CitySlip

TEAM 1

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CitySlip: Overview

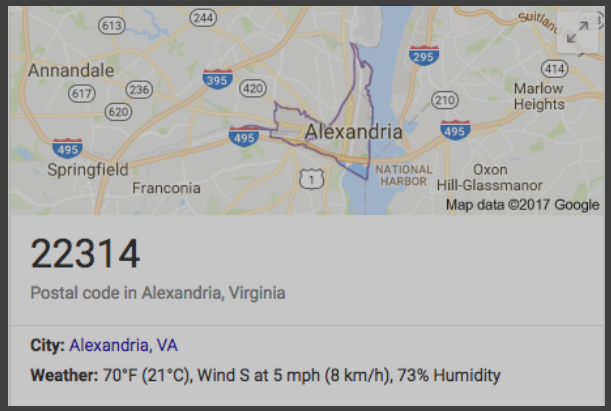
CitySlip is designed to receive a single U.S. zip code and provide feedback to the user on 6 categories:

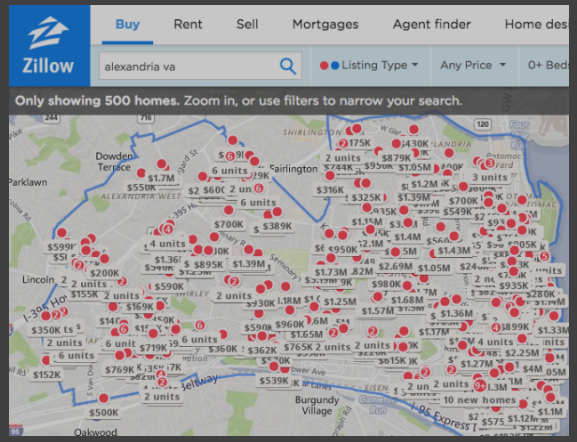
- Population and Age Demographics
- Points of Interest (i.e. parks, theatres, stores)
- Housing Market
- Schools
- Crime Risk
- General Weather

CitySlip: Purpose

CitySlip's categories and associated data sets were sought after in effort to provide a user with a foundational point when contemplating a potential move to a U.S. city

A simple Google search only provides very basic information on the city or zip code of choice





Navigating Zillow for information on average rent or real estate listings can be time consuming

CitySlip: Value

CitySlip provides a user with a sense of the area in question…

What is the population and its growth rate?

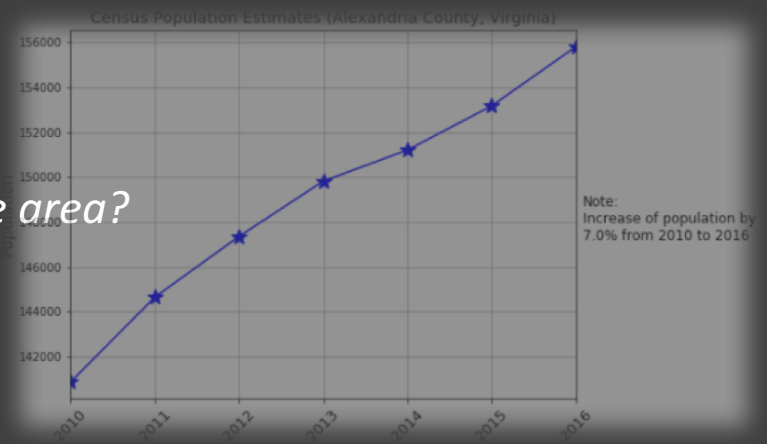
Are there places to shop and things to do?

How affordable is the market to rent or buy?

What is the average age of residents?

How many and what type of schools are in the area?

Would this be a good place to live?



