University of Regina

User Guide for Executive
Envisioning Yellow Taxi Demand in NYC City

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1. Synopsis

The Envisioning Yellow Taxi demand in NYC is a web application which is very useful for the taxi drivers living in New York City to find the number of pickups in a particular area. This document will serve you as a guide for the executives and how it can be used to grow the business.

2. Connecting to Site
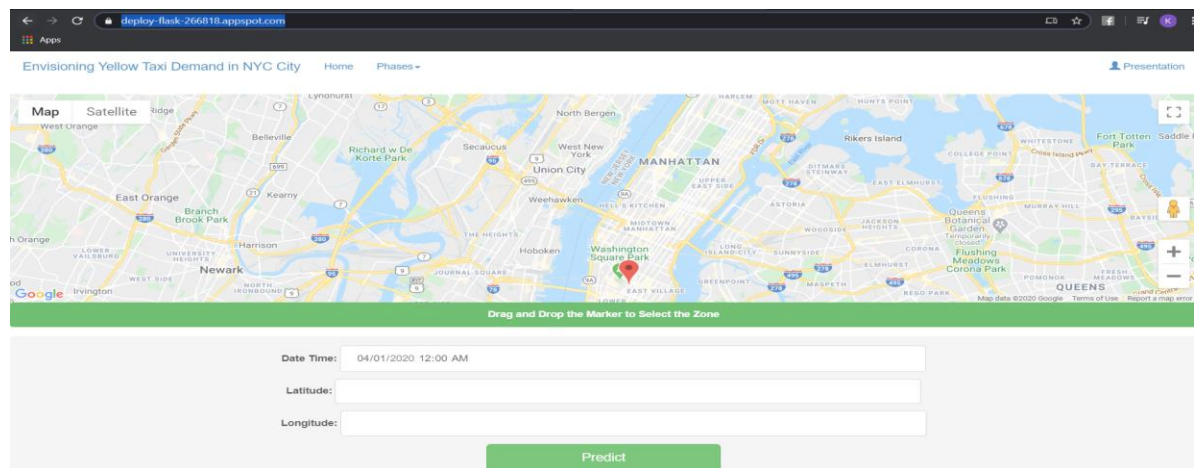
Use the URL given below to access the site:

https://deploy-flask-266818.appspot.com/

Figure 1 Displays home page

3. Processes

To start off with the application, user first needs to follow the steps shown below: (Refer to Fig 2)
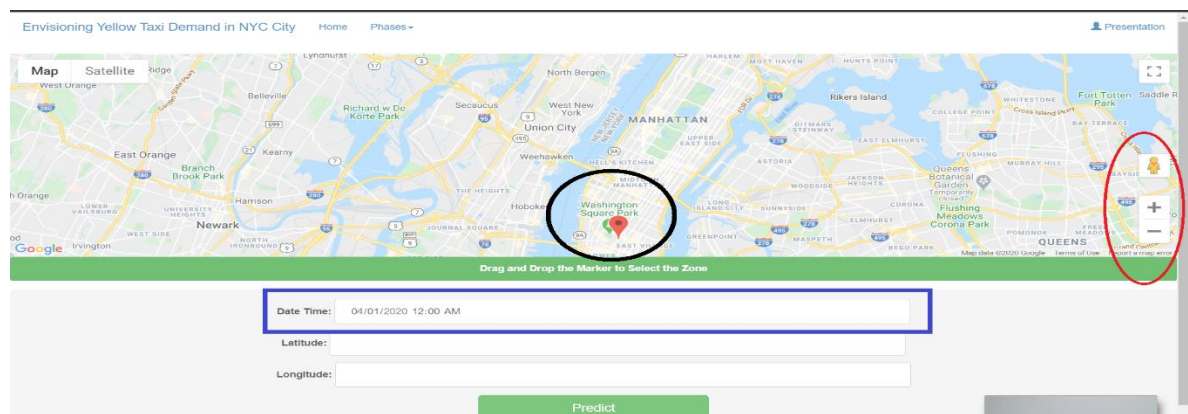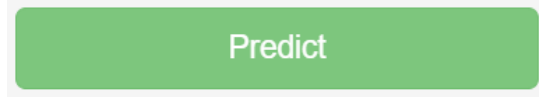

Figure 2 . Home Page

- Select the pin and move around in the map to select the location in the NYC (see the Fig 2 circled Black)
- Zoom in and zoom out on the map as circled in red in Fig 2
- Select the date and Time in the field highlighted in the blue box

Once the appropriate location, date and Time are selected on the homepage then hit **PREDICT**

Considering the scenario below:

Taking the Manhattan Location from the map and pick the suitable date and time. After that hit *Predict*.

