

Assignment 2

Interactive TopoJSON Map

Secondary Bar Chart

Introduction

In this assignment you will take the example USA TopoJSON Map, and list of airports we studied in class, and create an interactive version where 1) Hovering over the Voronoi cell of each airport not only displays the arcs of the airline routes from that airport, but also displays the airport name in a field on the chart. 2) Clicking on the Voronoi cell of each airport displays a sorted bar chart of the 20 largest adjacent airports. As we discussed in class, the “size” of an airport is the number of other airports to which an airline flight is available. The class HTML template can be used to improve the appearance of the project.

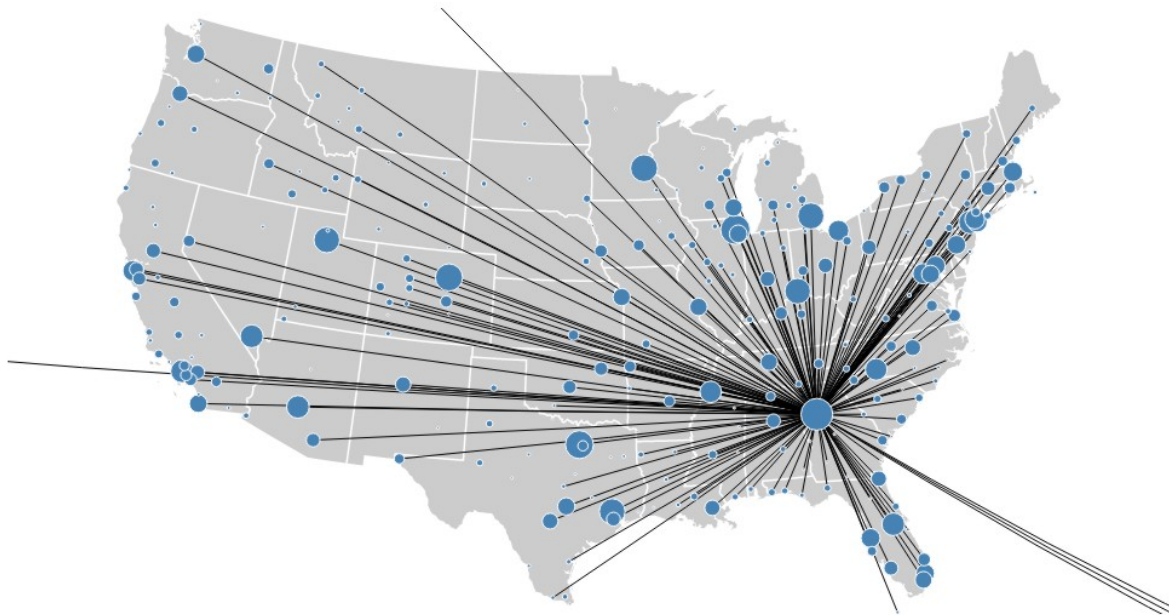
Input Data

You will be using the same data files provided in the class example:

- 1) us.json – a topoJSON file containing the state outlines of the continental United States
- 2) flights.csv – a CSV file with origin and destination airport IATA codes for all available routes
- 3) airports.csv – A CSV file containing a list of airport IATA codes, airport name, city, state, latitude and longitude.

In class we stepped through code which draws the state outlines, draws circles representing the airports, draws the arcs representing the flights between airports, and finally draws a Voronoi diagram based on the airport locations. The resulting layout used pure CSS to display the flight arcs or Voronoi cells based on where the mouse was hovering.