CitySlip: Data

CitySlip accesses various APIs and static datasets:

- Google Maps API:
  - 8km (~5 mile) radius search for: Movie Theatres, Grocery/Supermarkets, Shopping Malls, Parks, Gyms, and Liquor Stores
- Onboard Informatics API:
  - Schools in the area
  - Age demographics
  - Crime risk, Sales tax, Average Temperature
- Walkscore API
  - Score of walkability
- Census Block Conversions API
  - Converts Lat/Lon to county/state

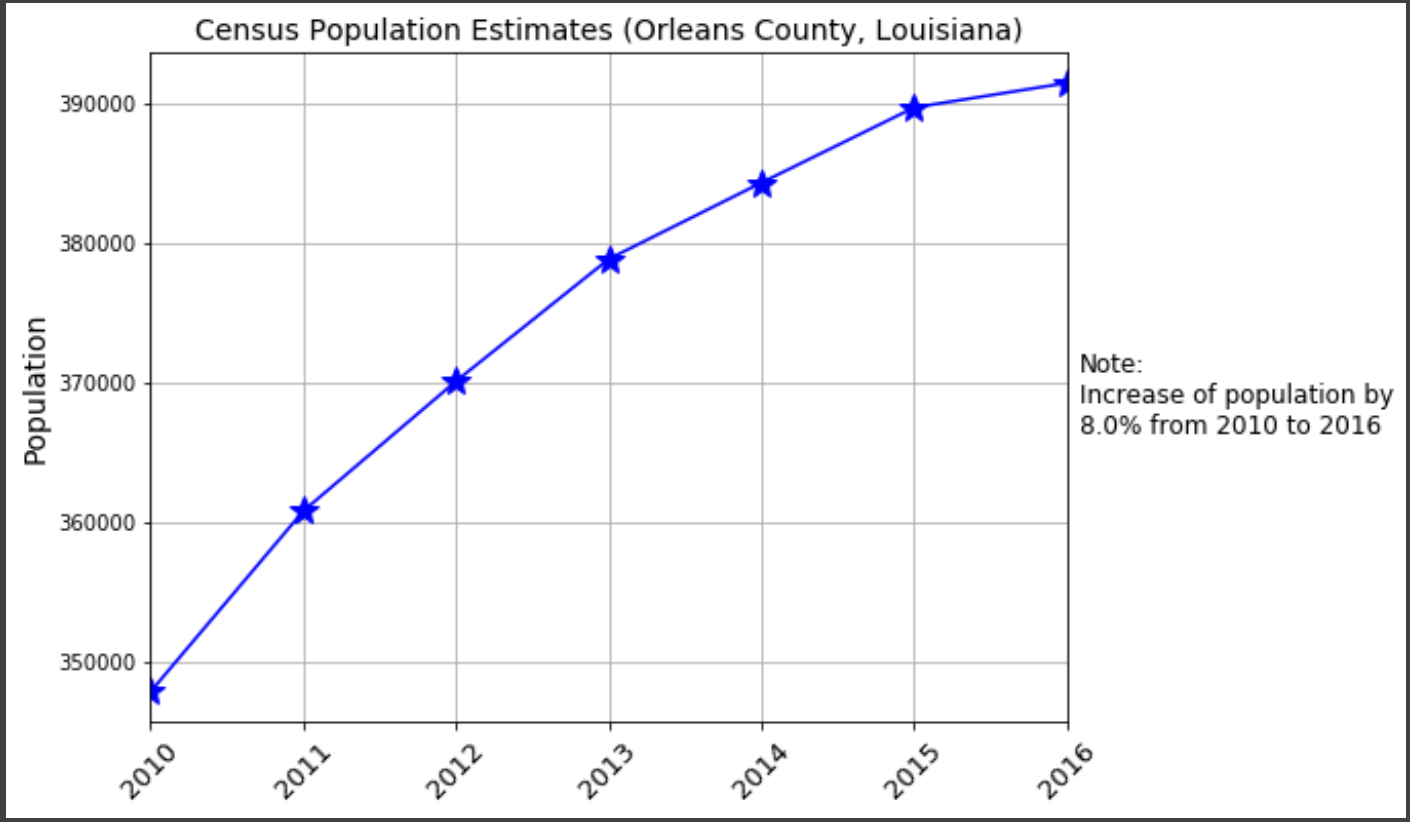
```
# call this function to present a line graph of population change
def census_plot(pop_est,county_name,state_name):
    pop_len = len(pop_est['Population'])
    _2010 = pop_est['Population'][1]
    _2016 = pop_est['Population'][pop_len -1]
    if _2010 < _2016:
        #
        diff_ = (round(((_2016 - _2010)/ _2016) * 100))
        diff_str = "Note:\nIncrease of population by\n" + str(dif
    elif _2010 > _2016:
        diff_ = (round(((_2010 - _2016)/ _2010) * 100))
        diff_str = "Note:\nDecrease of population by\n" + str(dif
    else:
        diff_str = "Note:\nPopulation estimated as\nthe same from
    ax = pop_est.plot(figsize = (8,6),color='blue', legend=False,
    ax.set_xticklabels(pop_est['Years'], fontsize=13, rotation=45
    plt.grid()
    plt.figtext(0.91,0.45,diff_str,fontsize=12)
    plt.title("Census Population Estimates (%s County, %s)"%(coun
    plt.ylabel("Population", fontsize=14)
    return plt.show()

# Call this function to capture a DF that includes yearly changes
def population_df_generator(pop_est):
    pop_len = len(pop_est['Population'])
    pop_diff = [0]
    pop_diff_prcnt = [0]
    for x in range(pop_len-1):
        diff = (pop_est['Population'][x+1] - pop_est['Population'
        pop_diff.append(diff)
        diff_prcnt = round(((diff/ pop_est['Population'][x]) * 10
        pop_diff_prcnt.append(diff_prcnt)
    census_pop_master_df = pop_est
```

