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TARGET SHIP DATE: May 30, 2023

Game: How well do you know NYC?

Overview: Inspired by the higher or lower game, our project will feature an interactive game where users compare two different neighborhoods based on an arbitrary data set. For each round, users will face a predetermined order of data sets, such as the number of street trees, or teacher salaries, in two randomized boroughs or neighborhoods around NYC. They will be asked to compare the two, with a question along the lines of "Which neighborhood has more squirrels?" or "Which borough has a higher average teacher salary?" After users answer a question, they will see an interactive map of NYC that shows the data set across all neighborhoods in NYC. This will be done via different colors indicating higher amounts/densities. Around ten datasets will be included, and after ten rounds users will see their total percent correct and get a ranking of how well they know NYC!

Program Components & Roles

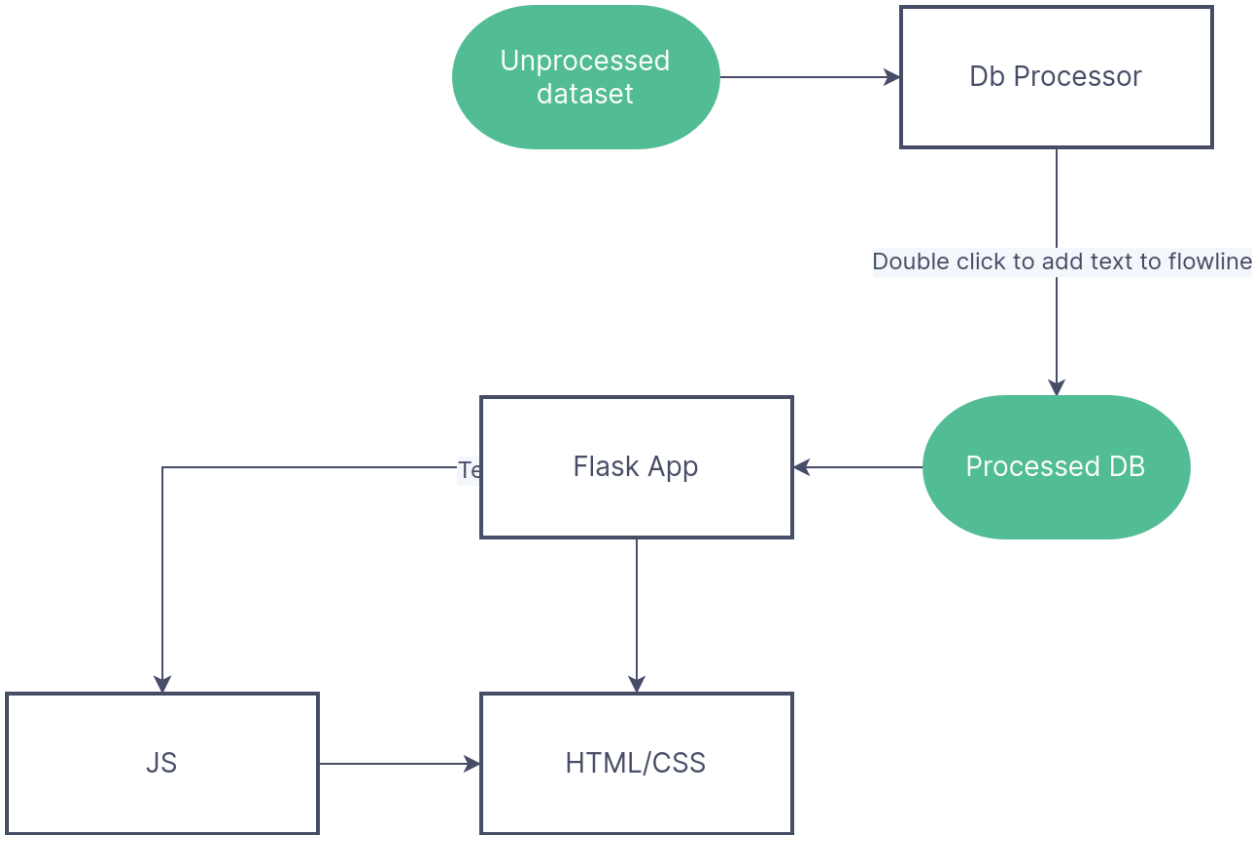
- HTML/CSS - pages to display home page, and spaces for js to operate our game in the game page. Also, a victory page and a map
- JS (all) - render dynamic elements like our interactive leaflet map, and dynamically change what is on the web page based on what the user inputs
- DB Processor - preprocess our data to make it easier for our JS to quickly access. Almost all work is preprocessed by a python script.
- SQLite DB - holds our data in a standardized form so it can be easily accessed
- Flask App - serve our web pages, feed data to html/js
- Frontend Framework (Bootstrap) - we plan on using its general styling features to make our buttons and other html elements look good.
- Interactive map using Leaflet.js

