10/12/2018

pghHousing

Xueqian Zhang | CEO, Jiawen Li | CTO, Georg Ulrich | COO, Wanghui Li | CMO
partner@pittsburghHousing.com

+1 (123) 789-6540

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!

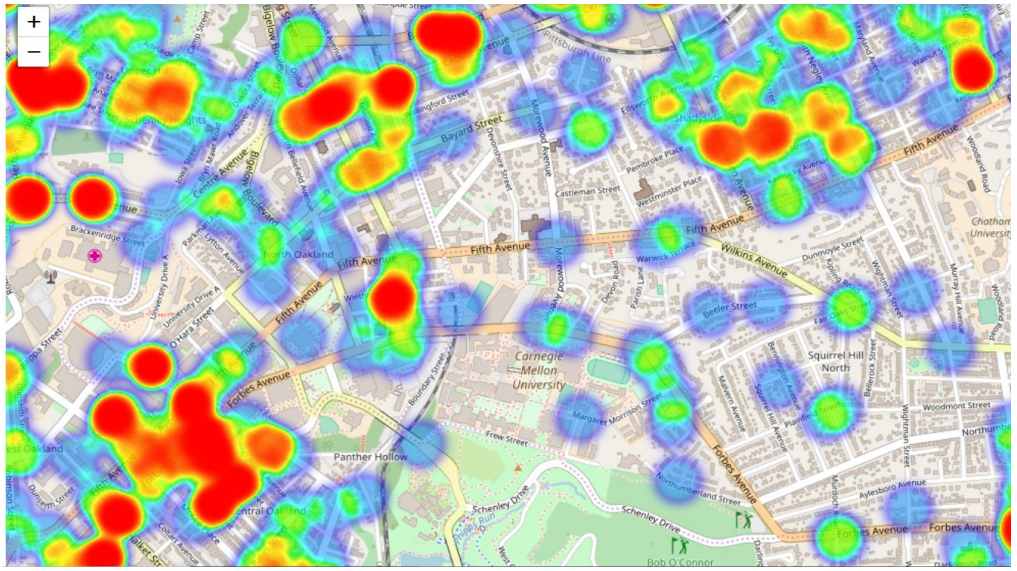
Product Features

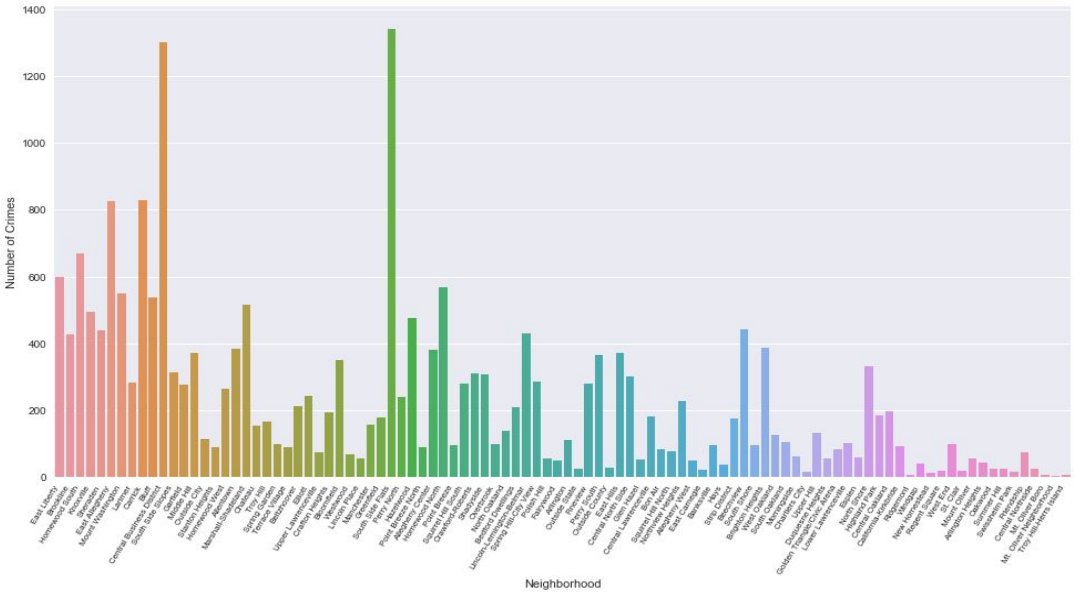
- Crime Heatmap
- Historical Price View
- Price Index
- Pittsburgh Income Level
- Housing Price Scatter Plot Matrix

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.

