Final exam
Computing for Sustainable Urban Environments
Spring 2021
NYU Tandon

The final will comprise of two projects:

1. Group project: 50% of your grade
2. Individual project: 50% of your grade

1. Group Project:

Get yourself familiar with the Census API and the Census API notebook. Building upon the work done you will need to identify and develop one more component that could enable accessing new data or conducting additional analysis on the fetched data. In your notebook, explain what value your work can add to future users and how you have developed it.

Delivery:

On NYU classes: submit a Github url including your Jupyter Notebook. Important: make sure the url works and is public before submitting. The notebook should include full code, maps, data visualizations, outputs and explanations as well as a description of who did what in the project.

Grading:

You will be graded on the quality and originality of your work. In addition, grading will account for a clean, precise, well organized and documented notebook.

Team work:

The notebook should be a collaborative work between you and all your classmates. Therefore, everyone should take an active role in the notebook creation process. Consider using Google Colab or other collaborative tools to facilitate collaboration. All teams must meet at least twice outside of class to check-in, prepare the project and divide the work.

2. **Individual project:**

Using the evictions data from NYC Open Data conduct the following data analysis:

1. Describe the data, its structure, data types, formats etc
2. Divide the data into years, describe how evictions trends have changed in each year in the data. What year had the largest number of evictions? Which one had the smallest number of evictions? Discuss your findings and describe what were some of your assumptions?
3. What is the ratio of commercial to residential evictions in the entire data? Was this ratio constant over time (calculate it separately for each year in the data)? Visualize the data for each year and discuss the trends you found.
4. What are the **full names** of the top 5 eviction marshals (those who conducted the largest number of evictions over time)?
5. How do 5 boroughs compare overtime in terms of the number of evictions in each? Discuss the findings and compare them to each borough's population counts.
6. Visualize the data as a choropleth map using NTA level, when the different shades represent the number of evictions in a particular NTA. Discuss your findings.
7. Can you think of one additional socio-demographic attribute that may affect the number of evictions in a particular neighborhood? Fetch data on that attribute and visualize it side-by-side with evictions or in the same map. Discuss your assumptions and findings as well as possible connections.

Delivery:

Submit a Github url including your Jupyter Notebook. The notebook should include full code, maps, data visualizations, outputs and explanations.

Grading:

You will be graded based on the quality of your work, the organization of the notebook and on your ability to communicate and describe your workflow, decisions and discuss the results. In addition, grading will account for a clean, precise and well organized and documented notebook.