NEW YORK STREET TREE CENSUS 2015 ANALYSIS USING R SHINY DASHBOARD

PRESENTED BY: **GROUP 6**

MASTER OF PROFESSIONAL STUDIES IN ANALYTICS

ALY6070 21601: Communications and Visualization for Data Analytics

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To: **PROF. MYKHAYLO TRUBSKYY**

Introduction

The New York Street tree data was collected in 2015 by staffs and volunteer of NYC Parks & Recreation and associated organizations. It incorporates overall count, health status, associated problems, location etc. of the trees. We have utilized this data to perform an in-depth analysis using R language and prepared an interactive dashboard using R Shiny package reflecting multiple parameters related to these trees such as borough-wise count, tree species, health, and problem. This dashboard is having a side bar layout which consists of a side navigation panel for user-input intake and a main panel to reflect the visual plots and related texts corresponding to the inputs.

While scripting we have taken certain measures to improve the data loading and processing time by utilizing *reactive* method by including the variables related to the user input. Also, we have created the *RData* file to speed up the data loading process in the dashboard.

Audience of Dashboard

From this dashboard, we are expecting the below audiences may benefit using the concise and interactive environment:

1. **Municipal Urban Forest Management:** The group can effectively utilize the data for planning and providing care and management trees in urban setting.
2. **Citizen Engagement Team:** This data can be leveraged by government engagement teams to form interactions with citizens and plan to work collaboratively to implement policies.
3. **Department of City Planning:** Tree census data can be used by this department to improve urban life. It can be used to carry out numerous activities like establishment of public parks, planning for long term city management process etc.

Dashboard

Web Access

Please click the Dashboard to visit our published dashboard online.

