The background of the slide is a dense field of three-dimensional numbers (0-9) in various shades of blue and white, creating a sense of depth and data. The numbers are scattered across the entire frame, with some appearing larger and more prominent than others.

Interactive Choropleth Map Dashboard Visualizing Data from the Bureau of Labor Statistics

Justin, Hannah, Rob, Leanne, Lori

BLS Interactive Choropleth Map



Bureau of Labor Statistics



Data Jobs

US Data Positions
Salary & Wages



Tools

Jupyter Notebook
HTML/CSS/JS
SQL

Project Outline

Displaying an interactive dashboard to show trends in data science employment, using data from the Bureau of Labor Statistics.

- ◆ Pulled data from the Bureau of Labor Statistics for May 2020
- ◆ Cleaned and filtered data in Python/Pandas/Javascript
- ◆ Geojson access through a flask API
- ◆ Created dynamic maps and tables with Javascript
- ◆ Created an HTML dashboard to hold our visualizations

B.L.S. Job Codes We Tapped

We looked at a B.L.S. employment summary data by state for the month of May 2020 and tapped the following job codes

- 15-1211 Computer systems analysts
- 15-1221 Computer and information research scientists
- 15-1245 Database administrators and architects
- 15-2031 Operations research analysts
- 15-2041 Statisticians
- 15-1251 Computer programmers
- 15-1257 Web developers digital interface designers
- 15-2098 Data science mathematical science occupations all other

javascript data wrangling

- staged csv's w/python&pandas filtering and filename assignment
- used d3 to define js objects for each csv
- then used javascript for the majority of the data processing
- script generates unique variable names for each plotting dataset
- script then calls a plotting dataset via user input
- script updates plotting data and then refreshes table and map
- script dynamically assigns colors based on called dataset values

[1664] ["Alabama_ordered_hourly_wages_summary_for_jobCode_15_1211", "Alabama_ordered_annual_wages_summary_for_jobCode_15_1211", "Alaska_ordered_hourly_wages_summary_for_jobCode_15_1211", "Alaska_ordered_annual_wages_summary_for_jobCode_15_1211", "Arizona_ordered_hourly_wages_summary_for_jobCode_15_1211", "Arizona_ordered_annual_wages_summary_for_jobCode_15_1211", "Arkansas_ordered_hourly_wages_summary_for_jobCode_15_1211", "Arkansas_ordered_annual_wages_summary_for_jobCode_15_1211", "California_ordered_hourly_wages_summary_for_jobCode_15_1211", "California_ordered_annual_wages_summary_for_jobCode_15_1211", "Colorado_ordered_hourly_wages_summary_for_jobCode_15_1211", "Colorado_ordered_annual_wages_summary_for_jobCode_15_1211", "Connecticut_ordered_hourly_wages_summary_for_jobCode_15_1211", "Connecticut_ordered_annual_wages_summary_for_jobCode_15_1211", "Delaware_ordered_hourly_wages_summary_for_jobCode_15_1211", "Delaware_ordered_annual_wages_summary_for_jobCode_15_1211", "District of Columbia_ordered_hourly_wages_summary_for_jobCode_15_1211", "District of Columbia_ordered_annual_wages_summary_for_jobCode_15_1211", "Florida_ordered_hourly_wages_summary_for_jobCode_15_1211", "Florida_ordered_annual_wages_summary_for_jobCode_15_1211", "Georgia_ordered_hourly_wages_summary_for_jobCode_15_1211", "Georgia_ordered_annual_wages_summary_for_jobCode_15_1211", "Hawaii_ordered_hourly_wages_summary_for_jobCode_15_1211", "Hawaii_ordered_annual_wages_summary_for_jobCode_15_1211", "Illinois_ordered_hourly_wages_summary_for_jobCode_15_1211", "Illinois_ordered_annual_wages_summary_for_jobCode_15_1211", "Indiana_ordered_hourly_wages_summary_for_jobCode_15_1211", "Indiana_ordered_annual_wages_summary_for_jobCode_15_1211", "Iowa_ordered_hourly_wages_summary_for_jobCode_15_1211", "Iowa_ordered_annual_wages_summary_for_jobCode_15_1211", "Kansas_ordered_hourly_wages_summary_for_jobCode_15_1211", "Kansas_ordered_annual_wages_summary_for_jobCode_15_1211", "Kentucky_ordered_hourly_wages_summary_for_jobCode_15_1211", "Kentucky_ordered_annual_wages_summary_for_jobCode_15_1211", "Louisiana_ordered_hourly_wages_summary_for_jobCode_15_1211", "Louisiana_ordered_annual_wages_summary_for_jobCode_15_1211", "Maine_ordered_hourly_wages_summary_for_jobCode_15_1211", "Maine_ordered_annual_wages_summary_for_jobCode_15_1211", "Maryland_ordered_hourly_wages_summary_for_jobCode_15_1211", "Maryland_ordered_annual_wages_summary_for_jobCode_15_1211", "Massachusetts_ordered_hourly_wages_summary_for_jobCode_15_1211", "Massachusetts_ordered_annual_wages_summary_for_jobCode_15_1211", "Michigan_ordered_hourly_wages_summary_for_jobCode_15_1211", "Michigan_ordered_annual_wages_summary_for_jobCode_15_1211", "Minnesota_ordered_hourly_wages_summary_for_jobCode_15_1211", "Minnesota_ordered_annual_wages_summary_for_jobCode_15_1211", "Mississippi_ordered_hourly_wages_summary_for_jobCode_15_1211", "Mississippi_ordered_annual_wages_summary_for_jobCode_15_1211"]	34: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 111160}, 35: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 131720}, 36: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT10", statH_PCT10: 21.66}, 37: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT25", statH_PCT25: 26.77}, 38: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_MEDIAN", statH_MEDIAN: 33.58}, 39: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_MEAN", statH_MEAN: 35.19}, 40: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT75", statH_PCT75: 41.79}, 41: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT90", statH_PCT90: 50.64}, 42: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT10", statA_PCT10: 45060}, 43: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT25", statA_PCT25: 55680}, 44: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_MEDIAN", statA_MEDIAN: 69840}, 45: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_MEAN", statA_MEAN: 73190}, 46: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 86930}, 47: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 105330}, 48: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT10", statA_PCT10: 105330}, 49: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT25", statA_PCT25: 105330}, 50: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_MEDIAN", statA_MEDIAN: 105330}, 51: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_MEAN", statA_MEAN: 105330}, 52: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 105330}, 53: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 105330}
---	--

