Interactive Scatterplot '93 Cars from 1993'

INFX 598E: Advanced Information Visualization

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View visualization: http://www.edwardux.com/assi3.html

Choosing a Domain and Visualization

Changing Our Minds

Our team began the project by selecting a data domain. Initially we chose data about venture capital companies from Crunchbase, with the intention of building an interactive map. Being this was our team's first time using the D3.js framework, we decided to choose an easier visualization that doesn't require rendering maps with GeoJSON or TopoJSON.

Choosing a Visualization Type First

Back at the drawing board (and with a day wasted), we opted to do a more simple visualization, an interactive scatterplot. For data, we looked at publicly available .csv datasets and arrived at a dataset about automobiles in 1993. This dataset has a lot of variables so it seemed perfect for displaying data about cars, with the option of adding filters.

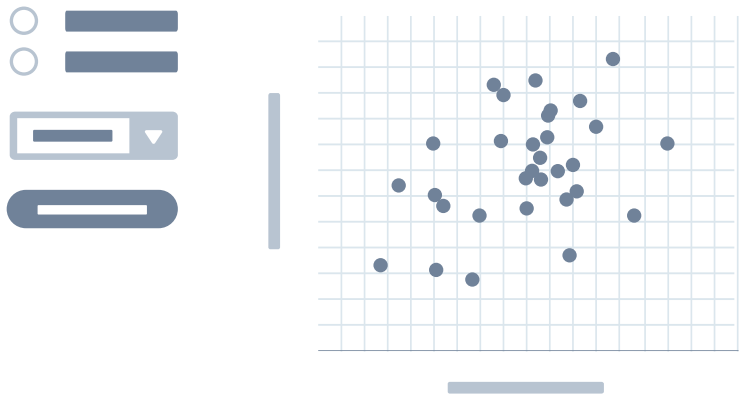
Planning Application

The dataset had many descriptive variables about cars from a variety of manufacturers. The application would display this data on a bivariate axis and allow filtering on other variables. This was the overall vision for the application. A scatterplot was our chosen visualization because we had many quantitative variables, few nominal variables, and thus wanted to show relationships.

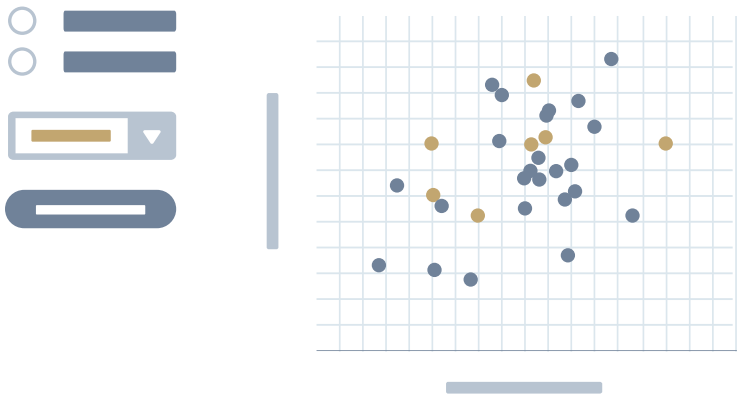
For filtering, we wanted simple UI components to handle interactions, such as radio buttons, dropdowns, or checkboxes. For variables with many choices, a dropdown would be used, and for binary variables a radio button could be employed. This type of application also didn't seem too complicated to make, and this was important as the planning of the original map visualization had taken up a considerable amount of our team's time in terms of planning and research. The storyboard for our application is on the next page.

Storyboard

DEFAULT VIEW (FILTERS LEFT, GRAPH RIGHT)



FILTERING



HOVER TOOLTIP

Final Design

About

The final design is an interactive scatterplot of car data, that includes a radio filter for airbags, a dropdown selector for manufacturer, and two buttons to change and view the data with a new x-axis, miles per gallon and horsepower (default). To keep interaction and visualization simple, each filter is tied to one encoding method - either change a data point in size, or color, but not both for one filter.

Changes from Storyboards

Because our storyboard kept the design and filter mechanics simple, there was not much differentiation from the brainstormed storyboards and the final visualization output. Most changes were around specifics of what the filters ended up being, namely we added a clear filters button and buttons to change the x-axis.

Development Process + Challenges

We each equally worked on brainstorming what visualization and dataset to use, and all development work. We used source control with Github to keep track of changes and new additions. Actual development to build the visualization took course over a three-day period, and included learning and researching specifics of JavaScript to handle our interaction needs. As we expected, interactions took a majority of the time because of the custom JavaScript we had to write. While originally turning to a framework like jQuery UI for front-end components, we opted for basic HTML selectors, and radio buttons. We did use Twitter Bootstrap for the grid layout, and button styling.

Link to Visualization

This was our first attempt at building any D3 visualization, and it was a ton of fun.

View the live visualization: http://www.edwardux.com/assi3