For this assignment we selected a dataset containing ratings of 86 scotch whisky distilleries on a 0-4 scale in 12 different flavor categories: body, sweetness, smoky, medicinal, tobacco, honey, spicy, winey, nutty, malty, fruity, floral (https://www.mathstat.strath.ac.uk/outreach/nessie/nessie_whisky.html). This dataset also contains the longitude and latitude of each distillery, allowing geographic patterns to be investigated.

Our overarching goal was to develop a visualization that would help someone use flavor data to find interesting scotches to try. However, before we outline the usage scenario, let us explore the dataset a little.

The dataset
Flavors are basically independent, with few exceptions (see scatterplot matrix below; confirmed with pca). We investigated using parallel coordinates charts, but the dominant visual encoding - line slopes between attributes - lack easy interpretation since the difference between a 2 honey and a 2 winey look constant, flat slope, but the strength or subtlety of that flavor varies. Saying this whisky has as much honey-ness as it has winey-ness is nonsensical.
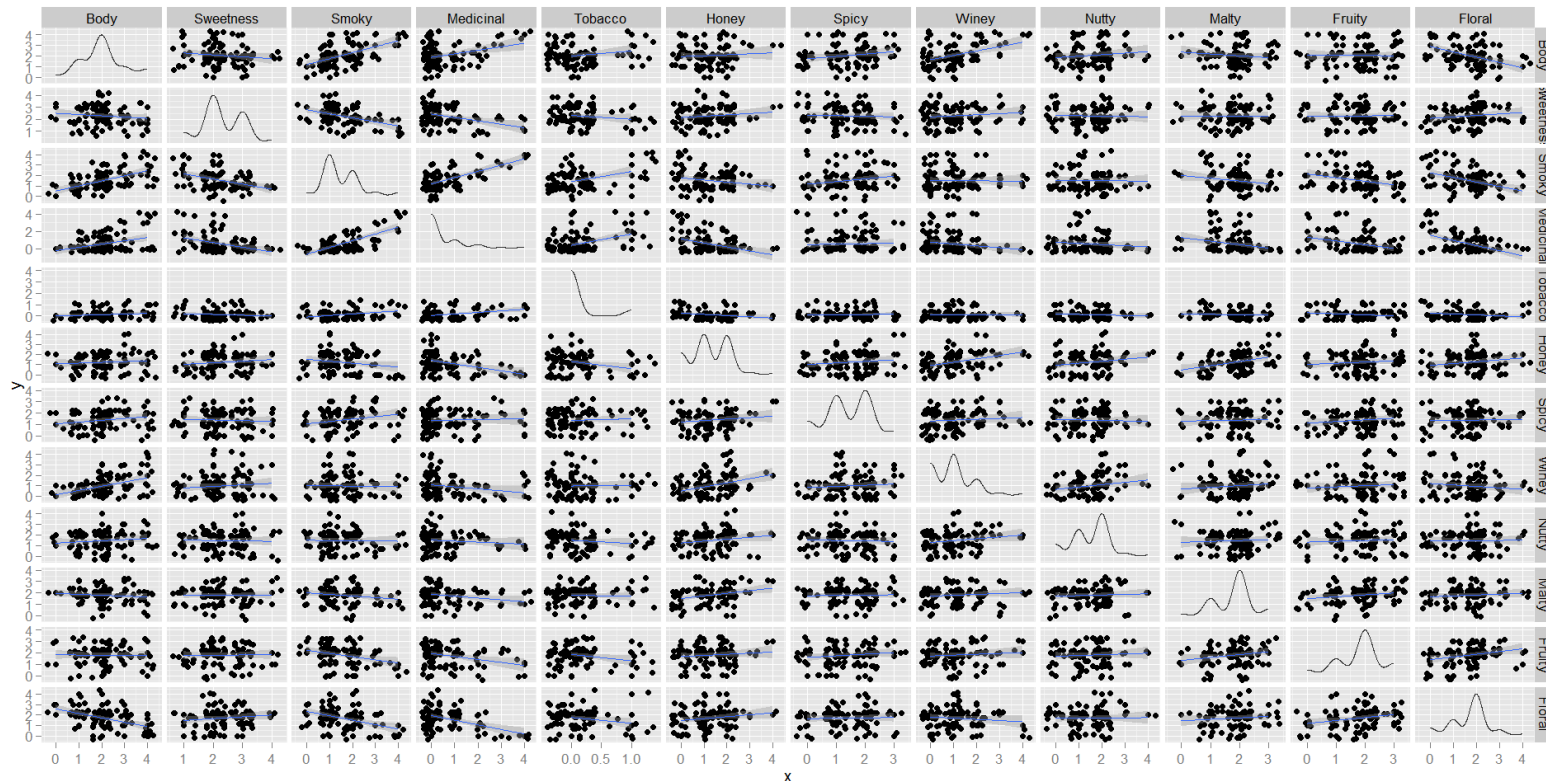
While there seem to be few correlations between flavors, there are interesting geographical relationships (e.g., the Islay region, known for peaty/smoky scotches, scores high in the "Smoky" and "Medicinal" flavors). Other geographic relationships can be seen below (mean flavor hexbinned):
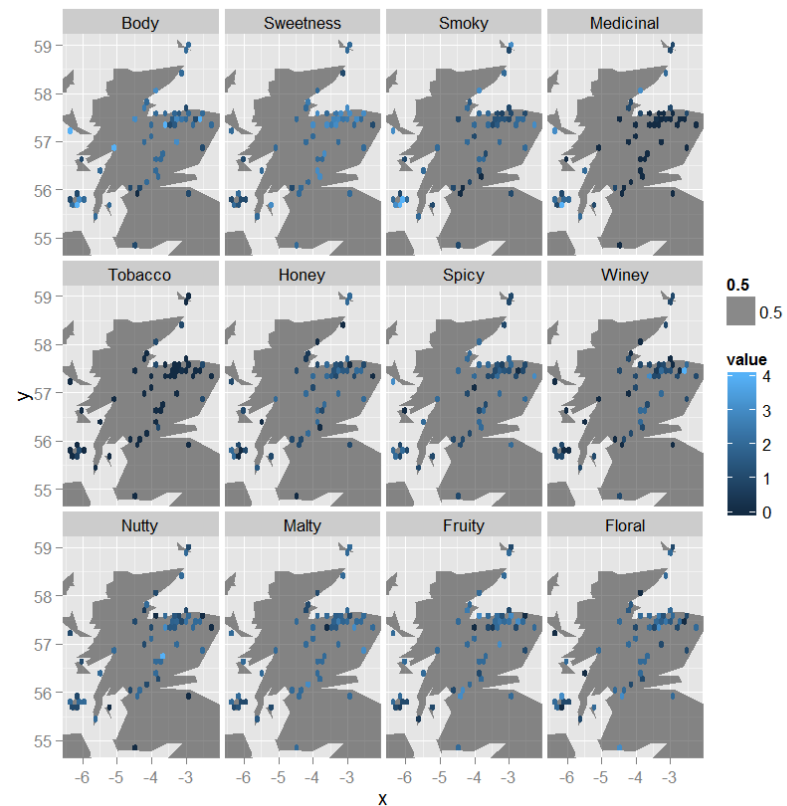

