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Target Ship Date: 05-24-23

SUMMARY OF MVP

We propose an app that specifically shows data relevant to residents of New York City, specifically for those that are interested in the real estate market. Once the user logs in, they will be able to complete a survey where they can rank their factors of preference in terms of what they are looking for in a potential home (however the actual recommendations will not be part of the MVP product).

Then, they will be able to access the home page. There, they will be able to browse an interactive city map where each data point is a neighborhood. By simply hovering over the neighborhood, they can see statistics like average household prices. If the user wants to learn more about the neighborhood, they can click on the More Info Link available in the pop up, which will bring them to a separate page where they can see graphs and historical trends regarding each category.

PROGRAM COMPONENTS

- __init__.py: app for website
- templates/
    - login.html
        - Typical username/password login
    - registration.html
        - Helps create account and will redirect to home_page.html
    - survey.html
        - Allows users to respond to questions about preferences for living area
        - Leads to the home page.
    - home_page.html
        - Displays neighborhood names
        - Lists statistics about selected neighborhoods in a custom pop-up
        - Includes link for Further Information
    - direct_lookup.html
        - Displays Search Lookup For a Given Address or Latitude/Longitude
    - additional_info.html
        - A separate page that goes into more detail about the selected neighborhood
        - Financial Health (Poverty Rates, Median Income…)
        - Historical Crime Trends
        - Heat Maps and other Graphical Representations of Housing Prices and more
- Setup_db.py (ran once)

    - Functions that makes calls to each database to populate tables
    - Functions that will get most relevant data per table (for example if it is the housing prices category, it would be prices in some unit of time)
- process_data.py
    - Select a specific neighborhood
    - Helps provide all relevant data from each of our categories (cost of living, crime rate, financial health/demographics)
- maps.js
    - Load the interactive map of NYC
    - Track the Position of the Mouse with Respect to the Map
    - Call some function based off mouse hover or click

PAGE BREAKDOWNS

Login Page
Has a user and password textbox, login button, and sign in button.
There will be a brand logo on top of the textboxes, and a house.
Users will be redirected to the survey page automatically if they are new users.

Home Page (Accessed through a button on the login page, more info page, and survey page)
Has a search bar to search up a specific area in NYC.
Has an Interactive City Map with the different neighborhoods of NYC. When users hover over a neighborhood in the map, basic statistics will pop up. Users can press more info about to be directed to the More Info Page.
Has a button to direct users to the survey page if they wish to edit their preferences.
Has a signout button.

Survey Page (Accessed Through a Button on the Home Page):
-Redirected from Login to Survey Page
-Potential Answers and Rankings will be in Pre-Populated Drop Down Menu
-Questions would be: where someone works, how much they value things like commute, price range etc.
-Ask user How Much Each Category matters to them (1 is least important, 5 is most important)
-Answers will be Saved in another Database so we can keep track of user preferences as well as Amount of Times a user has edited (important for editing the survey in the future)

More Info Page
-Accessed Through Clicking A Link Generated By Selecting a Neighborhood on Interactive City Map
-There will be a menu where each category of data can be toggled For Graphical Display via Button click

-Categories of data are: cost of living, financial data/demographics, and crime statistics
-Only one graph can be displayed at a time

Geolocation API: Allows us to turn addresses in longitude and latitude and place on map https://developers.google.com/maps/documentation/geocoding/overview#:~:text=The%20Geocoding%20API%20is%20a,Place%20ID%20into%20an%20address.

DATABASE ORGANIZATION

Username text	Password text	Preferences text
may	imsosad123	43512

The 5 numbers in the preferences string are the ratings (1-5) the user gave each category of data.