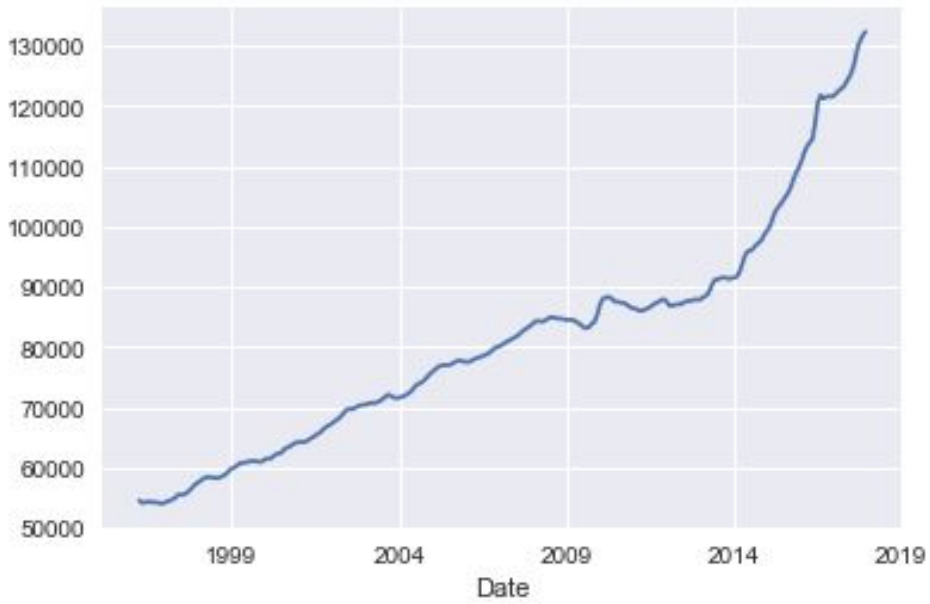




Feature 2 - Historical Price View

- 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 asses the price level for any given region within the US. This allows an easy comparison of the desired region among the US.

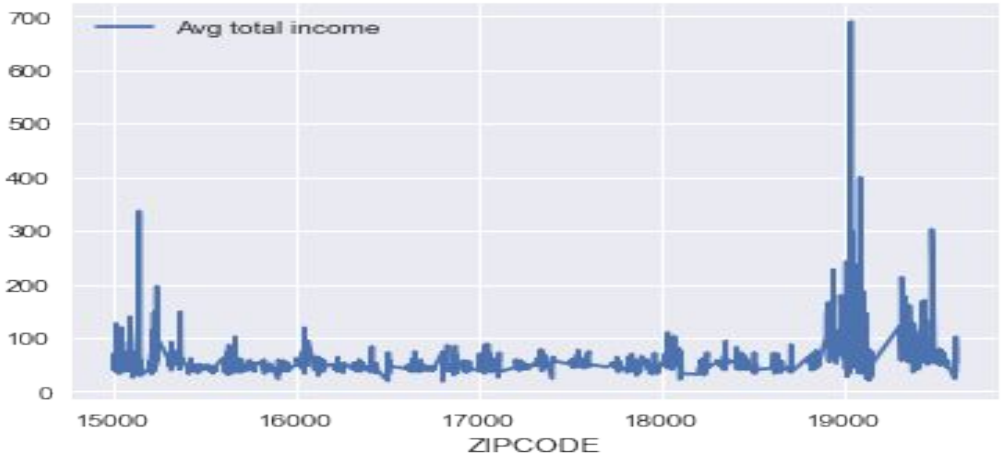
- 1 means prices are in the lowest 10% and a 10 means prices are between 90% and 100% of the most expensive regions.