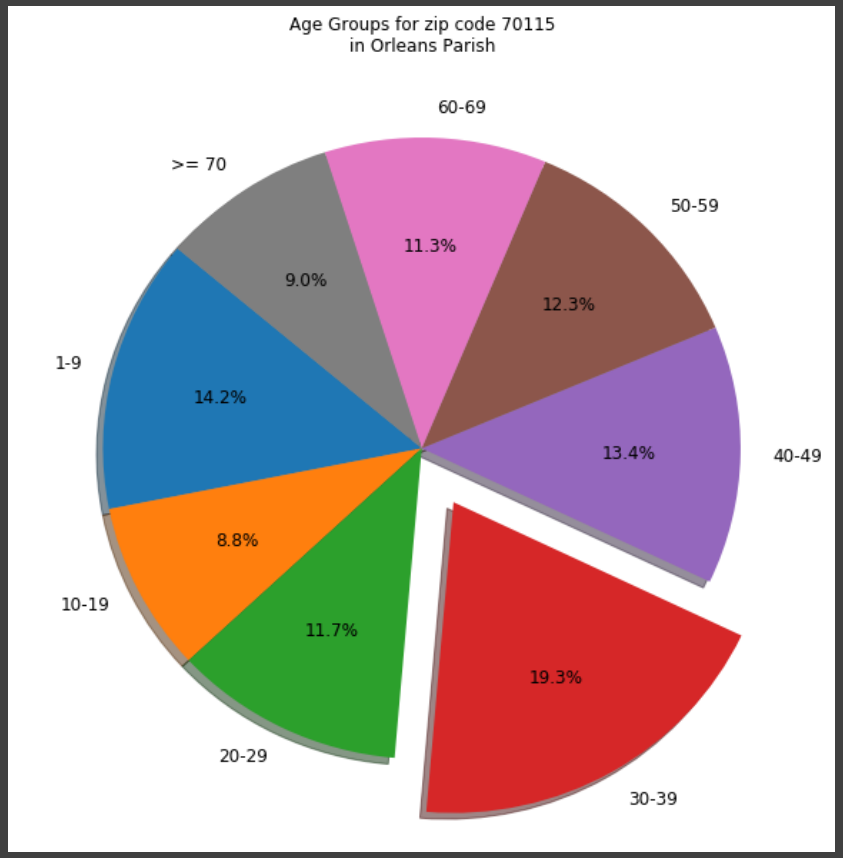
CitySlip: Data cont.

