# Chelsea: Gentrification Analysis

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We implemented 3 scripts:

**income_data.py, price_per_sqrt_data.py, unemployment_data.py**

These scripts ingested the following data sets:

**'income-in-the-past-12-months', 'City_ZriPerSqft_AllHomes.csv', and 'labor-force-and-unemployment-data-chelsea-2001-2017.csv.xlsx'**

Transformations:

**We had to remove irrelevant rows that weren't adequately showcasing what the process of gentrification is looking like in Chelsea, and selected the rows that helped us in our statistical analyses.**

| Year | Unemployment Rate | Avg Price/Sqft | Area |
|------|-------------------|----------------|------|
| 2010 | 8.9% | $1.402/sqft | Chelsea |
| 2011 | 7.7% | $1.398/sqft | Chelsea |
| 2012 | 7.1% | $1.513/sqft | Chelsea |
| 2013 | 6.9% | $1.604/sqft | Chelsea |
| 2014 | 5.8% | $1.784/sqft | Chelsea |
| 2015 | 4.9% | $1.875/sqft | Chelsea |
| 2016 | 3.5% | $1.927/sqft | Chelsea |
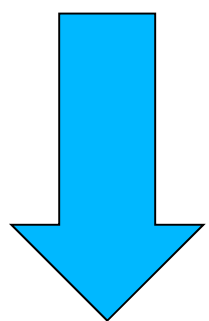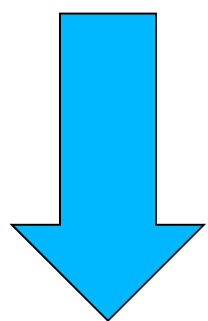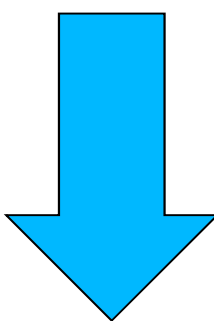
Based on the date from the table above, we were able to calculate the correlation between unemployment rates and average home prices per square foot and compute the p-value. We ultimately found that there was actually a strong negative correlation (~-82%). This conclusion is probable because when people have more disposable income, the demand for homes goes up along with the prices. The p-value for this analysis was relatively low at .001 which indicates it was a significant and unique result.

Data Visualization:

**Visualization 1: Plotting of % in selling price vs. appraisal price to identify higher in demand areas (indication of gentrification and displacement)**

**Visualization 2: Plotting of price per sq. acre of living area to find hotspots where cost of living is increasing**
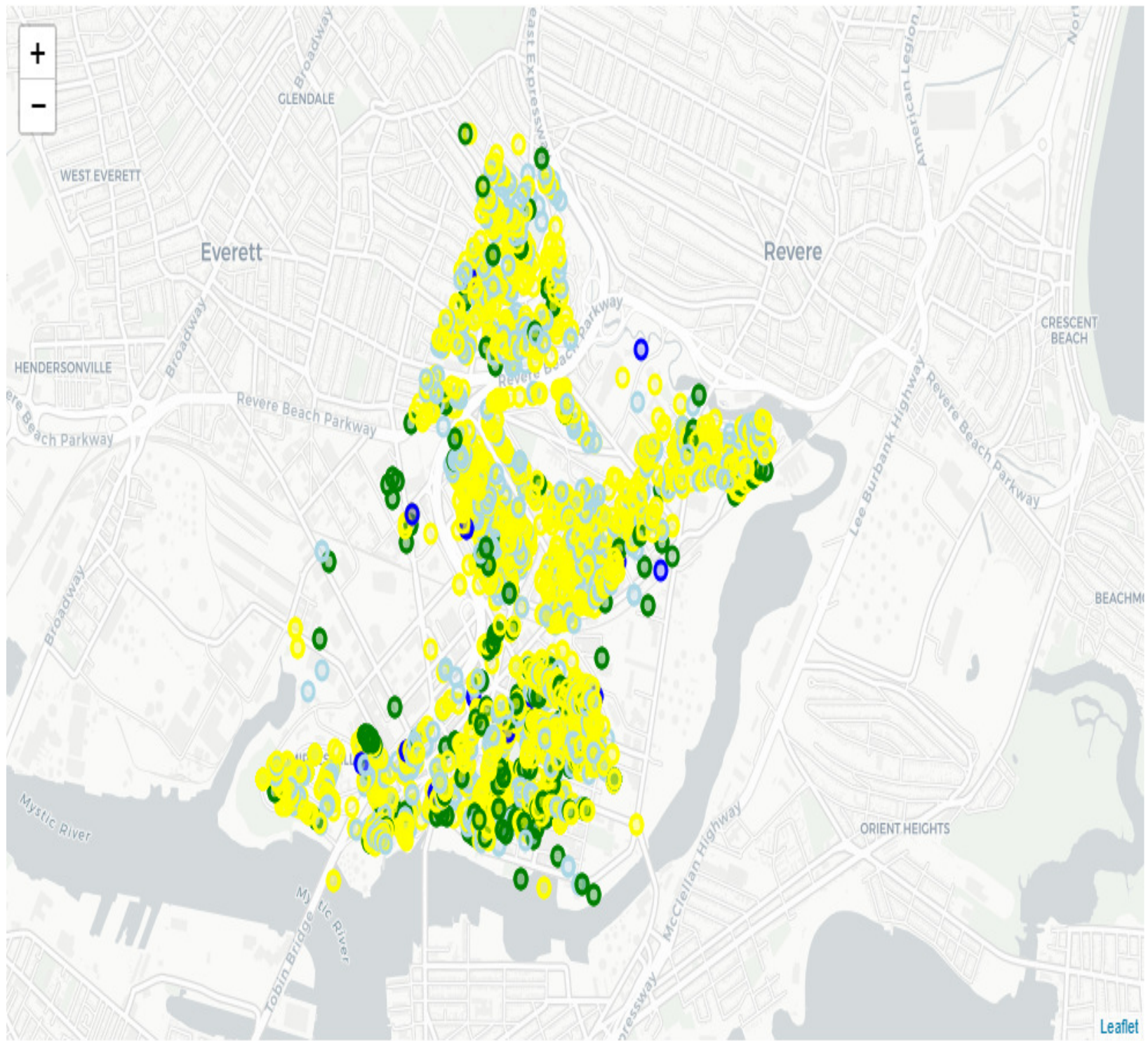