1st: Cost of Living
2nd: Crime rate
3rd: Commute

For each database, we will also have 5 additional tables that store data about the five categories (crime rate, price etc)
Address Points:
Neighborhood Names GIS | NYC Open Data (cityofnewyork.us)
NYC Address Points | NYC Open Data (cityofnewyork.us)

Neighborhood Prices:
7180 Rows by 9 Columns
https://data.cityofnewyork.us/City-Government/DOF-Summary-of-Neighborhood-Sales-by-Neighborhood-/5ebm-myj7

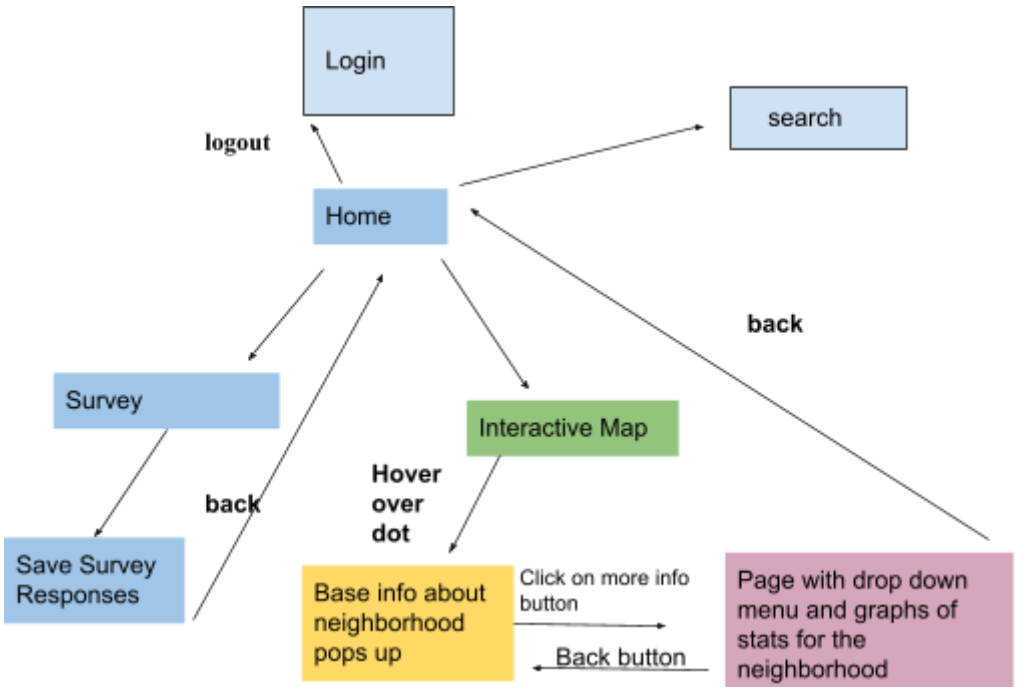
Financial Health and Demographics:
385 Rows by 52 Columns
Neighborhood Financial Health Digital Mapping and Data Tool | NYC Open Data (cityofnewyork.us

Beyond MVP Feature:
Crime:
NYPD Complaint Map (Year to Date) | NYC Open Data (cityofnewyork.us)

