

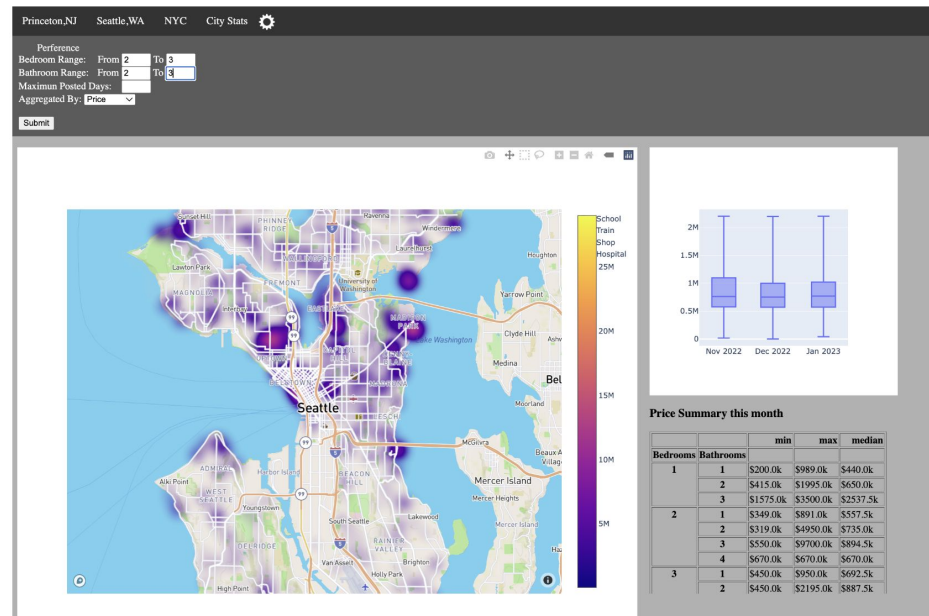
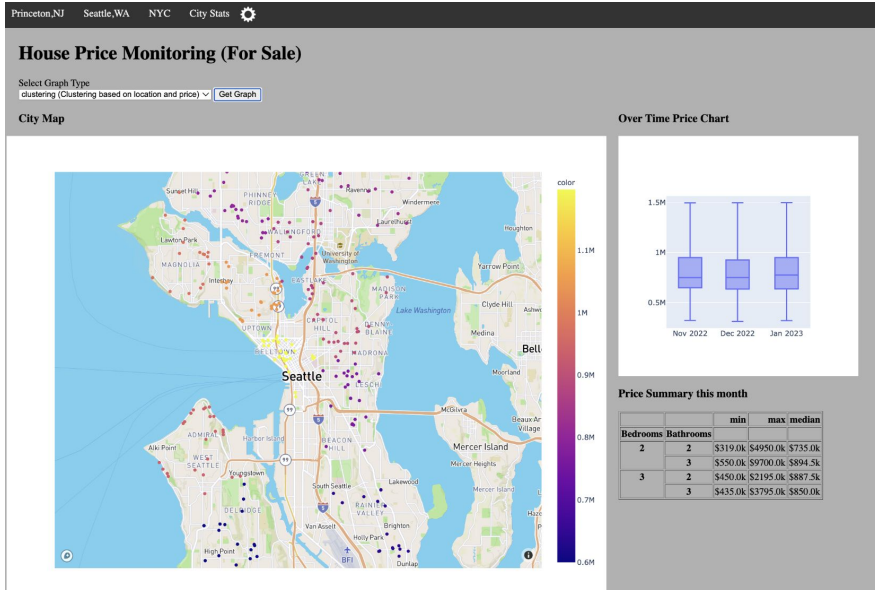
Housing App System Design

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Overview

- Github: https://github.com/HarrisonLL/Housing_Price_App
- The app shows housing price heatmap, scatter plot, clustering by location and price, it also monitors monthly house price changes.
- Since it requires monitoring monthly changes, I used flask + sqlite framework to store monthly changes.
 - Notice here I did not use Cron scheduled job because the website will block user for multiple site crawling.
 - For individual user, a manual crawling each month would not be costly.
 - For automation of crawling, consider the cron job in flask, which is similar to daily database backup.
<https://blog.miguelgrinberg.com/post/run-your-flask-regularly-scheduled-jobs-with-cron>
- The app support three types of plotting on the left:
 - 1) Price heatmap: this shows overall price distribution, it is not user-friendly for zoom-in
 - 2) Price scatterplot: this shows individual contributor in housing market
 - 3) Price clustering: this runs weighted K-means algorithm
- The app shows price change curve on the right, and has a summarization on the right bottom

User Interface





Cache user searching preference, so each page load (choosing city) will be under the same choice (numbers of beds/bath, posted dates etc.)



File

City Census data
Served as file stored on server (csv file), not in DB

One-time
file
download



DB

City Layout

City_id (**foreigner key**) (**Primary key**),
Type (school...),
Name,
Location,
Rating

One-time
API call

City

id (**Primary key**),
City_name,
City_location,

City Housing

City_id (**foreigner key**),
Date, (**Primary key**)
House_name (**Primary key**)
Price,
Area,
Location,
bathroom,
bedroom,
days posted,
Zillow url

Scheduled
crawler

Backend Design