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pghHousing

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Product Overview



- ▶ Is \$415,000 a good price for 4 bds and 3 ba?
- ▶ What should you know about the neighborhood? Is it safe for the kids?
- ▶ How will the price develop?

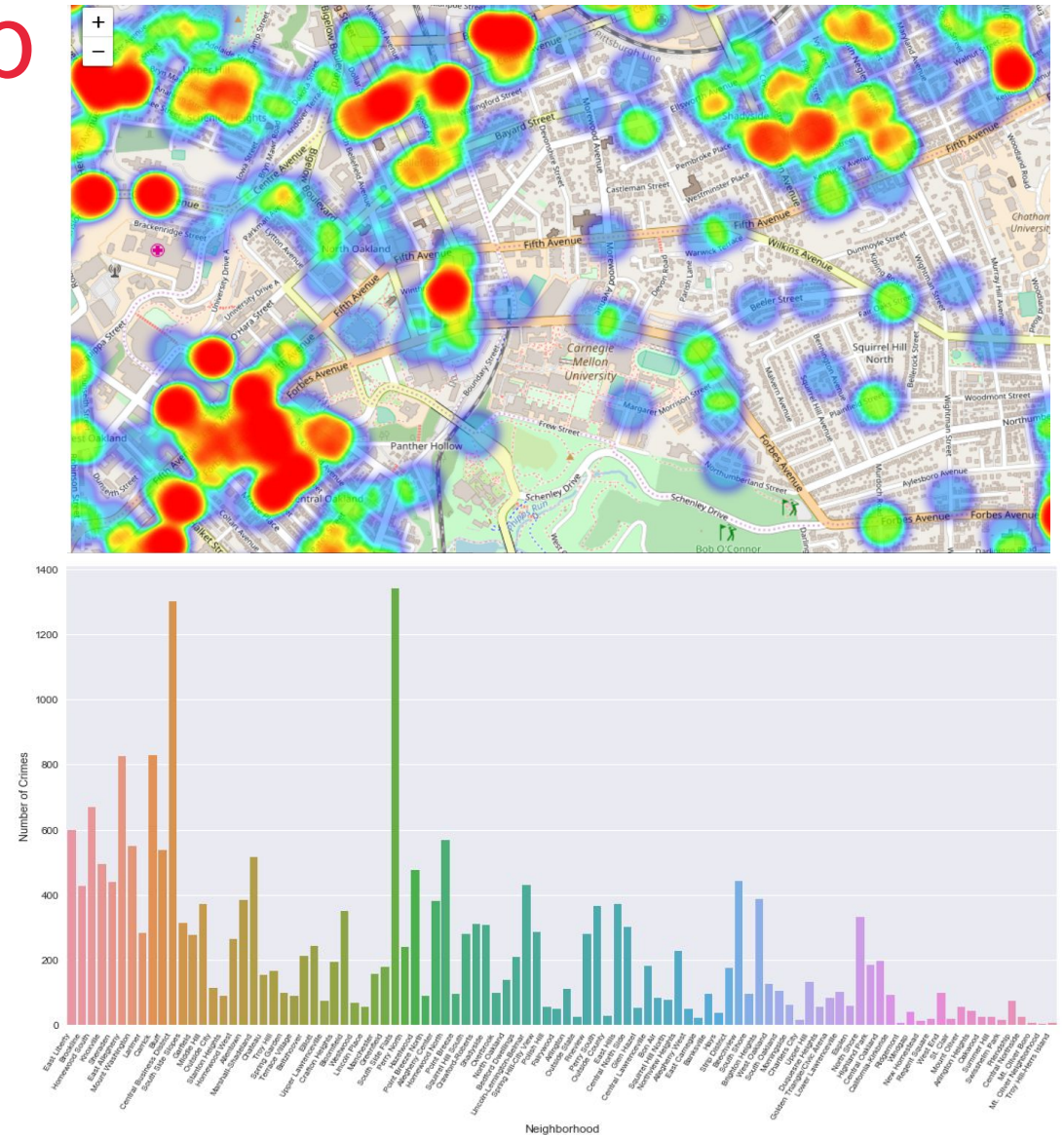
We will make this process easier by providing independent and objective information from multiple viewpoints!

Product Features

- ▶ Crime Heatmap
- ▶ Historical Price View
- ▶ Price Index
- ▶ Pittsburgh Income Level
- ▶ Housing Price Scatter Plot Matrix

Feature 1 - Crime Heatmap

- ▶ We provide Pittsburgh crime heat map & number of crimes by neighborhood diagram.
- ▶ Users can make better housing decision by taking a closer look at the locations where crimes have taken place.



Feature 2 - Historical Price View

- ▶ Users can take a look at the historic trend of house prizes for any given region.