Data Sets:

- Teacher salaries - **done**

    - Subdivisions by profession, etc are not done
- Dog breeds
    - Subdivisions by breed not done
- Film permits - **done**
- Police Officer Complaints - **done**
- Street trees - **done**
- Population by Neighborhood tabulation area
- Public recycling bins - **done**
- Rat Inspections (september 2009 is the start) - **done**
- ~~School bus breakdowns~~ - **done**
- Water fountains - **done**
- Asbestos abatement - **done**
- NYCDEP Citywide Hydrants
- ~~Elevator Permits~~ - **done**

Component Map

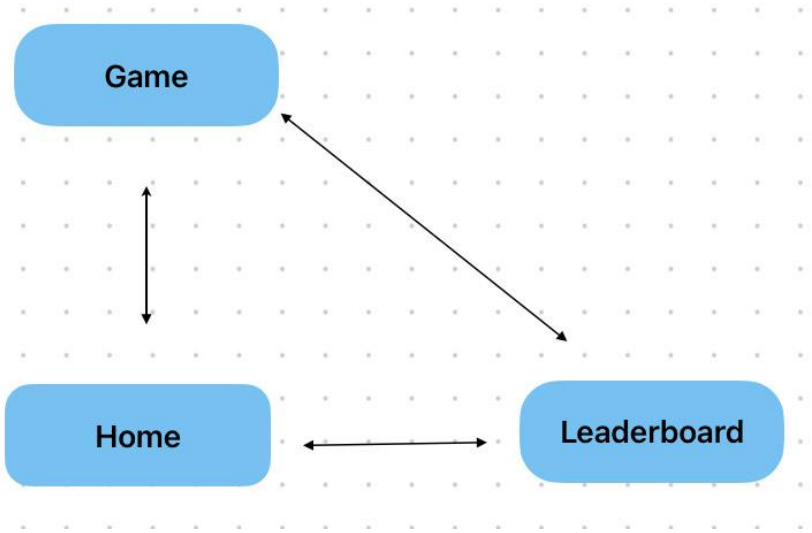


Database Organization Tables

- relational db - each db from openNYC goes in their own sqlite database.

db_name	Brooklyn	Bronx	Manhattan	Queens	Staten Island
db1					
db2					
db3					
…					

Site Map



Tasks & Roles

[Tentative]
Ameer:Leaflet.js
Maya: HTML
Sam C:Database interaction
Sam L: Javascript

Areas for Expansion:

- Images for each category appear (eg. pics of squirrels & teachers)
- Borough boundaries using shapefile instead of bubbles

- Other game expansions: correlation comparison between two data sets (original idea)
    - Gives you an over/under correlation coefficient, if you get it right it gives you a new one compared to the old one
    - Leaderboard
    - Will likely have to be implemented by splitting maps up into grids and creating data points for each grid.
    - Correlation coefficients will likely just be pre-calculated, to be referred to later by the website.