Therefore, perhaps some usage that explores this geographic relationship in the context of a particular scotch or scotches.

Usage scenario

We imagine a user who wishes to navigate the complex world of scotch. They might have tried only a few scotches, and ask themselves, "What scotch should I drink next?". Our system aims to help guide users to find scotches similar to those they have had, or ones quite different if they wish to try something new. It also aims to give them a sense of the geographic distribution of flavor characteristics. We also envision iterative use - tasting a scotch, selecting it as a baseline, and filtering compared to it to find another scotch to taste. The fullest sensemaking comes from users interacting with the data analytically and physically, and we encourage it to be evaluated in such a context.

A basic usage scenario begins when the user select a scotch they are interested in from a table (for example, one they have enjoyed in the past or even just tasted seconds before). The table shows flavor characteristics of various scotches as horizontal bars (for easy comparison down columns). They can select either from an alphabetical list or a map.
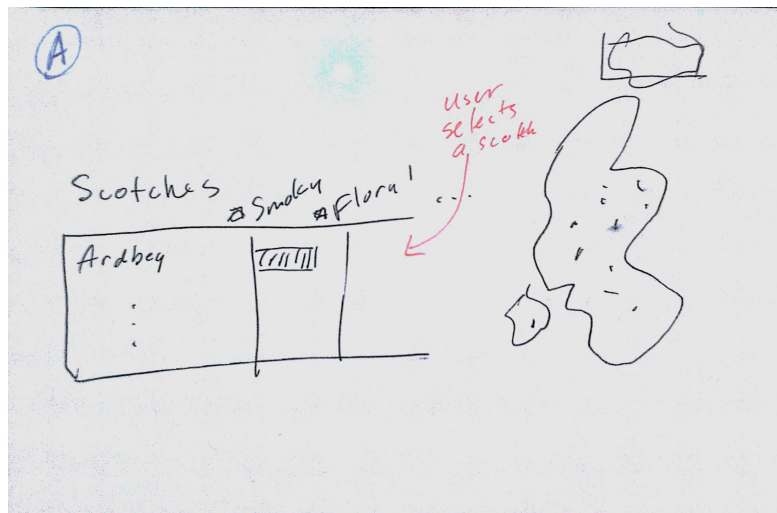
They are then shown the top 5 most similar scotches by Euclidean distance in flavor space, and the 5 least similar. The points on the map are drawn with radius proportional to the square of the distance (in order to exaggerate extreme differences; for an example, click on Ardbeg and note as most points shrink to a small dot). This allows the user to begin to get a sense of the similarity of regional scotches, such as the well-known "peatiness" ("smokiness") of the Islay region (lower inset on the map). Bar charts embedded in the table also allow for a quick visual comparison of the scotch flavors.
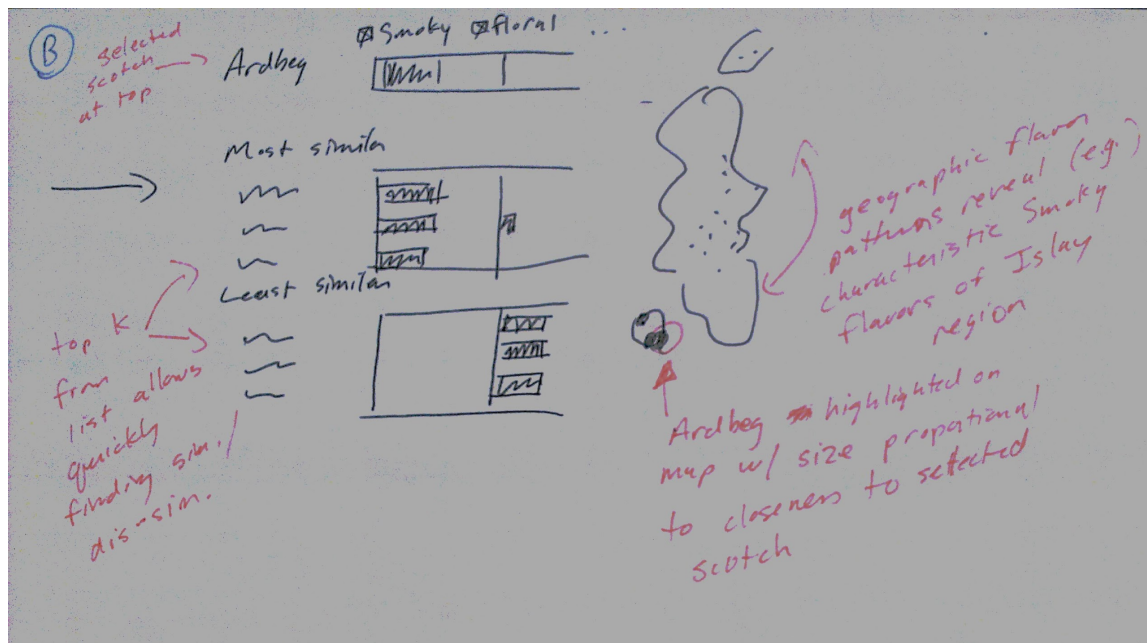

