Project 2 Write-up

Lev Akabas (la286)
Sophie Cong (shc227)
Martin Eizayaga (me393)

Description of Data

Report where you got the data. Describe the variables. If you had to reformat the data or filter it in any way, provide enough details that someone could repeat your results. If you combined multiple datasets, specify how you integrated them. Mention any additional data that you used, such as shape files for maps. Editing is important! You are not required to use every part of the dataset. Selectively choosing a subset can improve usability. Describe any criteria you used for data selection. (10 pts)

Existing building data was scraped from Emporis database for the following U.S. cities: Boston, Chicago, Houston, Los Angeles, Miami, New York, Philadelphia, Phoenix, San Francisco and Seattle[1]. Building data (including Height and Year Constructed) was only scraped for skyscraper and high-rise buildings (as classified by Emporis). The “Year” column was converted to numbers and letters were removed from the “Height” column to prevent errors in data reading. In addition, shape files of famous landmarks were used for some city skylines to indicate when they were built and their shape in the skyline – these shape files were primarily created using Photoshop after looking at the buildings’ general appearance and exact heights.

Population data for each city was taken from the World Population Review, which sources its data from the U.S. Census Bureau(years greater than 2010 are projections)[2]. The years for each population count were converted to a number, and the years between decades were set equal to the last census population count. Only the “Year” and “Population” columns were used in the visualization. This dataset complemented the building dataset and provided a context for the number of buildings being built in a certain year by showing the number of people living in the city then.

Description of Mapping

A description of the mapping from data to visual elements. Describe the scales you used, such as position, color, or shape. Mention any transformations you performed, such as log scales. (10 pts)

Each skyscraper or high rise building in a particular city maps to a shape in the visualization for that city’s skyline; most of these shapes are rectangles, but a few

important landmarks look like the specific buildings themselves. Due to the limited space provided by an SVG, many of these shapes overlap, but they can be seen individually when they drop into the skyline in the animation. The heights of the real-life buildings scaled linearly to the heights of the shapes in the visualization, and the y-axis shows the scale from feet to pixels. The horizontal positions of the shapes is arbitrary — our goal was to try to give a depiction of the city's skyline based on data, not necessarily a hyper-realistic one.

For the section below the skylines showing population, we used a linear scale to represent large population numbers with a smaller number of silhouettes of people, specifically 40,000 people to one silhouette.

The Story

What does your visualization tell us? What was surprising about it? (5 pts)

The visualization shows that the earliest high rises were built in the bigger cities (New York City, San Francisco) around the 1880s. Construction of high rises consistently increased and the construction of skyscrapers (height greater than 330 ft[1]), which began in the 1920s, continued until the late 1930s, during which all cities experienced a halt in building construction due to the Great Depression and then World War II. In the 1950s, construction began again and skyscrapers become dominant in the skylines of bigger cities, whereas in some less built-up cities such as Phoenix, skyscrapers still make up a fraction of the skyline.

There is also a story to each individual city. For example, the sheer number of skyscrapers built in New York City in the first half of the 20th Century compared to the other cities is astounding. Houston is a much more modern city than the other similarly populous ones we looked at, with most of its skyscraper construction taking place in the 1980s or later. Miami's skyline has shot up in the past decade alone.

In general, population only very loosely correlates with building construction. Chicago's population notably peaks in the 1950s and then trends downwards to its present day count, but construction does not slow proportionally or scale down in height. This suggests that while city growth continued in the second half of the 20th Century, residents began moving to the outskirts of the city in suburban areas.

References

[1]www.emporis.com

[2]www.worldpopulationreview.com