LAB 1 REPORT

Dataset: Property data of Ames Iowa (2006-2010)

The data set describes the sale of individual residential property in Ames, Iowa from 2006 to 2010. The data set contains 1334 observations and 15 variables (7 Numerical and 8 Categorical) involved in assessing home values. The data set is taken from Kaggles website.

Features:

Lot Area - Lot size in square feet

Neighborhood Physical locations within Ames city limits in which the house is located

BldgType - Type of dwelling

HouseStyle - Style of dwelling

OverallQual - Rates the overall material and finish of the house

Foundation - Type of foundation

TotalBsmtSF - Total square feet of basement area

CentralAir - Central air conditioning

Electrical - Electrical system

GrLivArea - Above ground living area square feet

BedroomAbvGr – Number of bedrooms

YrSold – Year in which house was sold

SaleType - Type of sale

SaleCondition - Condition of sale
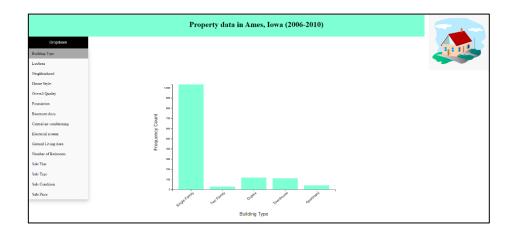
SalePrice – Property sale price

Project Structure:

- index.html – html file where all divisions of the page are defined. Here I have included the d3.js library and all the javascript files of the project.
- index.js – This file loads all the data from housing.csv file and stores it for future processing.
- style.css – Style sheet for the project. Defines styling of all the divisions and web page elements like dropdown button, slider, header and image.
- barchart.js – javascript file to generate bar charts for categorical variables. It has functions to generate the graph by aggregating categorical features and events for mouse hover activities. It will make the bars wider and display frequency count at the top upon mouse hover.
- histogram.js – javascript file to generate histograms for numerical variables. It has functions to generate the graph for all numerical variables and events for mouse hover activities. It will make the bars wider and display frequency count at the top upon mouse hover.
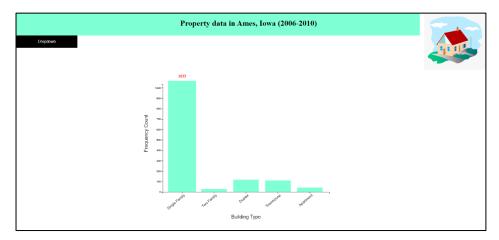
- changeBinNumber.js – It is a listener for the slider bar. When we move the slider to the left, bin size decreases and upon moving it to the right bin size increases. It works only for numerical variables.
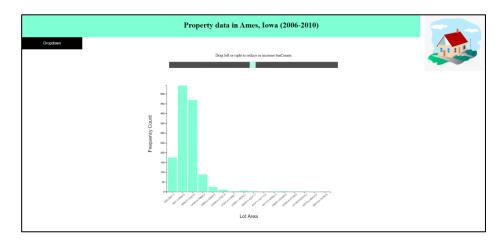
Screenshots:

1) Bar chart for categorical variable Building Type. Slider bar is hidden for categorical variables.
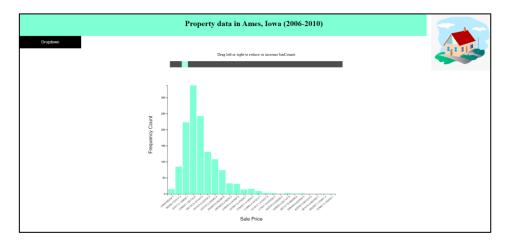

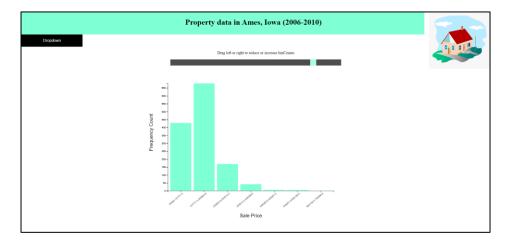2) Mover hover: Upon mouse hover bar zooms out and displays frequency count at the top.

3) Histogram for numerical variable Lot Area. Slider bar is displayed to adjust bin count for numerical variables.

4) Slide left: Increases number of bins

5) Slide right: Decreases number of bins

Youtube link: https://youtu.be/LYiSp2aqjpY

Code snippets:

```javascript
.on("mouseover", function(d) {
    console.log("Hi")
    d3.select(this)
    .attr("x", x(d) - 5)
    .attr("y", y(map[d]) - 15)
    .attr("width", x.bandwidth() + 10)
    .attr("height", graphHeight - y(map[d]) + 15);

    tip.html( "<strong> <span style='color:red'>" + map[d] + "</span></st
rong>");
    tip.show();

})
```

This code snippet zooms in the bar when mouse hover activity happens. We are resetting the width and height of the graph to have the zoom effect.

```javascript
.on("mouseout", function(d) {
    d3.select(this)
    .attr("x", x(d))
    .attr("y", y(map[d]))
    .attr("width", x.bandwidth)
    .attr("height", graphHeight - y(map[d]))
    tip.hide();

})
```

This code snippet zooms out the bar when mouse hover activity completes. We are resetting the width and height of the graph to remove the zoom effect.