We also offer more fine-grained filters, for example, excluding columns from the distance function (in order to explore only a subset of flavors), or specifying

that the user would prefer a scotch "like Ardbeg, but less Smoky" (for example) by adding a filter to a column.
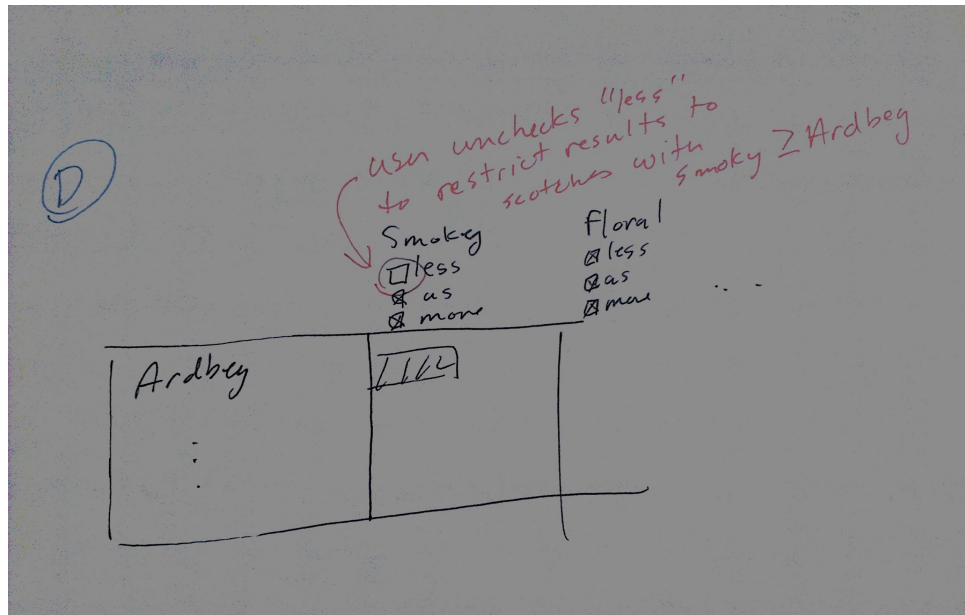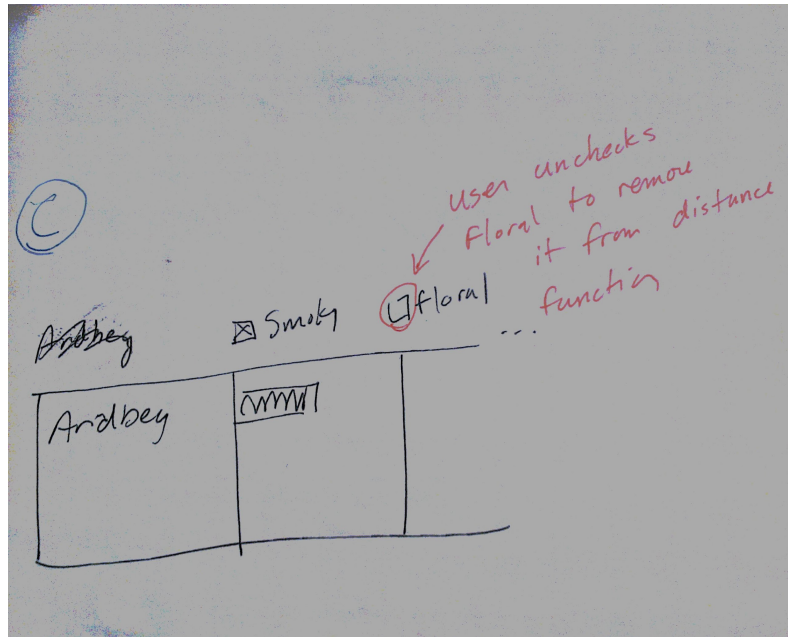