Date Time:	04/09/2020 01:00 PM
Latitude:	40.783058798022346
Longitude:	-73.971238571167

3.1 How Prediction Can be Effective

Once you hit predict you will be able to see the predicted pickups against the targeted zone. Considering the above scenario, the Zone name is Upper West Side South and the number of expected pickups is 367 at the selected date and time that is **04/09/2020 01:00 PM.** After that hit the cross ✕ button. See the figure below:
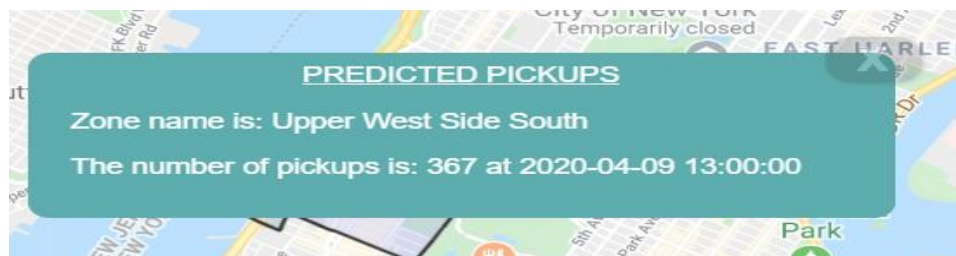

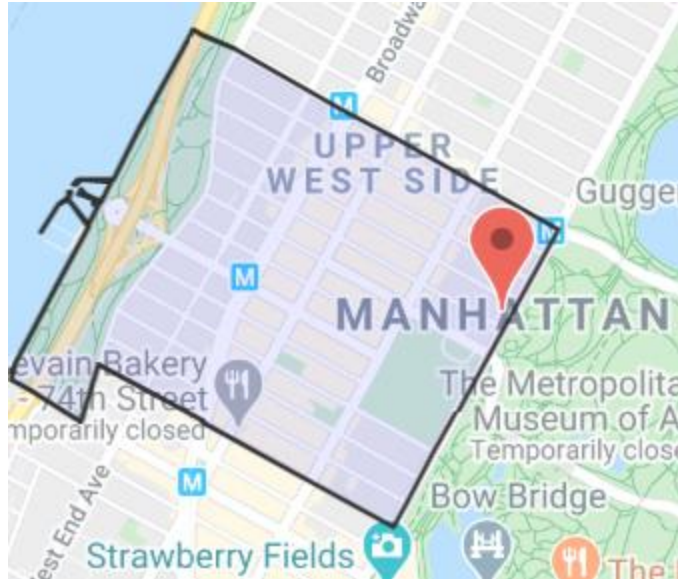**Figure 3 Predicted number of Pickups displayed on the Map**