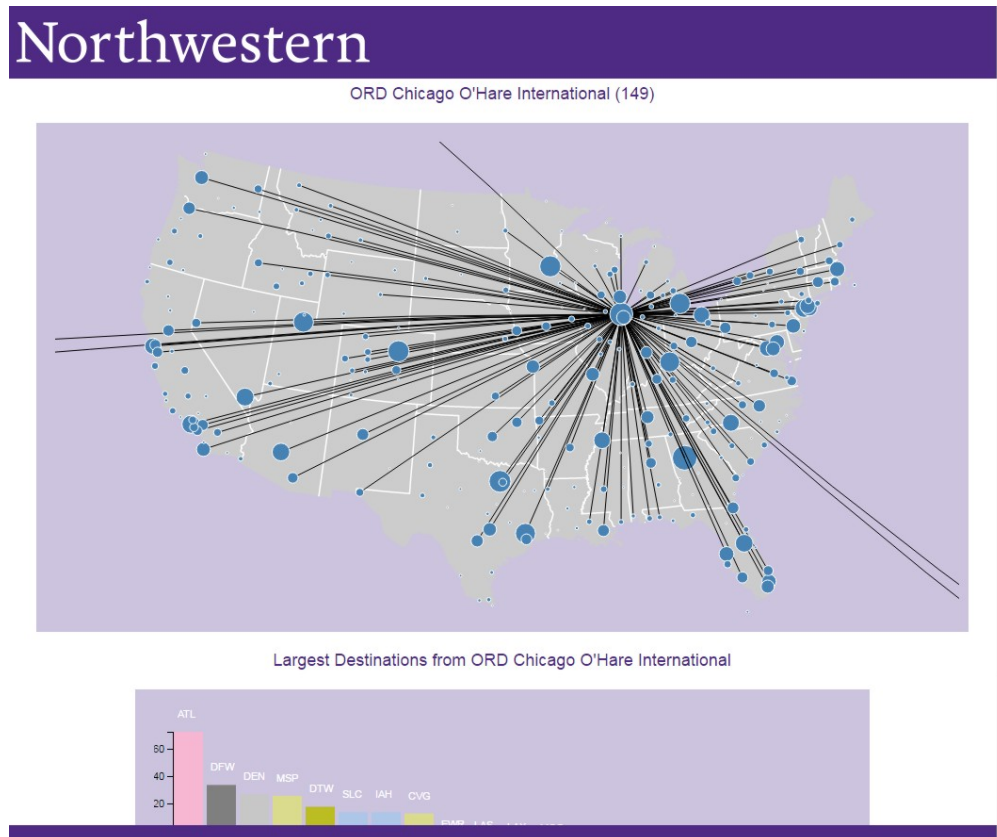
Recall the appearance of the original US Map example in class:



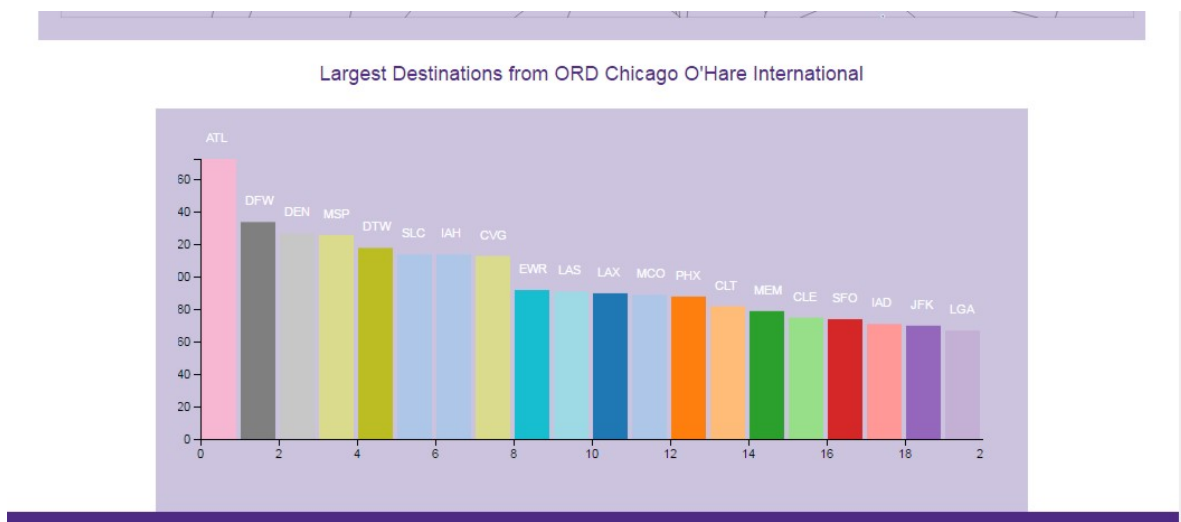
In this screen grab the mouse was hovering over Atlanta Hartsfield Airport (ATL) and thus the flight arcs from that airport are displayed.

Assignment Output

The desired appearance of the assignment is as follows (the browser window is split between two screen grabs). Top half:



Bottom Half (with fully visible bar chart):



In the screen grabs above, the mouse was hovering over Chicago O'Hare (ORD). ORD was clicked to display the bar chart. By the time you read this assignment sheet, you should have seen a demonstration of the finished product in class.

Point Allocation

This is a 10 point assignment

- Porting the original example map code to the class HTML template - 2 points
- Hovering the mouse over an Airport (Voronoi cell) displays its name. If the mouse is not hovering over a cell blank out the name and display the Voronoi diagram – 2 points
- Clicking on an Airport (Voronoi cell) displays the “Largest Destinations...” string. – 2 points
- Clicking on an Airport (Voronoi cell) displays a bar chart in the lower chart area. - 2 points
- The bar chart displays the 20 largest adjacent airports (sorted) - 2 points