- Zillow CSV files:
  - Market Health Index:
  - Home Value 2014 – 2017: Average home value
  - Rent Value 2014 – 2017: Average rent
- Census American Community Survey (ACS):
  - 2010 – 2016: Provides 116 columns of data on 3,193 counties
- U.S. Zip Codes:
  - Data was cleaned with the removal of ‘Unique’, ‘Military’, and ‘PO Box’ zip codes

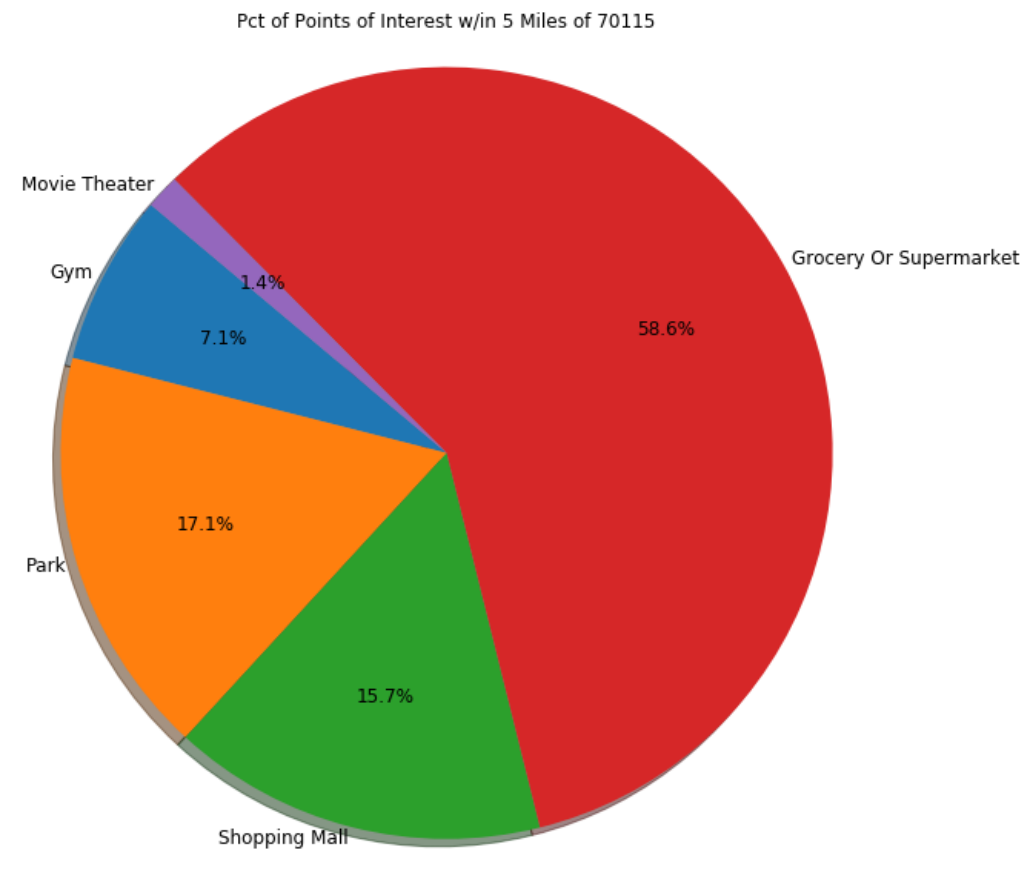
Population Growth



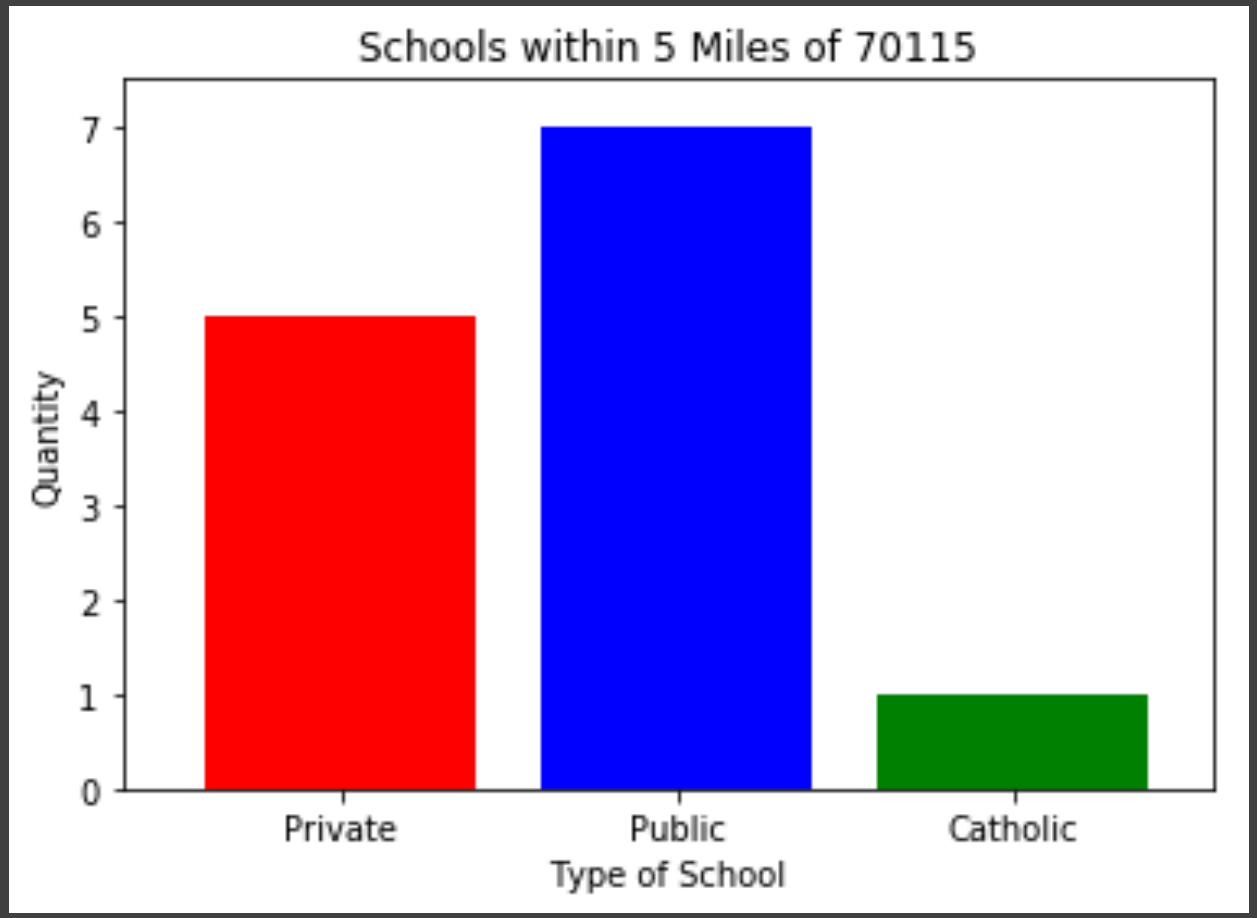
Age Demographics