2

Figure 4 Zone highlighted on the map to see the number of pickups

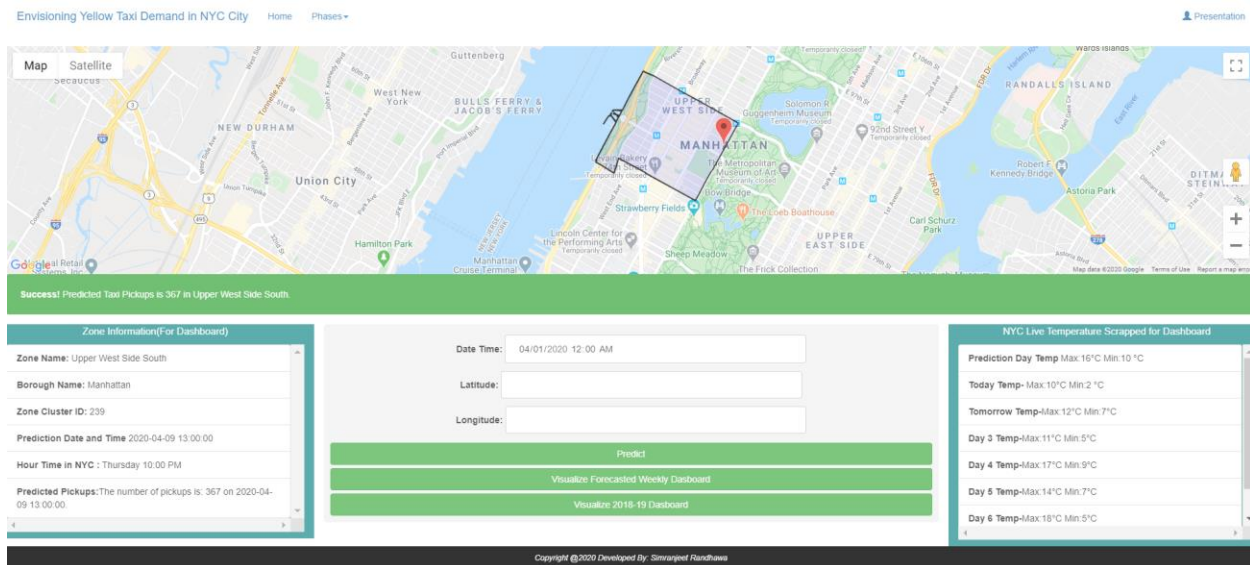In the Fig 4, the zone is highlighted on the map.

Figure 5 **Full view of home page when a zone is selected**

3.2 Zone Information can be seen by the Executive

Once the desired zone in NYC is selected on the map then the Zone information and NYC live Temperature is displayed on the screen at the lower left and right corner of the screen.
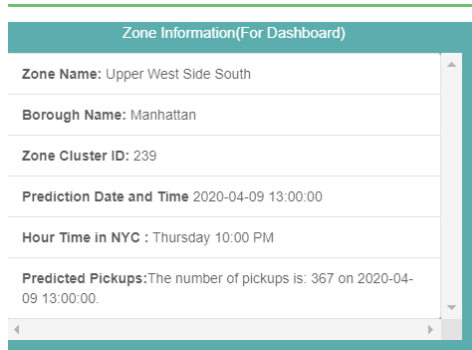
Figure 6. Zone Information displayed on the homepage

3.3 Temperature also effect or not can be seen by the Executive

The Zone information which is on the left corner of the screen displays the zone information that includes the zone name, borough name, zone id, predicated date & time, hour time and predicted number of pickups in the zone that is selected.
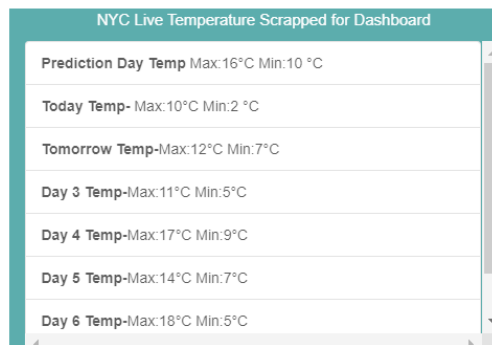

Figure 7. Live NYC temperature displayed on the homepage

The Zone temperature is displayed on the right corner of the homepage which is accurate and can be compared with other platforms to check the accuracy of the data.

Figure 8. Compare the temperature from the google to check the accuracy of the application's data

NYC min and the max temperature is searched on Google to check the accuracy of NYC live temperature that is displayed on the Envisioning yellow taxi demand application.