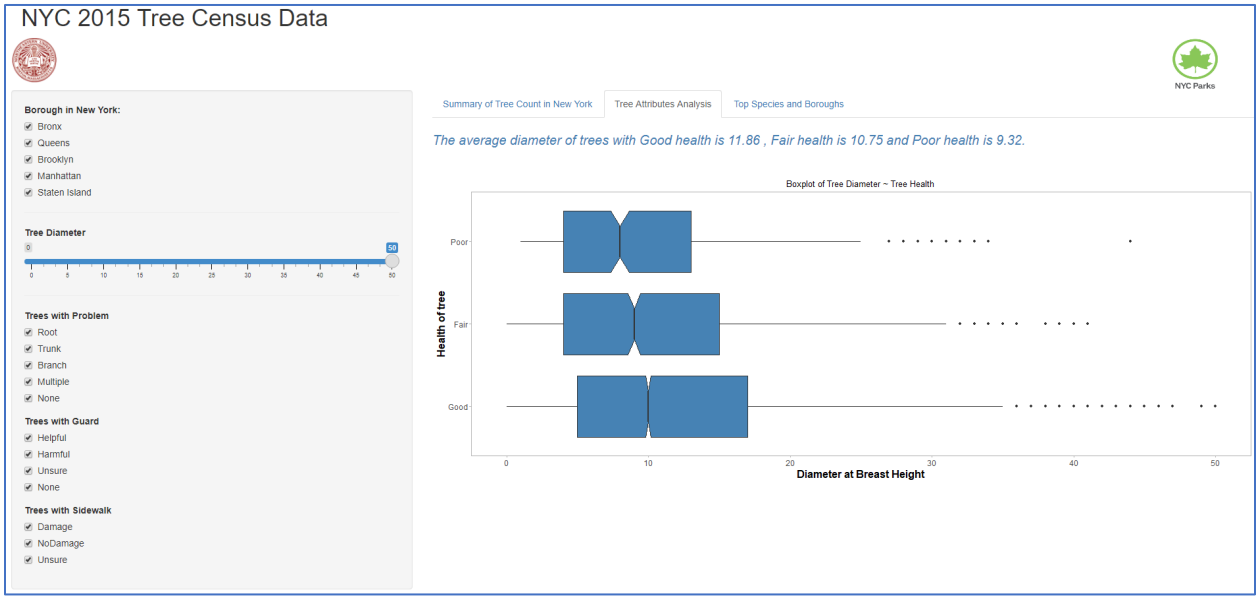
Dashboard description

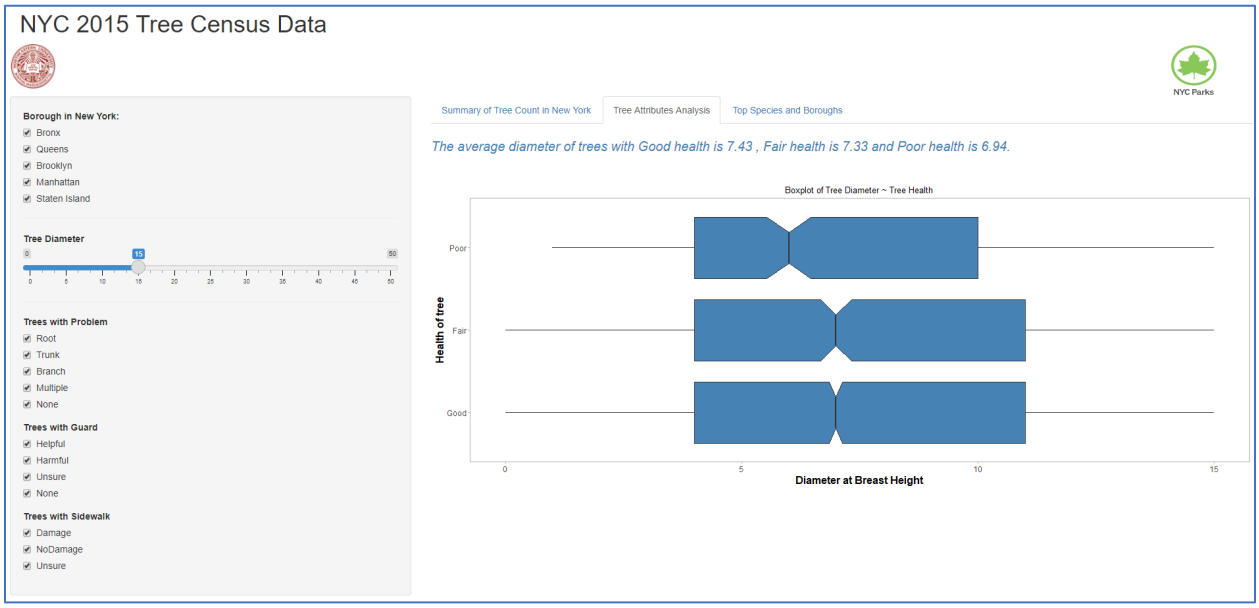
As we come across the dashboard, users might prefer to observe the overall statistics of the New York tree data by observing its count distribution across the city boroughs.

From the above tab '***Summary of Tree Count in New York***' displays the overall count status of the trees in New York by default along with the health count based on their categories.
Along with that it presents the count of trees present in each borough. This data can be filtered using the sidebar panel widgets where we can filter the tree counts using either:

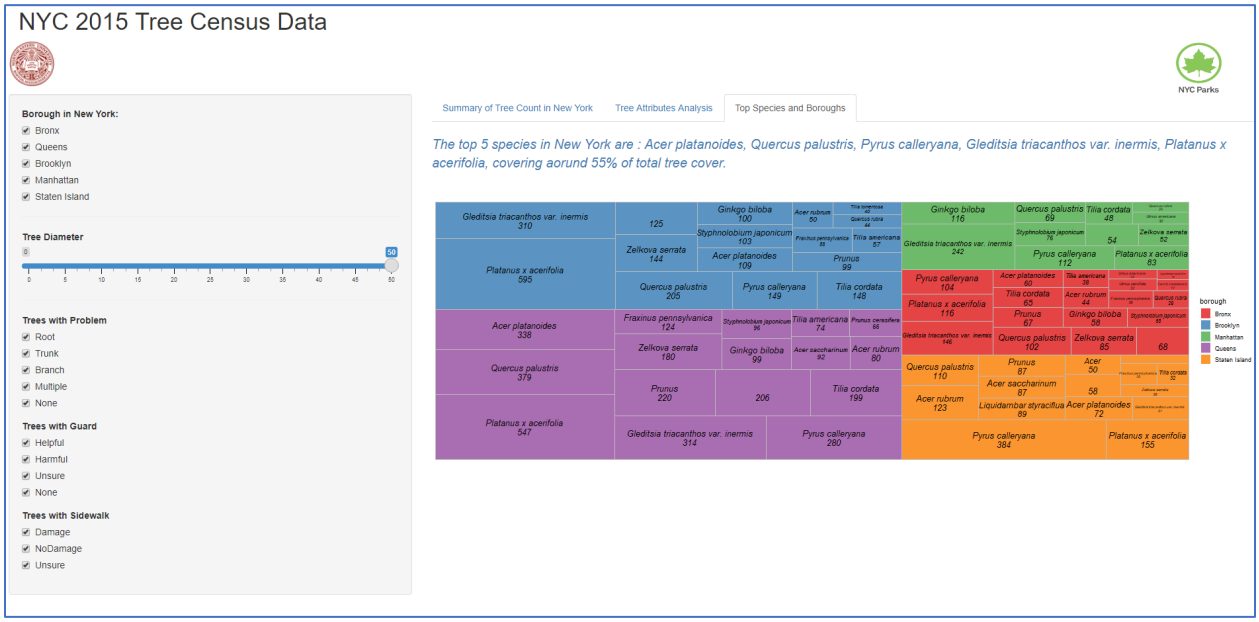
- Borough name
- Tree Diameter
- Problems related to trees
- Guard status
- Sidewalk status damage

