A STORY OF HOUSING PRICE INDEX

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Motivation

❖ Having you considered buying your own house?

❖ Do you know the trend of housing prices in different states, or counties?

❖ Housing Price Index

➢ a measure designed to capture changes in the value of single-family houses in the U.S.

➢ There are lots of HPI-related data available online, but it is hard to learn directly from those bunch of numbers.
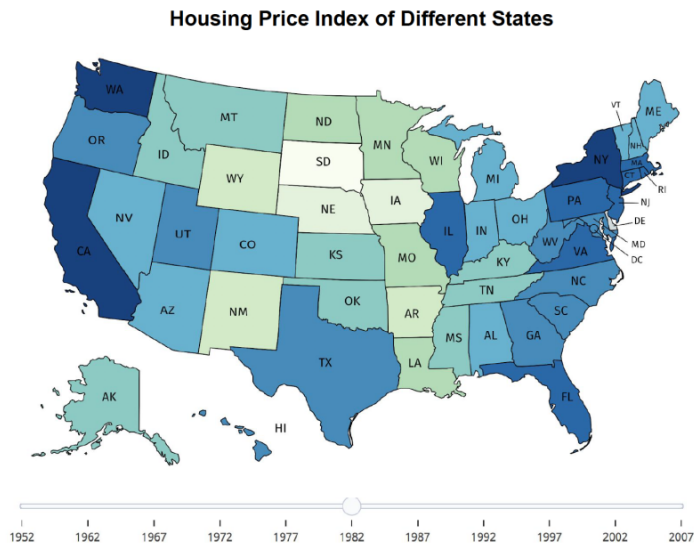
Objectives

❖ Compare the HPI of different states at a historical time point

❖ Visualize changes of HPI of a state over time

❖ Compare HPI changes of a county with the state and the whole U.S.

Objectives

❖ Countrywide

 ➢ Compare the HPI of different states at a historical time point

 ➢ Visualize changes of HPI of a state over time

  ■ Choropleth map of the U.S.

❖ Statewide (and county)

 ➢ Compare HPI changes of a county with the state and the whole U.S.

  ■ Choropleth map of a single state (Figure Factory)

  ■ Line chart comparing HPI over time

Countrywide Visualization

Housing Price Index of Different States

❖ Finished by the previous presentation

   ➤ Use colors to show magnitude

   ➤ Slide over different years

❖ New changes to the visualization

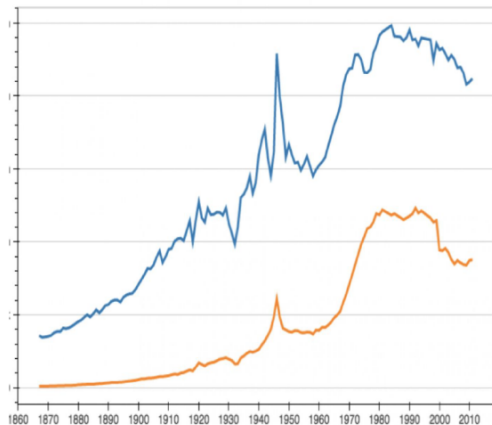   ➤ Consistent colorbar

   ➤ Log-scaled HPI

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Statewide Original Design

Housing Price Index of California

- ❖ Original Design
  - ➢ State map and line chart side by side
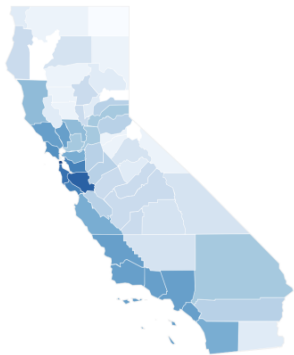 - ➢ Update line chart when a county is clicked
- ❖ Limitations
  - ➢ Choropleth of a state uses Figure Factory, and very limited features are allowed
  - ➢ Click events cannot be handled easily, which would require extensive usage of Javascript and d3.js
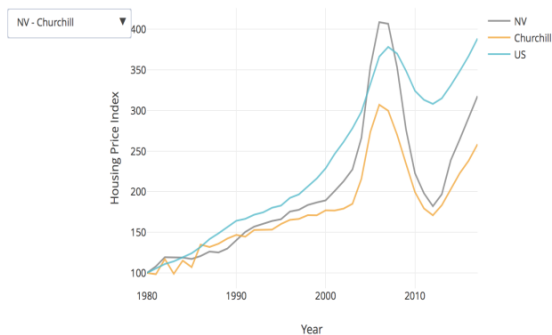
Statewide New Design

Housing Price Index of California

Yearly Housing Price Index Comparison

❖ Due to the limitations, we decided generate the visualizations separately and we only generated choropleth for California as a proof of concept

❖ Added a dropdown widget to the line chart
   ➢ Three lines: Country, State, County
   ➢ 600+ counties, but only showing 250 samples (limitation of plotly)

Demo

- ❖ Overall trend of housing price index is going up
  - ➢ Financial crisis (Nevada)
- ❖ Housing in California is expensive
  - ➢ Exceptions? Counties?
- ❖ Line chart: visualize trend and values more precisely

Questions ?