Figure 9. Click on Visualize Forecasted Weekly Dashboard

3.4 How can Executive Visualize weekly prediction

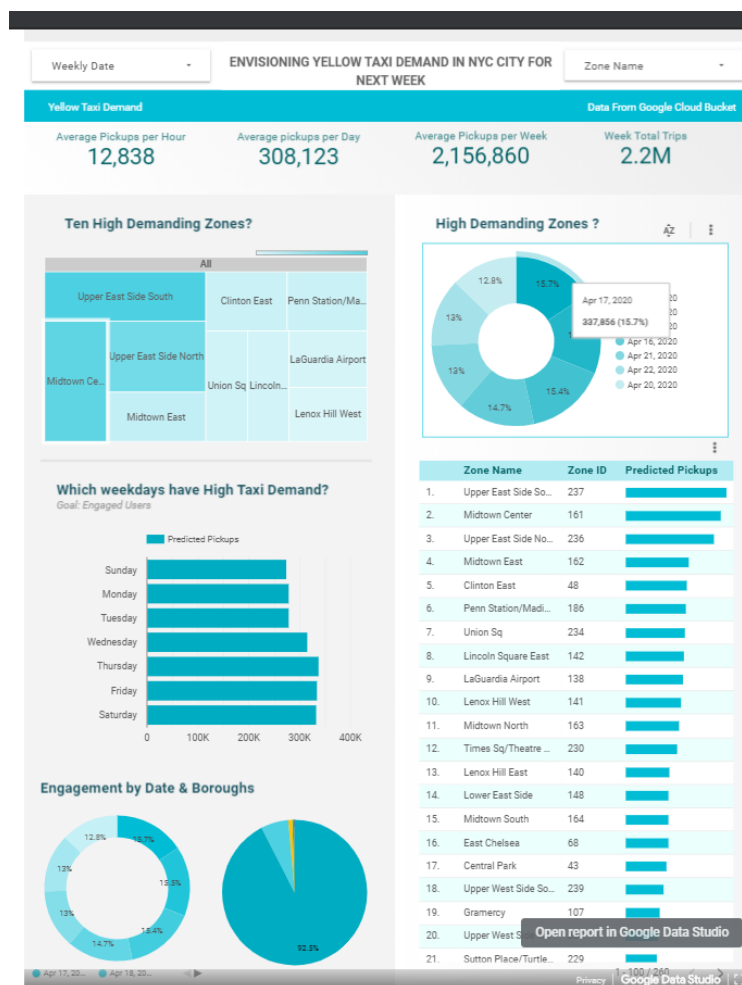After that click Visualize **Forecast Weekly dashboard** as highlighted in yellow in Fig 9.

Figure 10. Forecast Weekly Dashboard view

Once you click the Forecast Weekly dashboard as shown in the figure. For a better display open the same page in **Google Data Studio** as shown in Fig 10.
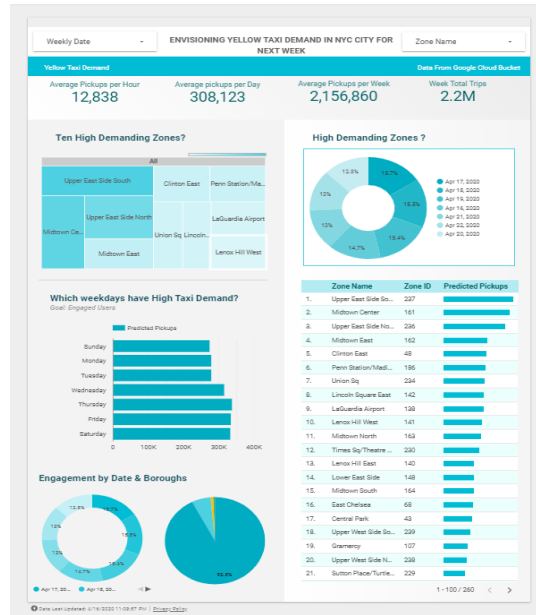
Figure 11. Forecast Weekly Dashboard view in Google Data Studio

Dashboard view on Google Data Studio. The Dashboard displays the following:

- Average pickups per:
    - Hour
    - Day
    - Week
- Average week total trips
- Ten high demanding zones
- High demanding zone
- Weekends having high taxi demand
- Engagement by date and boroughs
- Zone demand