Other Links:

- https://tylervigen.com/spurious-correlations
- https://twitter.com/YouGovAmerica/status/1504199606430744581
- https://geo.nyu.edu/catalog/nyu_2451_34572
- https://codekarim.com/sites/default/files/DP0701EN-3-3-2-Neighborhoods-New-York-py-v1.0.html#item2
- https://app.zenflowchart.com/flowchart/dTjjDcxyffz72rD8NXKf
- https://data.cityofnewyork.us/City-Government/2010-Neighborhood-Tabulation-Areas-NTAs-/cpf4-rkhq
- https://gis.stackexchange.com/questions/264794/display-shapefile-with-leaflet-and-layer-control
- http://leaflet.calvinmetcalf.com/#12/40.6851/-74.0808
- https://observablehq.com/@rayortigas/leaflet-d3
- https://data.cityofnewyork.us/City-Government/New-York-City-Population-by-Borough-1950-2040/xywu-7bv9/explore/

To do:

- Add more datasets:
    - Breeds of dogs
        - **Puggles**
        - Pit bulls if there's time to run it
    - Payroll data
        - Office of mayor vs DOE
        - Firefighters vs poll workers
- Implement comparison of DIFFERENT datasets

More datasets:

- Firehouses
- Fires started

p4: NYC Higher or Lower by Yammers
Overview:
Inspired by the higher or lower game, our project will feature an interactive game where users compare two different neighborhoods based on an arbitrary data set. For each round, users will face a random order of data sets, such as the number of street trees, or teacher salaries, in two randomized boroughs around NYC. They will be asked to compare the two, with a question along the lines of “Which borough has more water fountains?” or “Which borough has a higher average firefighter salary?” After users answer a question, they will see an interactive map of NYC that shows the distribution of the data set across all boroughs in NYC. This will be done via different bubble sizes indicating higher amounts/densities. Thirteen unique datasets and nineteen unique questions are included and after the user strings together ten correct answers in a row, they are able to claim victory.

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Launch Codes:
Run:
```java
 git clone git@github.com:mayanelson/p4.git
 cd p4
 pip install -r ./requirements.txt
 cd app
 python3 __init__.py
```
Then it should appear at 127.0.0.1:5000

Also viewable on Newsify.social

Data
Our data is pulled exclusively from NYC OpenData, using their Socrata Open Data API. The following datasets were pulled from and stats from each borough are either averaged or counted up depending on the question:
- [Citywide Payroll Data](https://data.cityofnewyork.us/City-Government/Citywide-Payroll-Data-Fiscal-Year-/k397-673e)
- [Dog Licenses](https://data.cityofnewyork.us/Health/NYC-Dog-Licensing-Dataset/nu7n-tubp)
- [Film Permits](https://data.cityofnewyork.us/City-Government/Film-Permits/tg4x-b46p)
- [Police Officer Complaint History](https://data.cityofnewyork.us/Public-Safety/NYPD-Complaint-Data-Historic/qgea-i56i)

- [Street Tree Census](https://data.cityofnewyork.us/Environment/2015-Street-Tree-Census-Tree-Data/uvpi-gqnh)
- [Public Recycling Bins](https://data.cityofnewyork.us/Environment/Public-Recycling-Bins/sxx4-xhzg)
- [Rodent Inspections](https://data.cityofnewyork.us/Health/Rodent-Inspection/p937-wjvj)
- [School Bus Breakdowns](https://data.cityofnewyork.us/Transportation/Bus-Breakdown-and-Delays/ez4e-fazm)
- [Water Fountains](https://data.cityofnewyork.us/dataset/Cool-It-NYC-2020-Drinking-Fountains/wxhr-qbhz)
- [Asbestos Abatemants](https://data.cityofnewyork.us/Environment/Asbestos-Control-Program-ACP7-/vq35-j9qm)
- [Elevator Permits](https://data.cityofnewyork.us/Housing-Development/DOB-NOW-Build-Elevator-Permit-Applications/kfp4-dz4h)
- [Firehouses](https://data.cityofnewyork.us/Public-Safety/FDNY-Firehouse-Listing/hc8x-tcnd)
- [Fires Started](https://data.cityofnewyork.us/Public-Safety/Bureau-of-Fire-Investigations-Fire-Causes/ii3r-svjz)