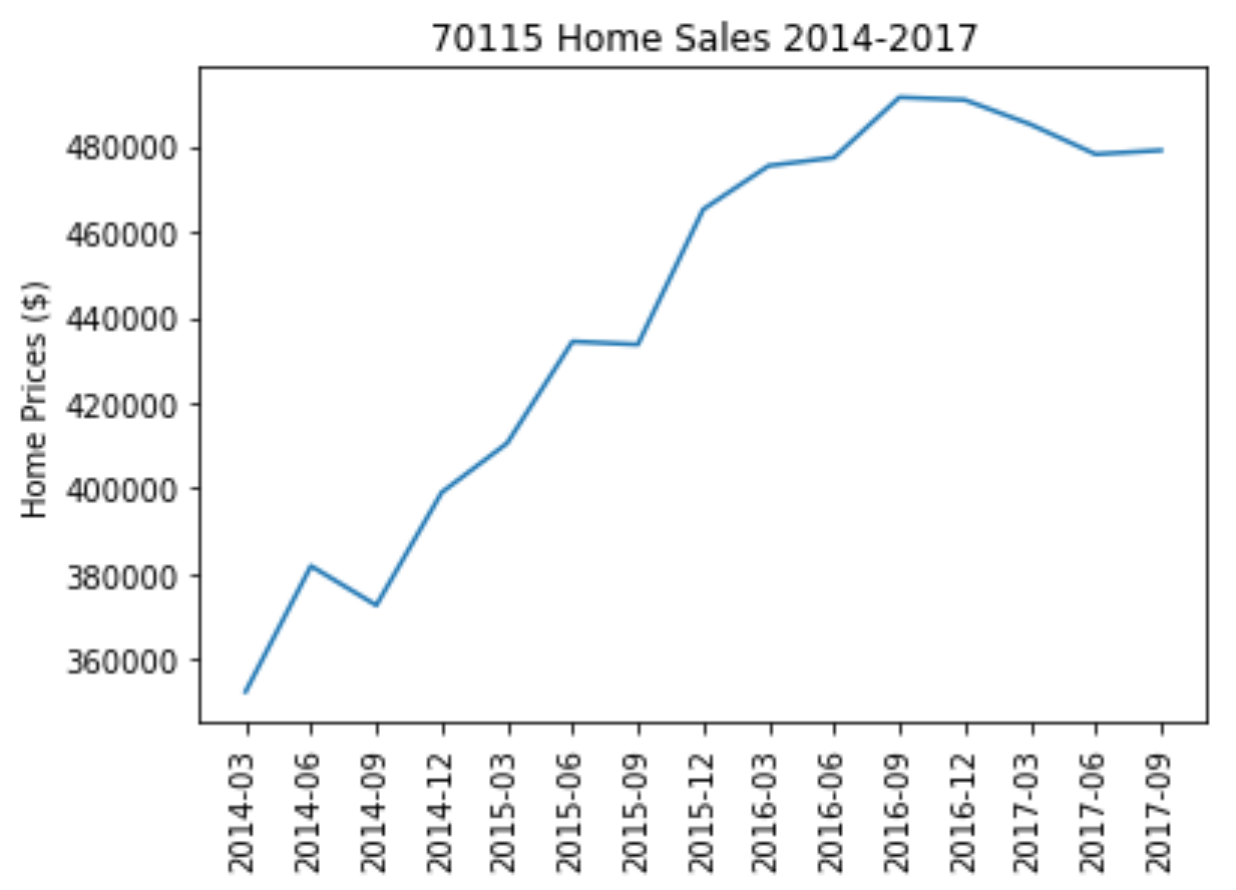
Points of Interest



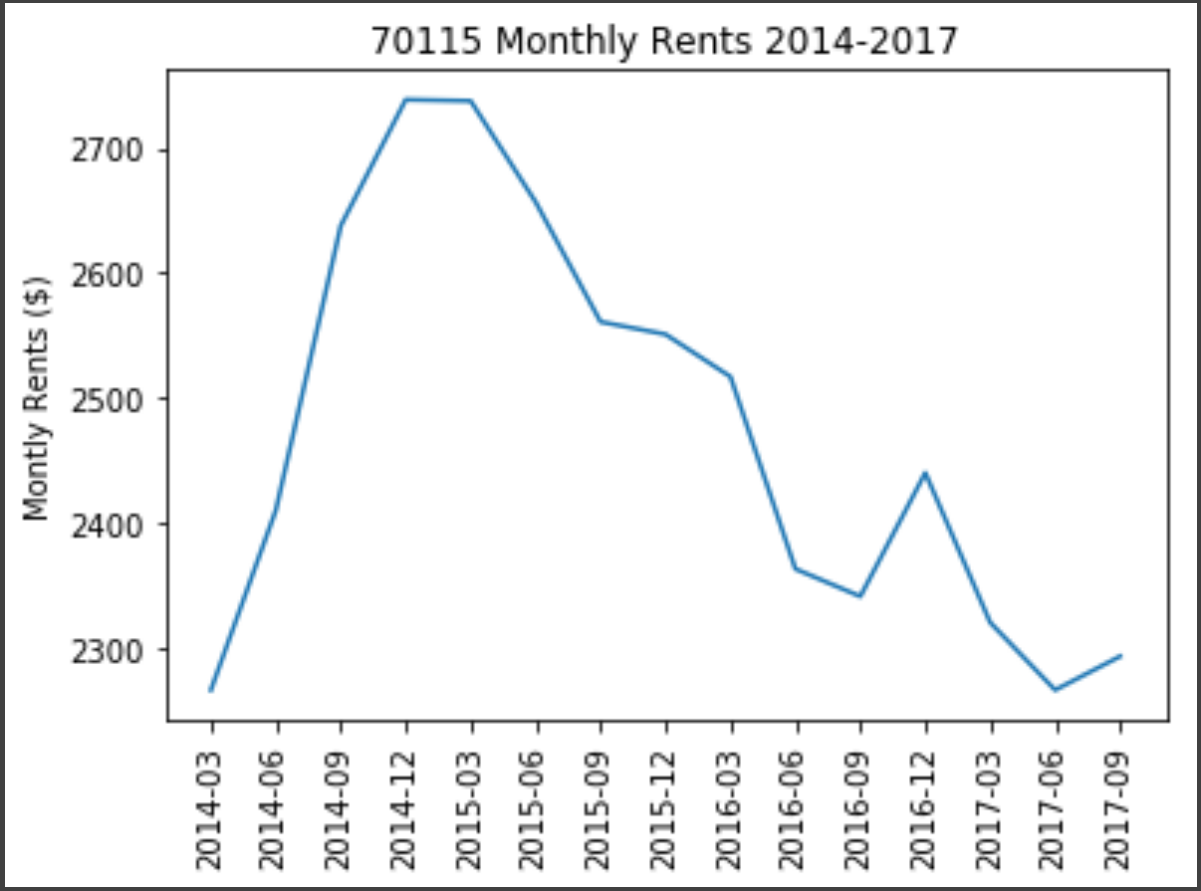
Schools


Schools within 5 Miles of 70115
Quantity
0
1
2
3
4
5
6
7
Private
Public
Catholic
Type of School

Home Prices


70115 Home Sales 2014-2017
Home Prices ($)
480000
460000
440000
420000
400000
380000
360000
2014-03
2014-06
2014-09
2014-12
2015-03
2015-06
2015-09
2015-12
2016-03
2016-06
2016-09
2016-12
2017-03
2017-06
2017-09

Average Monthly Rent



CitySlip: Scoring the Results

10 variables are defined to produce a total score from 0 to 100

Variable	Weight	Basis
Points of Interest Count	.30	High Count
Crime Risk	.15	Low Risk
Winter/Summer Temperature	.10	Moderate
School Count	.10	High Count
Population Growth	.10	Moderate Growth
Home Value	.05	Compared to National Average
Monthly Rent	.05	Compared to National Average
Real Estate Market Health	.05	Strong Market
Sales Tax	.05	Low Tax Rate
Walkability	.05	Pedestrian Friendly

CitySlip: Conclusion

- Accesses 5 data resources targeting a single Zip Code
- Plots 6 graphs:
  - Pie Charts: Places of Interest | Age Demographics
  - Line Graphs: Population Growth | Average Rent | Average Home Value
  - Bar Chart: School Type Count
- Provides a general sense of area
  - How many schools in the area?
  - What are the population demographics?
  - Is it affordable to rent or buy?
  - Etc.
- Presents a subjective score for that Zip Code
- Outputs a CSV with all past Zip Codes that have been run