Visualization of Housing Sales Price in the Great Seattle Area

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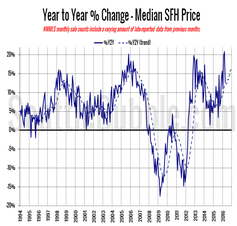
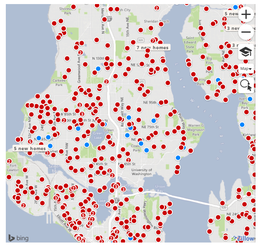
Problem

1. Dramatic fluctuation of Seattle Housing Price in Recent 20 years
2. More demands on housing
3. Time to buy a house?
4. Goal: Interactive visualization showing **spatial** and **temporal** housing price in Greater Seattle Area. Easy for **decision making**

Motivation





Metro	Forecasted Change
Seattle	5.6%

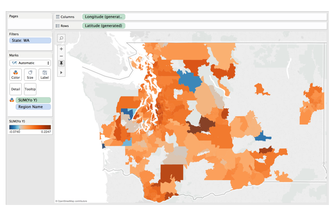
City	Forecasted Change
Seattle	6.7%
Tacoma	6.2%
Renton	5.9%
Bellevue	6.1%
Everett	5.4%

Seattle Bubble: Blog for recent Seattle housing news.
- Mainly uses bar plot and line chart for comparisons and tendency

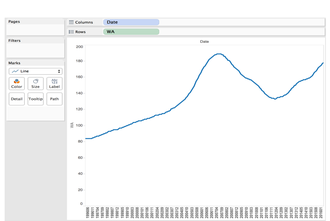
Zillow: Website for house sales information.
- Uses map to show house price
- Uses table to show changes in house price

Our contribution: Combine map and charts, let spatial interact with temporal information.

Approach

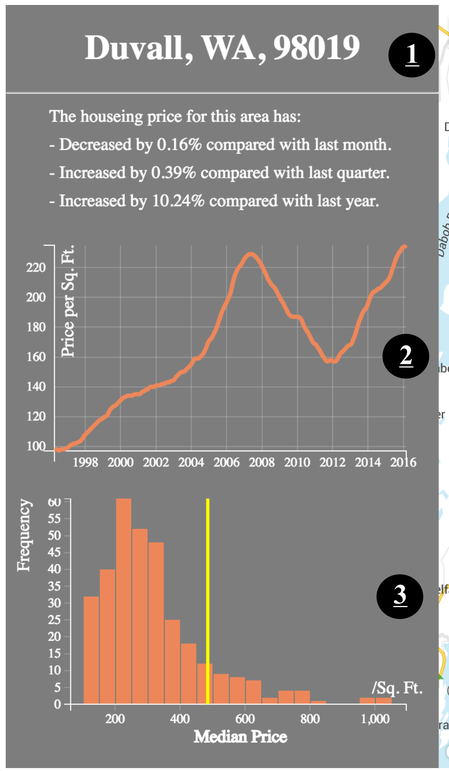


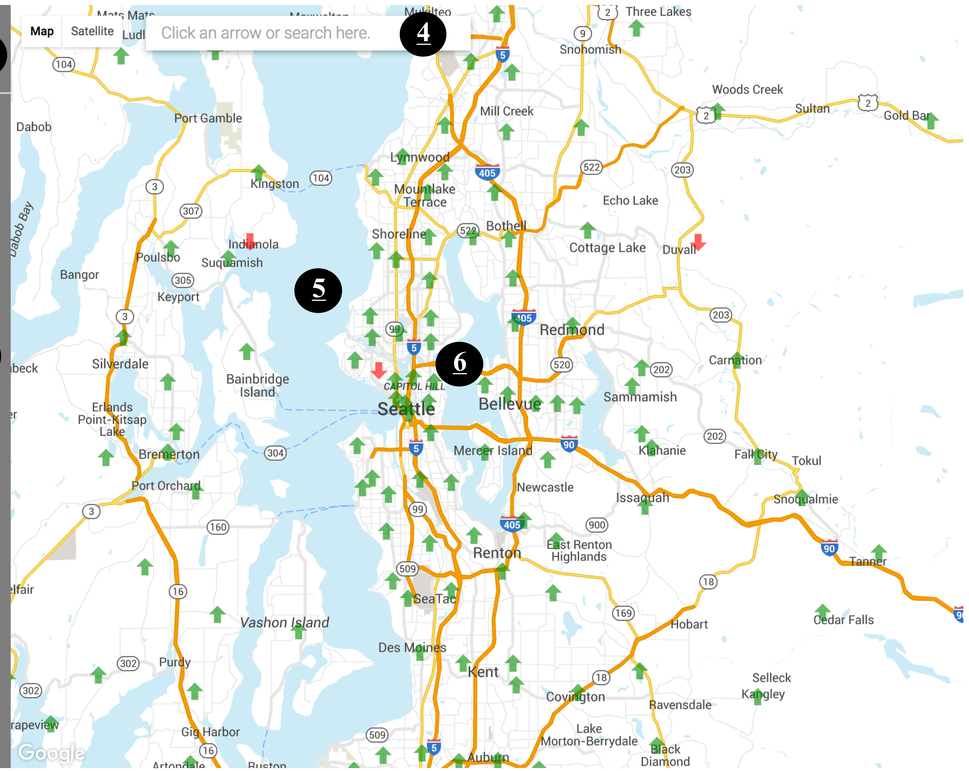
We explored several ideas in Tableau. We want our final visualization to be:
- Intuitive: easy to understand.
- Informative: provide useful data to user.
- Interactive: fun to play with.



Three main tools
- **Google map API**: very popular map API, easy to master.
- **D3**: well-built JavaScript library for interactive visualization.
- **SlideReveal**: A JS library that hide/reveal a sliding window. A container for analytic graphs.

Results





Statistical summaries been show is very selective. For the purpose of our visualization, we want to emphasis both **short-** and **long- term** changes in housing price.

1. **Three sentences** of summary are given right after the title for a quick understanding of the trend.
2. A **line chart** good at showing trends, and the median price per square-foot is plotted from 1996 to 2016.
3. A **histogram** of price per Sq. Ft. to illustrate the relative value with respect to the whole Washington state. Vertical line indicate the housing price at current location.

Google Map API is widely used in a variety of applications, so the user will master basic operations in no time.

4. **Tune the style map** to achieve simplicity and intuitiveness. Gray out roads to make them less visible and only keep main highways.
5. The center of the map is set to downtown Seattle, and the scale is properly chosen so that major areas are included.
6. **Two forms of icon-** an arrow pointing up in green and an arrow pointing down in red - representing the housing price change direction.

Future Work

- **A select box** for choosing selling or rental price for different housing types.
- Create interaction between histogram and markers.
- **Generalize the visualization** so it could be easily transferred to other area.
- **Collect other data** such as crime that could be expressed in a similar way.

Reference

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