► [0 ... 99]

▶ [100 ... 199]

► [200 ... 299]

► [300 ... 399]

► [400 ... 499]

► [500 ... 599]

► [600 ... 699]

► [700 ... 799]

[illegible]

```

#0: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT10", statH_PCT10: 26.99}
#1: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT25", statH_PCT25: 33.44}
#2: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_MEDIAN", statH_MEDIAN: 42.57}
#3: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_MEAN", statH_MEAN: 44.97}
#4: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT75", statH_PCT75: 55.11}
#5: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT90", statH_PCT90: 67.29}
#6: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_annual_wages_summary", statName: "A_PCT10", statA_PCT10: 56130}
#7: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_annual_wages_summary", statName: "A_PCT25", statA_PCT25: 69560}
#8: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_annual_wages_summary", statName: "A_MEDIAN", statA_MEDIAN: 88550}
#9: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_annual_wages_summary", statName: "A_MEAN", statA_MEAN: 93530}
#10: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 114620}
#11: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 139960}
#12: {jobCode: "15-1211", stateUS: "Alabama", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT10", statH_PCT10: 27.66}
#13: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT25", statH_PCT25: 33.49}
#14: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_hourly_wages_summary", statName: "H_MEDIAN", statH_MEDIAN: 41.12}
#15: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_hourly_wages_summary", statName: "H_MEAN", statH_MEAN: 41.79}
#16: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT75", statH_PCT75: 50.28}
#17: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT90", statH_PCT90: 59.12}
#18: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_annual_wages_summary", statName: "A_PCT10", statA_PCT10: 57540}
#19: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_annual_wages_summary", statName: "A_PCT25", statA_PCT25: 69660}
#20: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_annual_wages_summary", statName: "A_MEDIAN", statA_MEDIAN: 85530}
#21: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_annual_wages_summary", statName: "A_MEAN", statA_MEAN: 86930}
#22: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 104590}
#23: {jobCode: "15-1211", stateUS: "Alaska", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 122960}
#24: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT10", statH_PCT10: 27.53}
#25: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT25", statH_PCT25: 34.32}
#26: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_hourly_wages_summary", statName: "H_MEDIAN", statH_MEDIAN: 42.77}
#27: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_hourly_wages_summary", statName: "H_MEAN", statH_MEAN: 44.16}
#28: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT75", statH_PCT75: 53.44}
#29: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT90", statH_PCT90: 63.33}
#30: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_PCT10", statA_PCT10: 57270}
#31: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_PCT25", statA_PCT25: 71380}
#32: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_MEDIAN", statA_MEDIAN: 88970}
#33: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_MEAN", statA_MEAN: 91840}
#34: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 111160}
#35: {jobCode: "15-1211", stateUS: "Arizona", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 131720}
#36: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT10", statH_PCT10: 21.66}
#37: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT25", statH_PCT25: 26.77}
#38: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_MEDIAN", statH_MEDIAN: 33.58}
#39: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_MEAN", statH_MEAN: 35.19}
#40: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT75", statH_PCT75: 41.79}
#41: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_hourly_wages_summary", statName: "H_PCT90", statH_PCT90: 50.64}
#42: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT10", statA_PCT10: 45660}
#43: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT25", statA_PCT25: 55680}
#44: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_MEDIAN", statA_MEDIAN: 69840}
#45: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_MEAN", statA_MEAN: 73190}
#46: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT75", statA_PCT75: 86930}
#47: {jobCode: "15-1211", stateUS: "Arkansas", resourceName: "ordered_annual_wages_summary", statName: "A_PCT90", statA_PCT90: 105330}