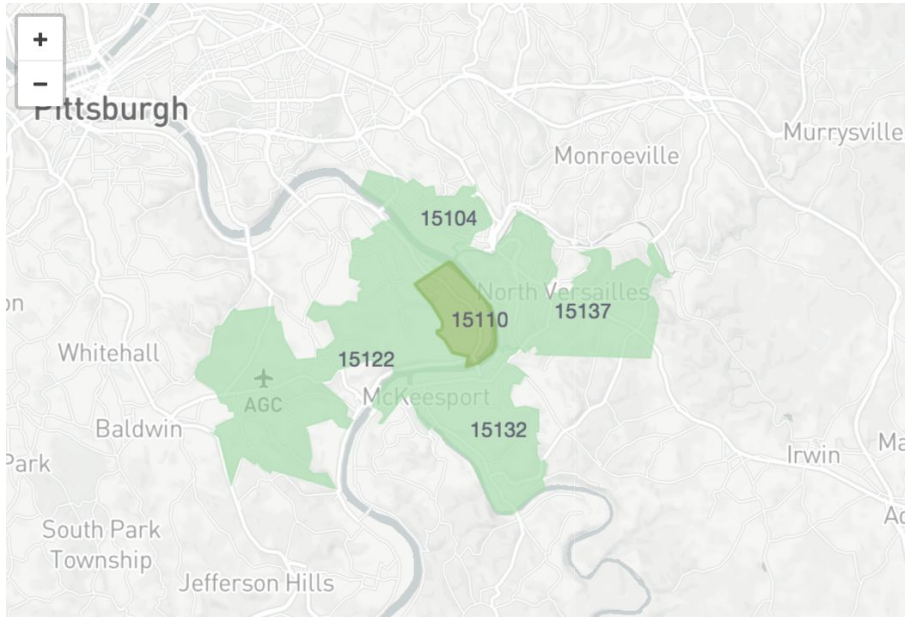
- Indexes for Pittsburgh:

- ```
  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.

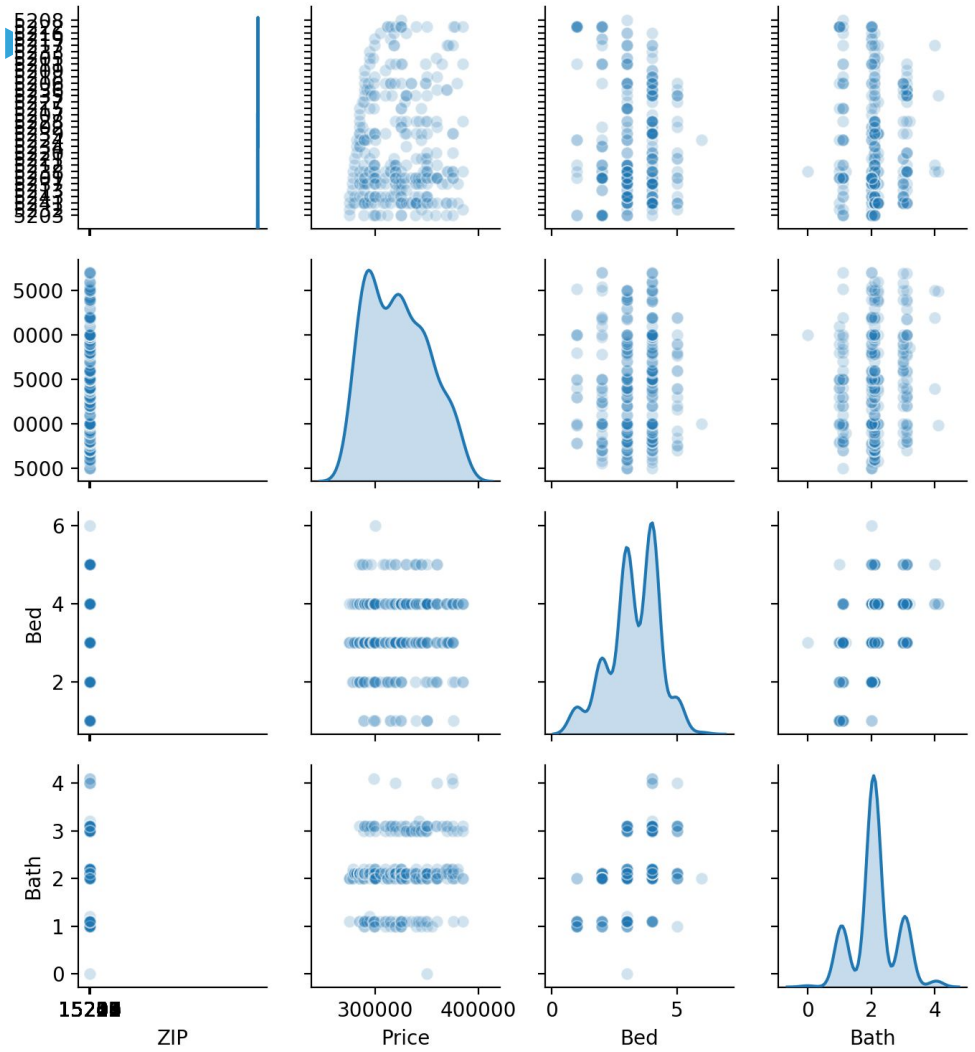




Feature 5 - Housing Price Scatter Plot Matrix

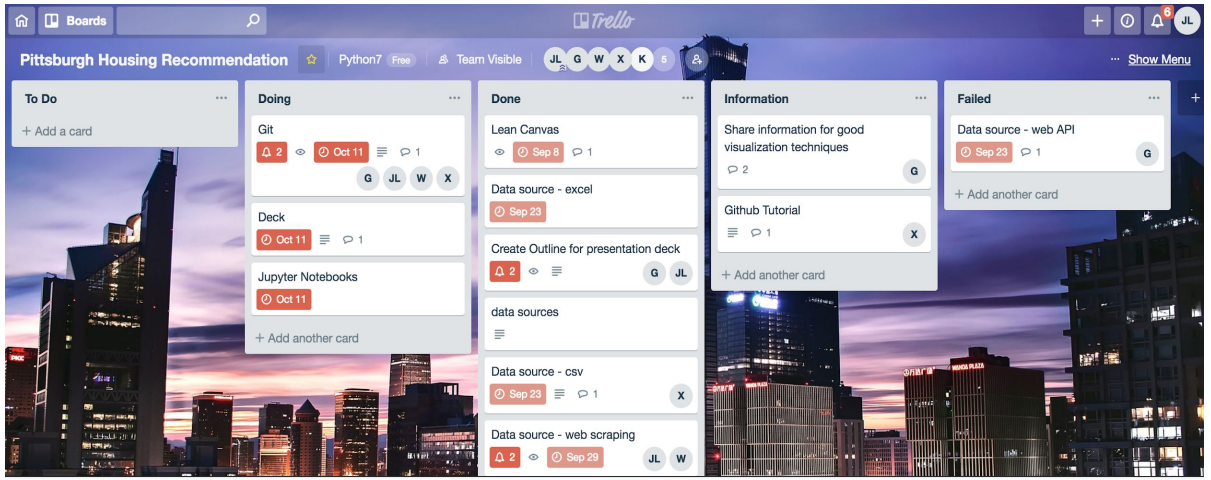
- We web scraped the website(https://www.foundmydreamhomewithmarkay.com/), make scatter plot matrix of ZIP, price, bed and bathroom of each selling house