Key: **0 = yellow, 1 = light blue, 2 = blue, >2 = green**
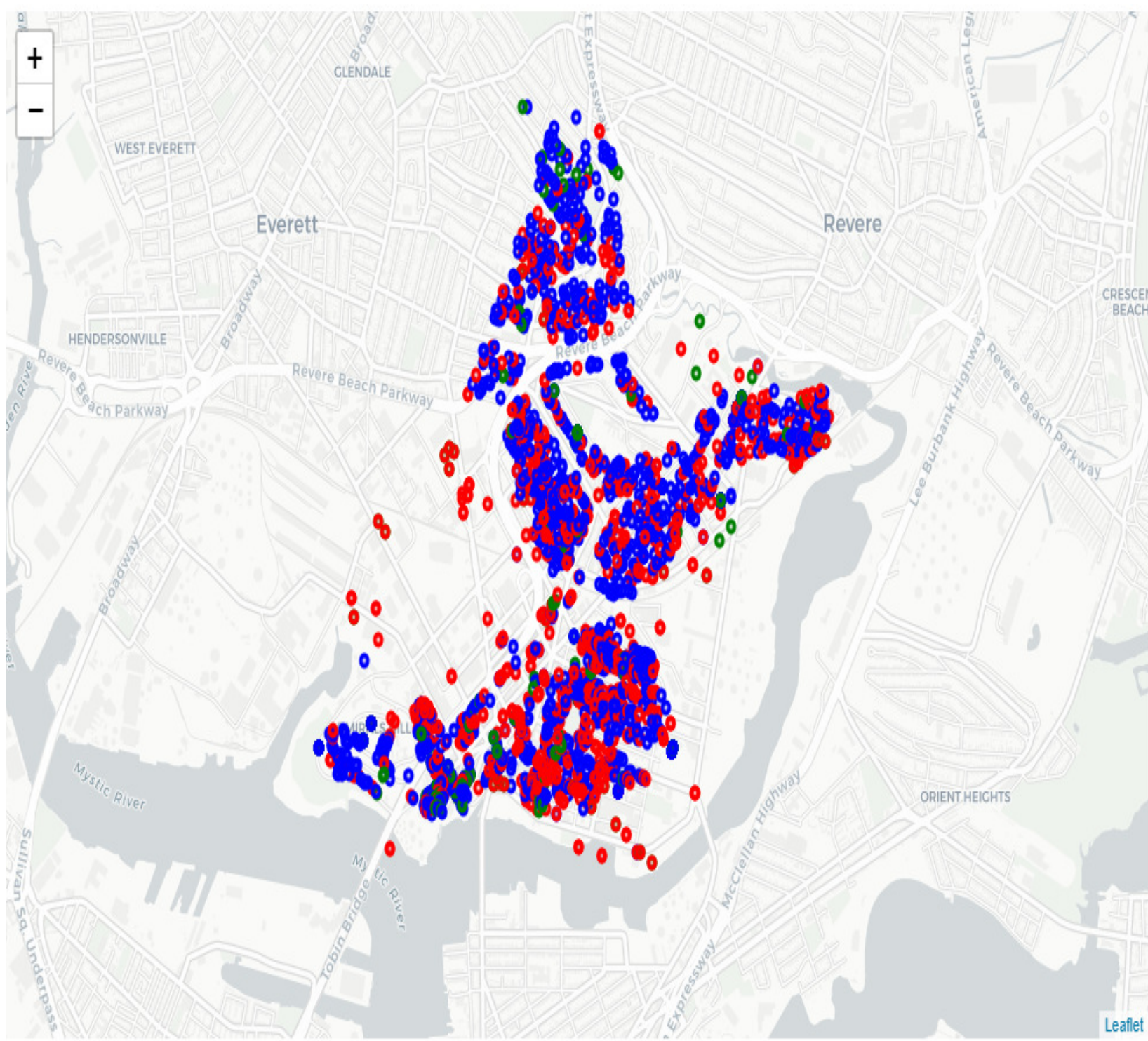


Key: **< $100 = blue, < $300 = green, anything else = red**

Conclusion: **Our project tackled the problem of gentrification in the city of Chelsea. We analyzed several data-sets that showed that there is an increased demand for housing in this area and is seeing a direct correlation between demand and growing rent prices. Because this area has long been populated with low income families/individuals, it is no surprise that the increasing rent prices is putting a great deal of stress on the native residents of this area and although the City doesn't want to deter the influx of new people populating this area, it also doesn't want these increasing rent prices to drive out the current existing residents and wants to ensure that they have affordable housing to those that can't keep up with the inflated prices.**