3.5 Executive can see the actual numbers

In Upper West Side South there are **12,838** pickups per hour, **308,123** pickups per day and **2,156,860** pickups per week. The dashboard also tells the Week total trips for the upper west side south zone that is **2.2M** as shown in figure 11.
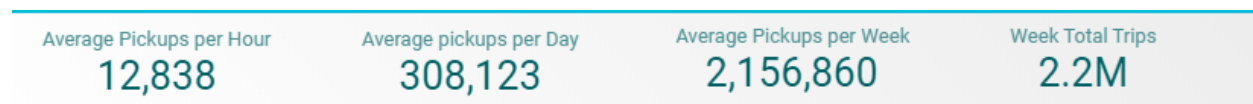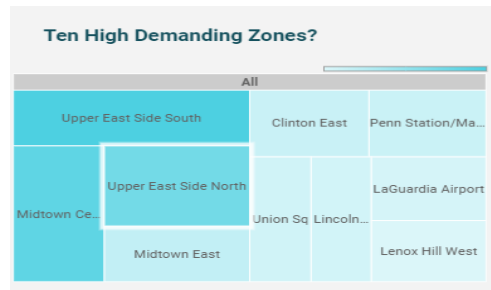

Figure 11. Average pickups

Figure 12. Ten high demanding zones

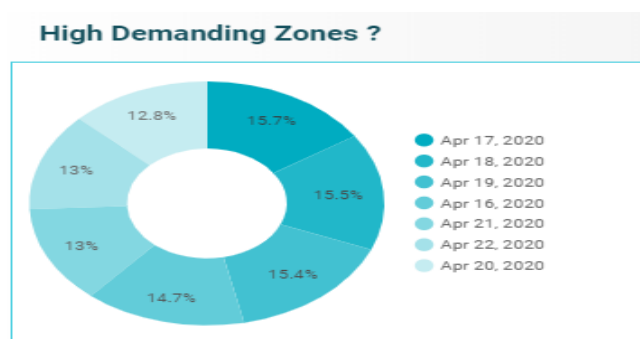The Dashboard also illustrates the ten most high demanding zones as shown in the Fig 12.

Figure 13. High demanding zones

3.6 Insights from Visuals

The pie chart shown on the dashboard predicts that on **April 17, 2020,** in Upper West Side South there will be the highest number of the pickups as compared to the other days in a week. Refer to Fig 13
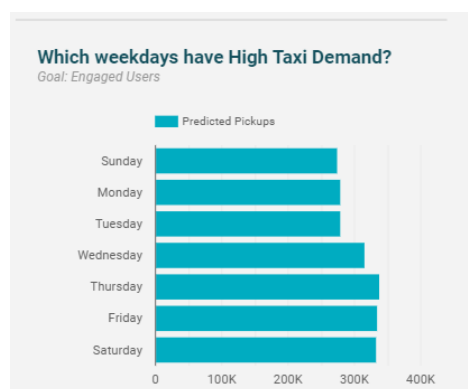

Figure 14 **Weekends having high taxi demand**

The bar chart shows all the days and their demand. Considering the example taken above, on Thursday in Upper West Side South there will be a high taxi demand. This data will help the taxi drivers to look for pickups on Thursdays or any other day that is suitable for them which has the highest demand. (Refer to Fig 14)

Figure 15 Chart displaying Zone name, ID and predicted number of pickups scale

In Fig 15, On the dashboard, zone name, zone ID and their predicted number of pickups shown in the form of a table

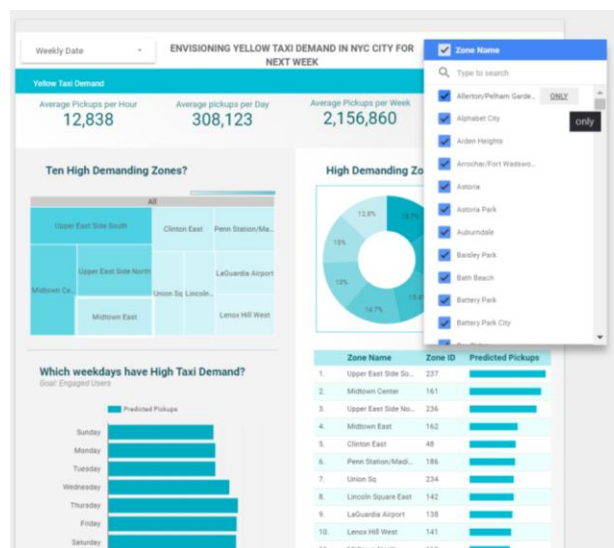## 3.7 How Dashboard can help the Executive