```

```

"jobCode_15_1211", "Maine_ordered_annual_wages_summary_for_jobCode_15_1211", "Maine_ordered_wages_summary_for_jobCode_15_1211", "US_or
wages_summary_for_jobCode_15_1211", "Maryland_ordered_wages_summary_for_jobCode_15_1211", "US_ordered_wages_summary_for_jobCode_15_12
_1211", "Massachusetts_ordered_wages_summary_for_jobCode_15_1211", "US_ordered_wages_summary_for_jobCode_15_1211", "Michigan_ordered
summary_for_jobCode_15_1211", "US_ordered_wages_summary_for_jobCode_15_1211", "Minnesota_ordered_hourly_wages_summary_for_jobCode_15
ordered_wages_summary_for_jobCode_15_1211", "Mississippi_ordered_hourly_wages_summary_for_jobCode_15_1211", "Mississippi_ordered_ann
jobCode_15_1211", --1

```


flask API provides access to the states geojson

created a flask API to serve up the states plotting data source

```
app.py
1 from flask import Flask
2 from flask import jsonify
3
4 app = Flask(__name__)
5 app.route('/states/', methods=['GET', 'POST'])
6
7 def states():
8     return jsonify(
9         {
10             "type": "FeatureCollection", "features": [
11                 {
12                     "type": "Feature", "id": "01", "properties": {
13                         "name": "Alabama", "density": 94.65, "geometry": {
14                             "type": "Polygon", "coordinates": [
15                                 [
16                                     [-87.359296, 35.00118], [-85.60667, 34.984749], [-85.431413, 34.124869], [-85.184951, 32.859696], [-85.069935, 32.580372], [-84.
17                                     85.004212, 32.322956], [-84.889196, 32.262709], [-85.058981, 32.13674], [-85.053504, 32.01077], [-85.141136, 31.840985], [-85.042551, 31.539753], [-85.113751, 31.27686], [-8
18                                     85.497137, 30.997536], [-87.600282, 30.997536], [-87.633143, 30.86609], [-87.408589, 30.674397], [-87.446927, 30.510088], [-87.37025, 30.427934], [-87.518128, 30.280057], [-8
19                                     87.90699, 30.411504], [-87.934375, 30.657966], [-88.011052, 30.685351], [-88.10416, 30.499135], [-88.137022, 30.318396], [-88.394438, 30.367688], [-88.471115, 31.895754], [-8
20                                     88.098683, 34.891641], [-88.202745, 34.995703], [-87.359296, 35.00118]]], "type": "Polygon", "id": "01", "properties": {
21                                     "density": 94.65, "name": "Alabama"}, "type": "Feature"
22                                 ],
23                                 [
24                                     [-131.602021, 55.117982], [-131.569159, 55.28229], [-131.355558, 55.183705], [-131.36842, 55.01392], [-131.602021, 55.117982]], [
25                                     [-131.645836, 55.304197], [-131.749898, 55.128935], [-131.832052, 55.189182], [-131.832052, 55.424691], [
26                                     [-132.97673, 56.437924], [
27                                     [-132.735747, 56.459832], [-132.631685,
28                                     132.664547, 56.273616], [-132.878148, 56.240754], [-133.069841, 56.333862], [-132.97673, 56.437924], [
29                                     [
30                                     [-133.595627, 56.350293], [-133.162949, 56.31743], [-133.05341,
31                                     132.620732, 55.912138], [-132.472854, 55.780691], [-132.4619, 55.671152], [-132.357838, 55.649245], [-132.341408, 55.506844], [-132.166146, 55.364444], [-132.166146, 55.238