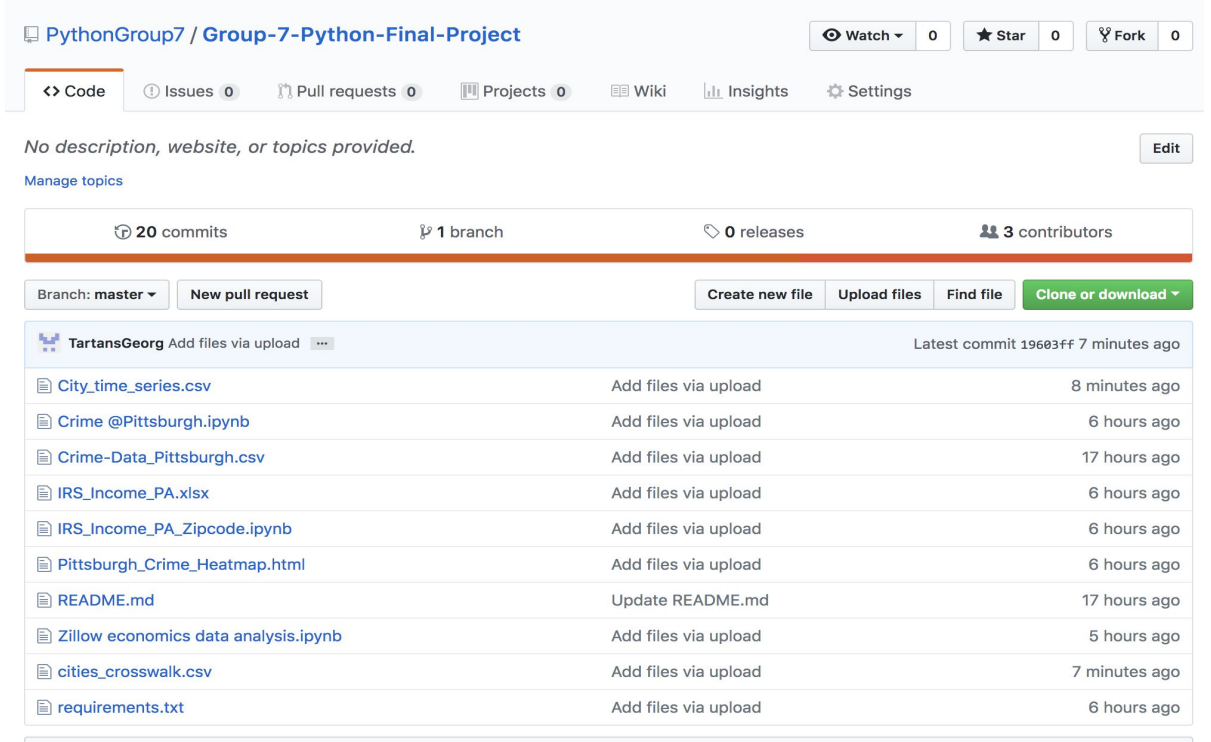
- Gives users the possibility to get an overview over the actual market among these dimensions.



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)





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 experiements
- Early visualizations give a feeling for the data
- Collaboration enhances productivity when stuck in a problem