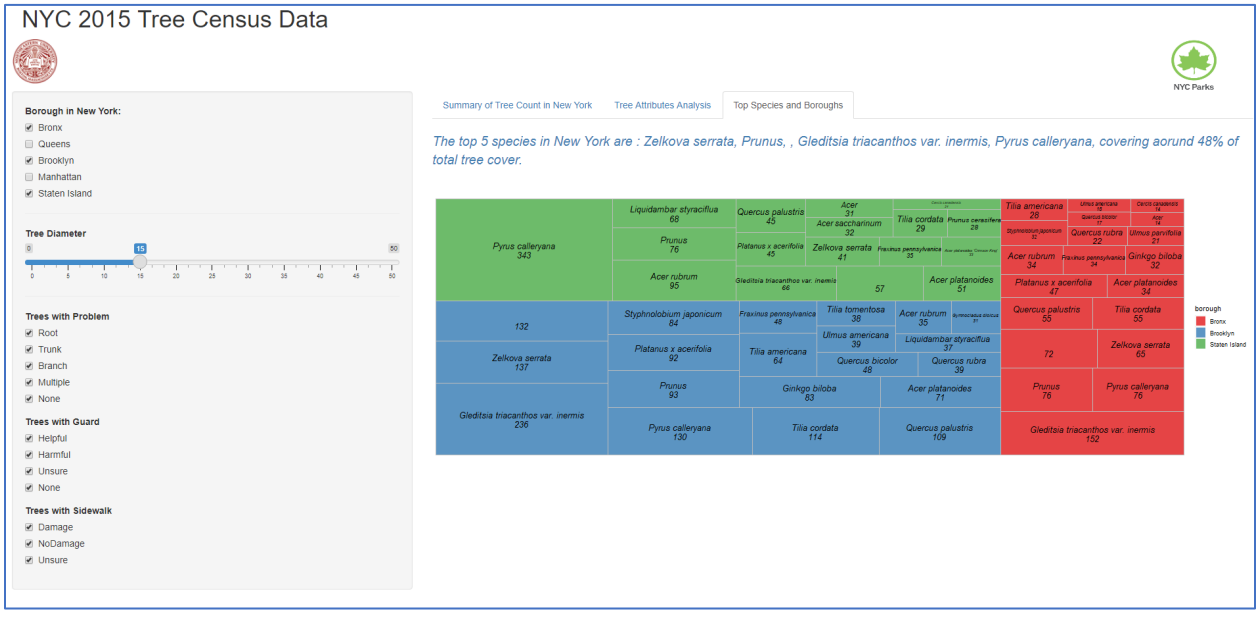
Over the second tab, '***Tree Attributes Analysis***', uses can observe the structure of tree based on its diameter corresponding to the health status. It provides user with information about the count of trees with 'Good', 'Fair' and 'Poor' with the filters from the side panel enabled. The below boxplots present the distribution of trees with range of selected diameter health-wise.





The third tab, '***Top Species and Boroughs***', portrays a *TreeMap* visual which helps user understand the top available species in New York corresponding to the boroughs selected and their count with the filters applied. Here, the size of the box represents the abundance of the tree species in respective area.





References

1. *TreesCount! 2015 : NYC Parks*. (2015). NYC Parks. https://www.nycgovparks.org/trees/treescount

2. What is a data dashboard? (2021). Klipfolio. https://www.klipfolio.com/blog/what-is-a-data-dashboard