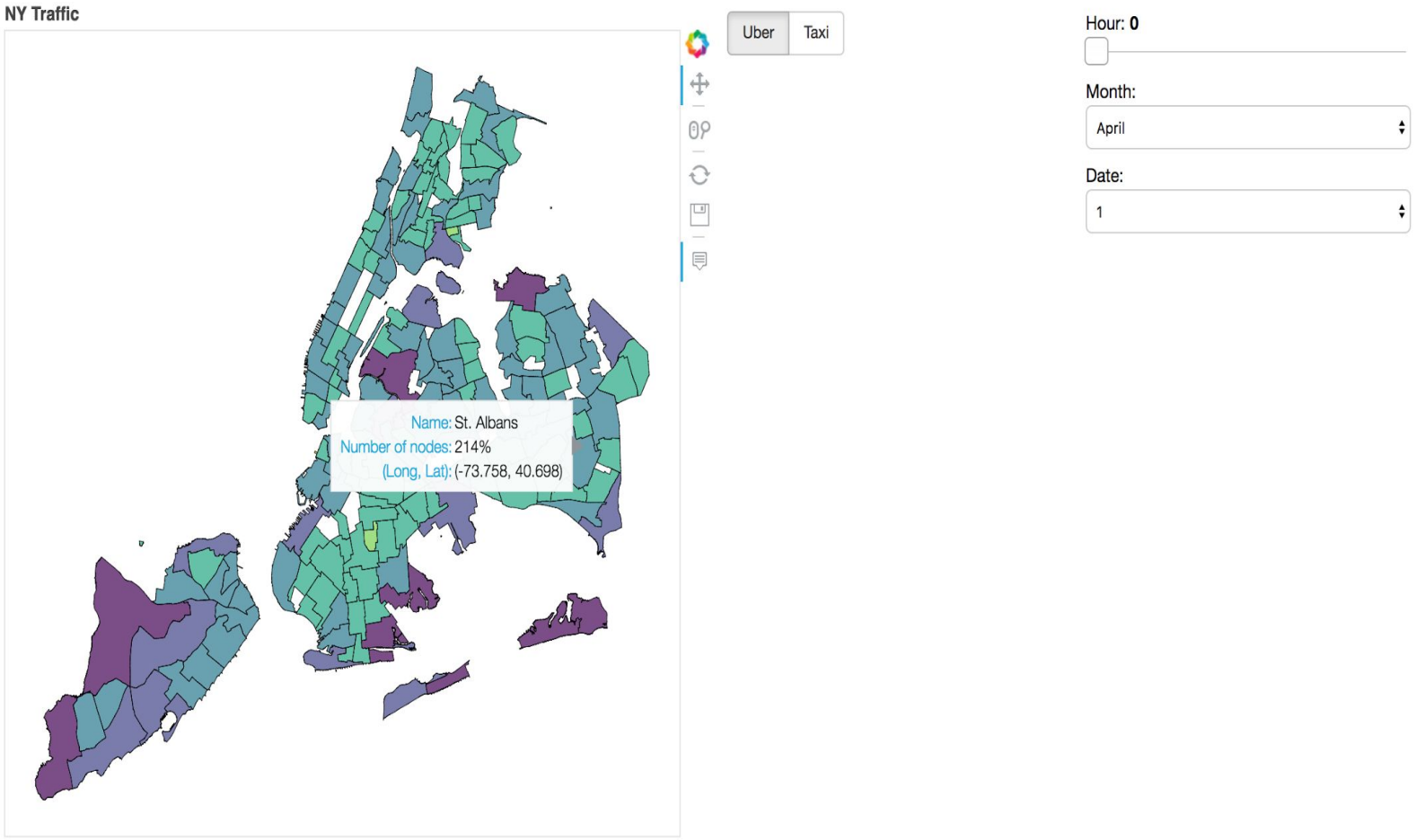
Target Users

- Uber drivers
  - locate popular pickup locations
- Researchers
- Government

Use Case

- Analysis of traffic in different locations
  - Use map+heatmap
  - Use color to represent traffic intensity
- Comparision traffic of different dates
  - Slider and dropdown to choose date
- Comparison of taxi and Uber
  - Checkbox

Demo


NY Traffic
Uber
Taxi
Hour: 0
Month:
April
Date:
1
Name: St. Albans
Number of nodes: 214%
(Long, Lat): (-73.758, 40.698)

Future Features

- At this point, we are only working on the Uber dataset in New York City between April and September in 2014. However, we'd like to Expand more Uber dataset if possible.
- Right now, we are focus on the counts of pickup for each Neighborhoods. We think, it would be great if we could narrow down to street name within each neighborhood.
- Constructure a similar heat map to compare uber and yellow cap in Seattle.
- We'd like to add some features by using the Uber Rides API in the future.

  (It would give us more information regarding to our uber pickup dataset. Such as trip distance, price and so on. Then we will be able to include more visualizations comparing the Uber and Yellow taxi).

Thank you ~