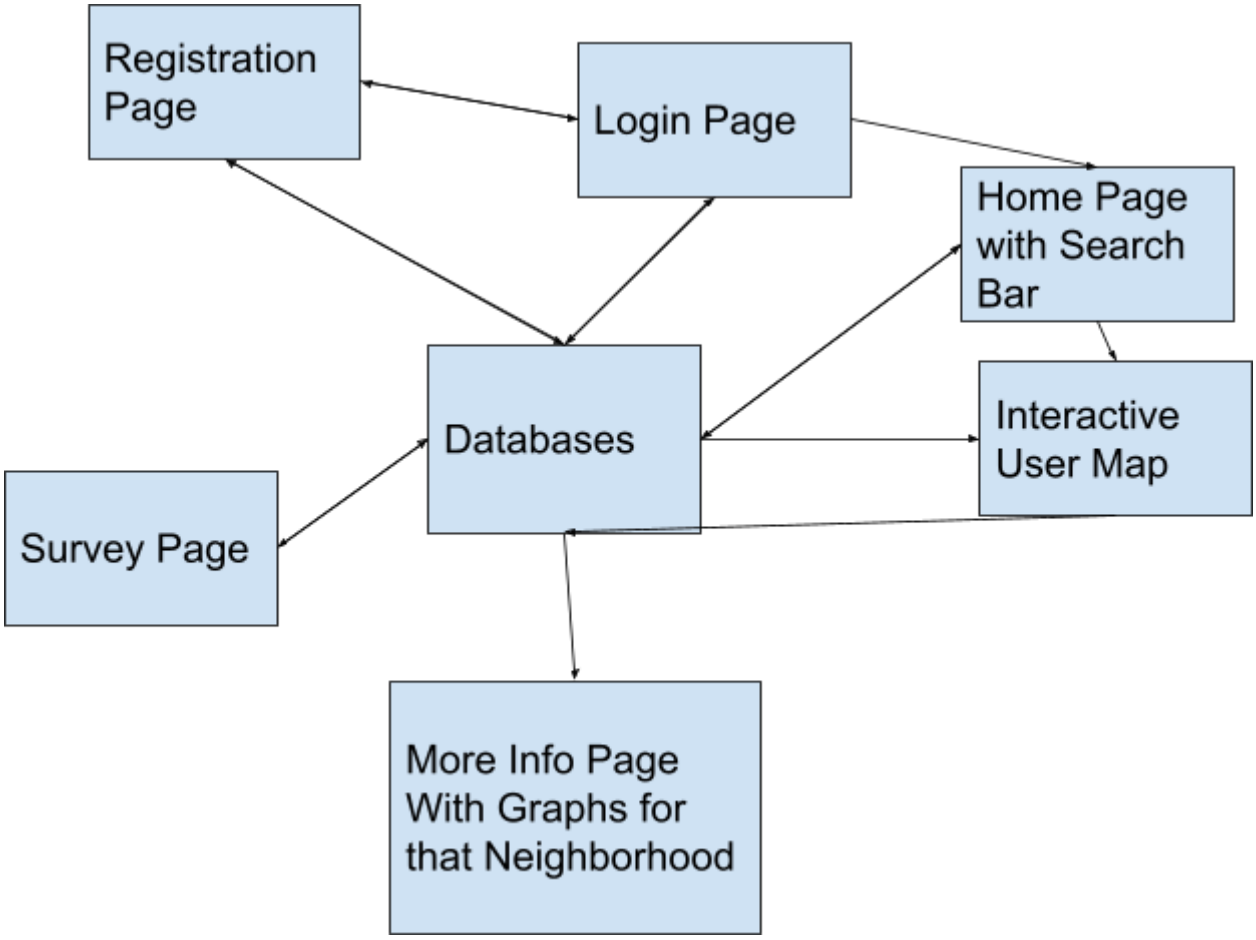
FRAMEWORK

We will use Bootstrap because it offers us better customizations to our site that make our site look more professional. Such features include: progress bars, sliders, loading buttons, various colored/shaped buttons, customizable tables, collapsibles, forms, search bars**, and tooltips/popovers(hovering will show text).**

USER MAP



COMPONENT MAP



BREAKDOWN OF TASKS

Emerson: Work on API calls for Traffic/Commute database, and dropdown, menu/graphing of trends with JS and bootstrap

Anjini: Work on survey and how to take preferences in account when displaying recommendations

May: Work on API calls for populating the database for Cost of Living Data. Work on user database (login, password) as well as survey response database.

Daniel: Work on API calls for populating the database for Crime Rate. Work on Interactive Map of NYC with JS.

Checklist:

- [ ] Create each html page
- [ ] Create database, then connect it
- [ ] Incorporate usage of APIs
- [ ] Create visuals for the data
    - [ ] Heat maps (average household sale distributions)
    - [ ] Line graphs (for crime trends)
    - [ ] Pie charts for demographics
    - [ ] Bar graphs to compare income by neighborhood
- [ ] Create Survey
    - [ ] Populate Survey Response Database
- [ ] Interactive Map
    - [ ] Basic stats when hovering in pop-up