- ▶ Prices for Pittsburgh:



Feature 3 - Price Index

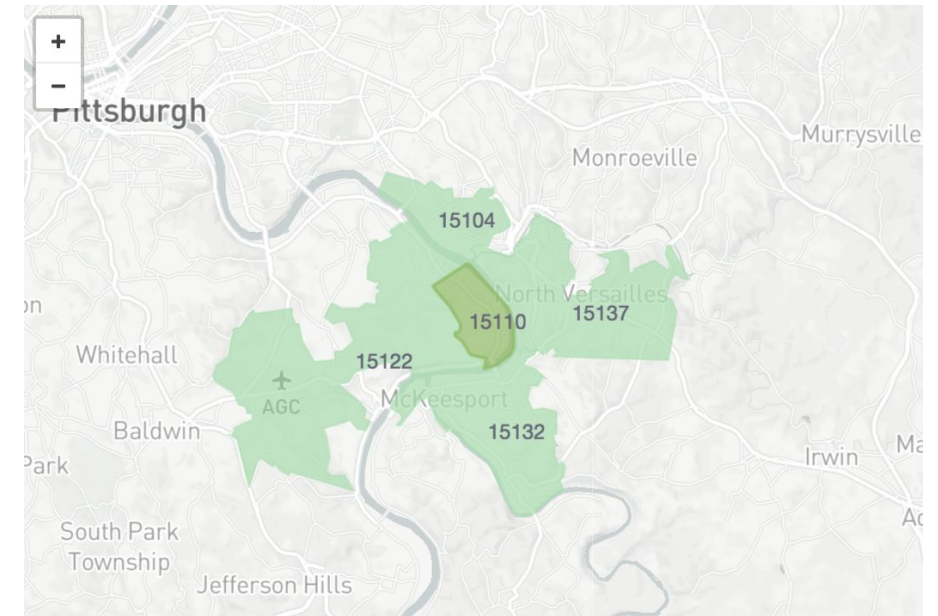
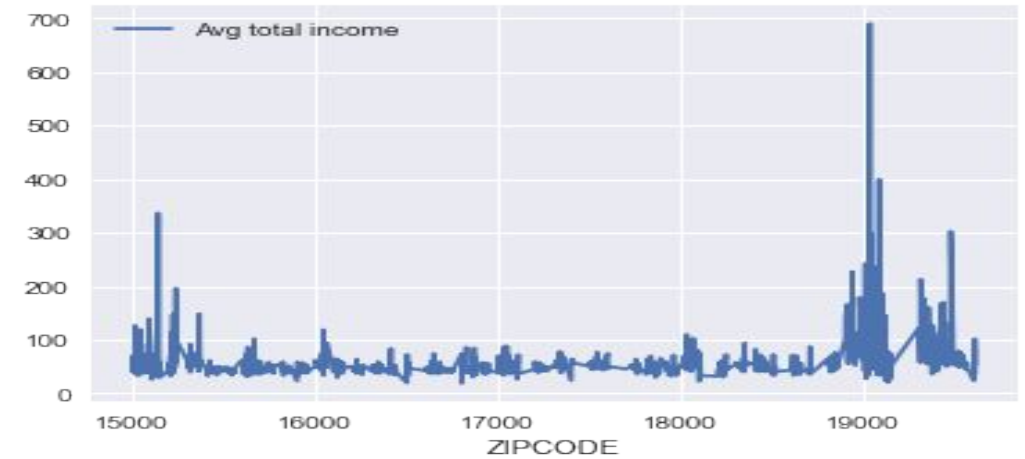
- ▶ We provide users an easy index, ranging from 1 to 10, that assesses the price level for any given region within the US. This allows an easy comparison of the desired region among the US.
- ▶ 1 means prices are in the lowest 10% and a 10 means prices are between 90% and 100% of the most expensive regions.

▶ Indexes for Pittsburgh:

- ▶ Scores for Pittsburgh:
ZHVI_1bedroom: 6
ZHVI_2bedroom: 4
ZHVI_3bedroom: 5
ZHVI_4bedroom: 6
ZHVI_5BedroomOrMore: 6
ZHVI_AllHomes: 5