Figure 16.a. <u>Only</u> → Select the appropriate zone name

In order to just select a particular zone, click on **Zone Name** and select the desired zone name by clicking **<u>ONLY</u>** as shown in the figure.
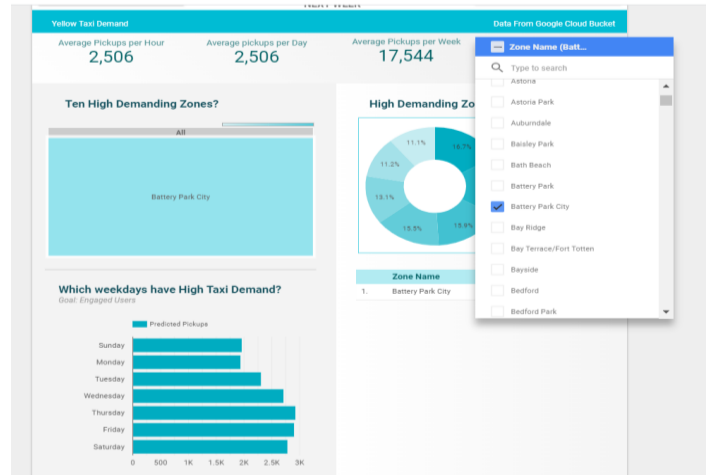
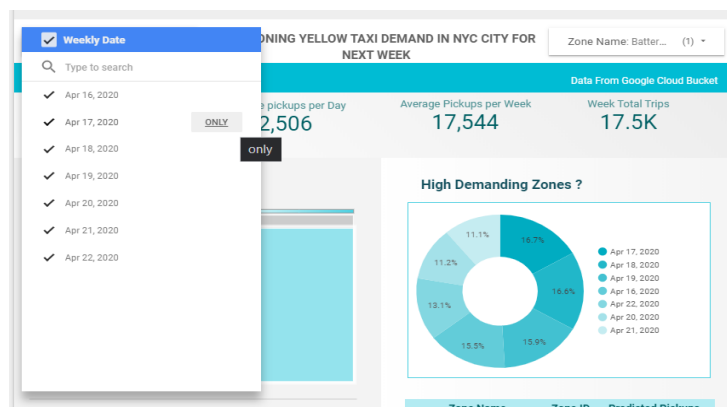E.g Lets select Battery Park City from the Zone name that is on the upper right corner. (Refer to Fig 16)

Moreover, the user can also select the desired date by clicking the upper left corner of the dashboard to see a clearer picture of the day in a week. Refer Fig 17.