We also considered more complex interactions (e.g. interactive controls as tooltips to do the filtering), but did not have time to implement these. We were only able to complete a (less elegant) clicking on column titles to cycle through options. We employed short tooltips to attempt to explain how these

interactions work to the user, which display when hovering over the columns and present sentences like "only showing scotches with more Body than Ardberg".

Selected scotch

Distillery	> Body	Sweetness	Smoky	Medicine
Ardbeg				

Only showing scotches with more Body than Ardbeg
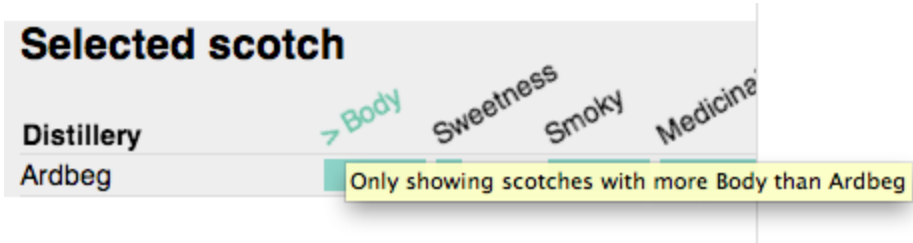
Some other sketches of column header UI:
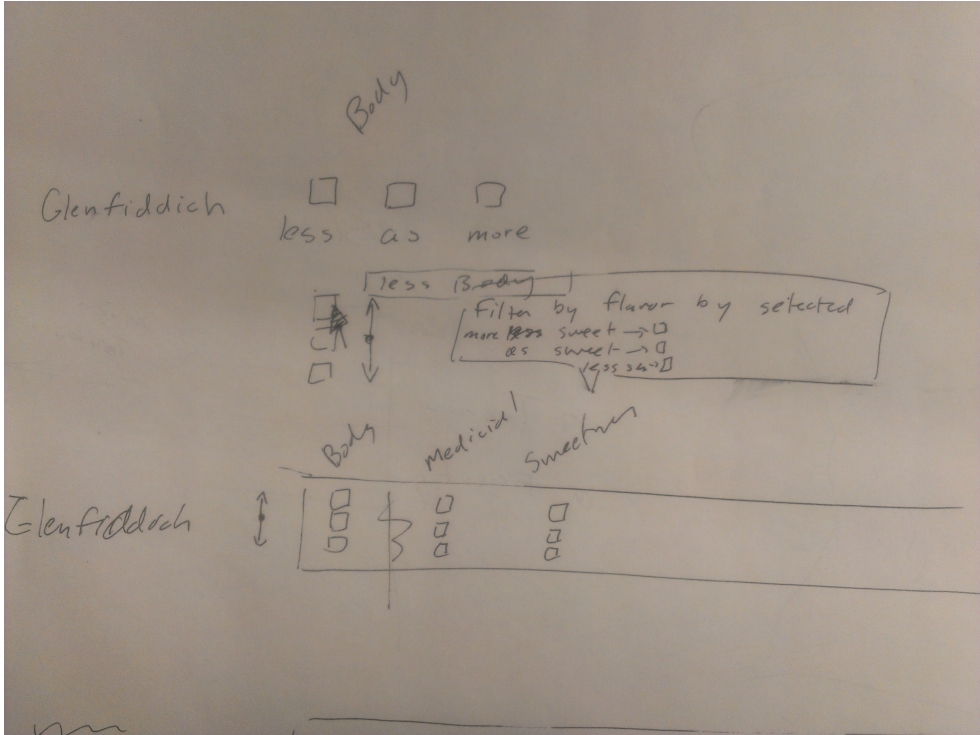
selecting a scotch
and desired similar
flavor