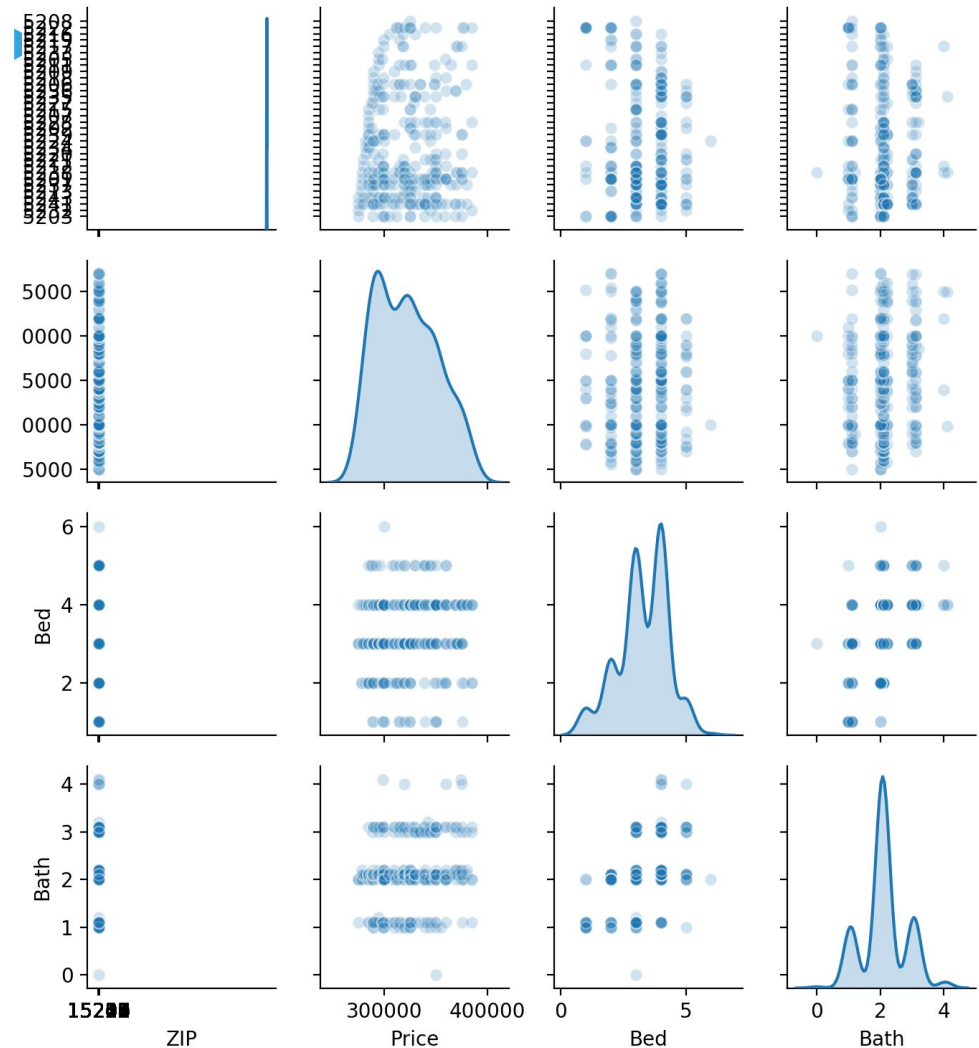
Feature 4 - Pittsburgh Income Level

- ▶ We analyzed the geographic distribution of income across Pittsburgh zip codes.
- ▶ Users can make rational decision by interacting with our web tool to see each region's average income level.



Feature 5 - Housing Price Scatter Plot Matrix

- ▶ We web scraped the website(
<https://www.foundmydreamhome.withmarkay.com/>), make
scatter plot matrix of ZIP, price,
bed and bathroom of each
selling house
- ▶ Gives users the possibility to get
an overview over the actual
market among these
dimensions.



Deliverables

- ▶ Git URL
(Sent invitation to BrianKolowitz)
- ▶ Project Board URL:
<https://trello.com/b/YXbKopid/pittsburgh-housing-recommendation>
(Also sent an invitation to kolowitz@cmu.edu)

The image shows two screenshots side-by-side. The top screenshot is a Trello board titled 'Pittsburgh Housing Recommendation'. It has four columns: 'To Do', 'Doing', 'Done', and 'Failed'. The 'Doing' column contains cards for 'Git', 'Deck', and 'Jupyter Notebooks'. The 'Done' column contains cards for 'Lean Canvas', 'Data source - excel', 'Create Outline for presentation deck', 'data sources', 'Data source - csv', and 'Data source - web scraping'. The 'Failed' column contains a card for 'Data source - web API'. The bottom screenshot is a GitHub repository page for 'PythonGroup7 / Group-7-Python-Final-Project'. It shows 20 commits, 1 branch, 0 releases, and 3 contributors. A table lists recent file uploads by user TartansGeorg.

File Name	Action	Time
City_time_series.csv	Add files via upload	8 minutes ago
Crime @Pittsburgh.ipynb	Add files via upload	6 hours ago
Crime-Data_Pittsburgh.csv	Add files via upload	17 hours ago
IRS_Income_PA.xlsx	Add files via upload	6 hours ago
IRS_Income_PA_Zipcode.ipynb	Add files via upload	6 hours ago
Pittsburgh_Crime_Heatmap.html	Add files via upload	6 hours ago
README.md	Update README.md	17 hours ago
Zillow economics data analysis.ipynb	Add files via upload	5 hours ago
cities_crosswalk.csv	Add files via upload	7 minutes ago
requirements.txt	Add files via upload	6 hours ago

Additional Enhancements

- ▶ Take more factors into our recommendation model
- ▶ Implement real-time data (housing prices, etc)
- ▶ Create simple prediction models for price and index trend
- ▶ Explore relationships between different parameters through deeper research into housing markets
- ▶ Build interactive and user-friendly interfaces

Lessons Learned

- ▶ Define clear goals and build a solid foundation for sourcing data and develop features
- ▶ Random sampling for large datasets that reveal more properties to help better modeling
- ▶ Evaluate model and iterate based on experiments
- ▶ Early visualizations give a feeling for the data
- ▶ Collaboration enhances productivity when stuck in a problem