The user can also see the historical data from the previous years **2018-19** to see the trend by clicking the **Visualize 2018-19 Dashboard** option on the Homepage. See the above Fig 18.
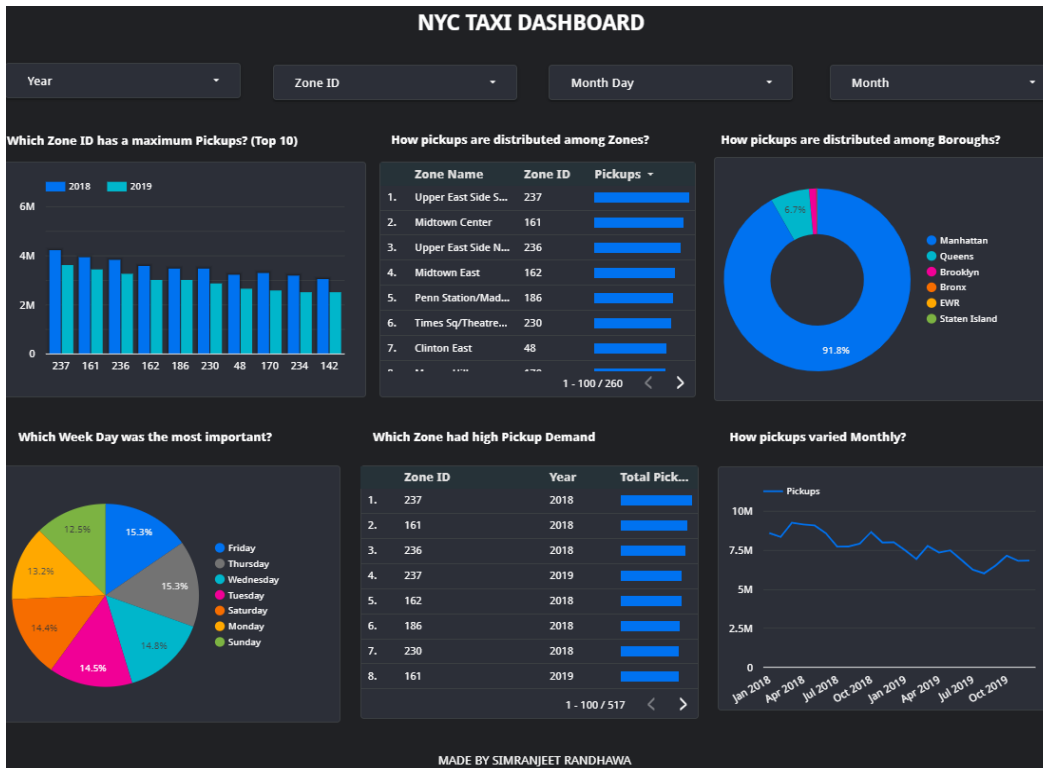
Figure 19. Full view of Visualize 2018-19 Dashboard

Once the user clicks the **Visualize 2018-19 Dashboard** option, then the application takes you to another dashboard where the user can see the trend from the **2018-19** and compare it with the recent year that is **2020**.
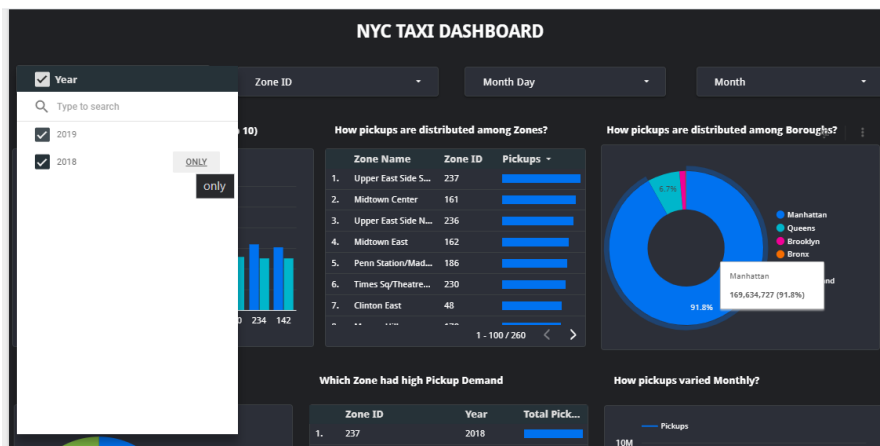

Figure 20. Select the year from Visualize 2018-19 Dashboard

In order to see a clearer data display of a year then the user can easily select the year individually by just clicking the upper left corner of the screen . ✓ **Year** See Fig 20.

Figure 21 View of Historical data from year 2018 on Visualize 2018-19 Dashboard

The Historical data that is represented in Fig 21 consists of the following components:

- **Which zone ID has a maximum Pickups? (Top 10):**
  Displays a bar chart with the maximum number of pickups. E.g in 2018 Zone ID 237 had the maximum number of pickups.

- **How pickups are distributed among zones?**
  Distribution among zones with respect to their zone name, ID and pickups.

- **How pickups are distributed among boroughs?**
  Pie chart illustrating maximum pickups among Boroughs. E.g in 2018 Manhattan had the highest number of pickups approximately 92.1%.

- **Which weekday was the most important?**
  Pie Chart showing the most popular day of the week with the highest number of pickups. E.g Thursday 15.1 %.

- **Which Zone had high pickup demand?**
  Demand displayed Distribution with respect to their zone ID, year and pickups.

- **How pickups varied Monthly?**
  Graph illustrating the trend in 2018 with respect to months and number of pickups

4. Contact Information

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