32                                     131.97993, 55.17828], [-131.958022, 54.789365], [-132.029222, 54.701734], [-132.308546, 54.718165], [-132.385223, 54.915335], [-132.483808, 54.898904], [-132.686455, 55.04
33                                     132.916486, 55.046781], [-132.889102, 54.898904], [-132.73027, 54.937242], [-132.626209, 54.882473], [-132.675501, 54.679826], [-132.867194, 54.701734], [-133.157472, 54.95
34                                     133.223195, 55.22752], [-133.453227, 55.216566], [-133.453227, 55.20628], [-133.277964, 55.331582], [-133.102702, 55.42469], [-133.17938, 55.588998], [-133.387503, 55.6218
35                                     133.497042, 56.0162], [-133.639442, 55.923092], [-133.694212, 56.070969], [-133.546335, 56.142169], [-133.666827, 56.311955], [-133.595627, 56.350293], [-133.738027, 55
36                                     133.545035, 55.490413], [-133.414888, 55.572568], [-133.283441, 55.304229], [-133.420365, 55.386352], [-133.633966, 55.430167], [-133.738027, 55.556137], [
37                                     [-133.907813,
38                                     133.456213, 57.029434], [-133.885905, 57.095157], [-133.343688, 57.002049], [-133.102702, 57.007526], [-132.932917, 56.82133], [-132.620732, 56.667956], [-132.653593, 56.55
39                                     133.042456, 56.520078], [-133.201287, 56.448878], [-133.420365, 56.492694], [-133.66135, 56.448878], [-133.710643, 56.684386], [-133.688735, 56.837741], [-133.869474, 56.84
40                                     133.907813, 56.930849], [
41                                     [
42                                     [-134.115936, 56.48174], [-134.25286, 56.558417], [-134.400737, 56.722725], [-134.417168, 56.848695], [-134.296675, 56.90894], [-134.170706, 56
43                                     134.143321, 56.952757], [-133.748981, 56.772017], [-133.710643, 56.596755], [-133.847566, 56.574848], [-133.935197, 56.377678], [-133.836612, 56.322908], [-133.957105, 56.4
44                                     134.132367, 55.999769], [-134.230952, 56.070969], [-134.291198, 56.350293], [-134.15936, 56.48174], [
45                                     [
46                                     [-134.632446, 56.28457], [-134.669107, 56.169554], [-134.806031, 56
47                                     135.178463, 56.67891], [-135.413971, 56.810356], [-135.331817, 56.914418], [-135.424925, 57.166357], [-135.687818, 57.369004], [-135.419448, 57.566174], [-135.298955, 57.48
48                                     134.849846, 57.407343], [-134.844369, 57.248511], [-134.632446, 56.728202], [-134.632446, 56.28457], [
49                                     [
50                                     [-134.712923, 58.223407], [-134.373353, 58.14673], [-134.176183, 58
51                                     134.187137, 58.081006], [-133.902336, 57.807159], [-134.095055, 57.850975], [-134.148798, 57.578671], [-133.935197, 57.615466], [-133.869474, 57.363527], [-134.083075, 57.2
52                                     134.499322, 57.029434], [-134.603384, 57.034911], [-134.6472, 57.226604], [-134.575999, 57.341619], [-134.608861, 57.511404], [-134.729354, 57.719528], [-134.707446, 57.825
53                                     134.91557, 58.212453], [-134.953908, 58.409623], [-134.712923, 58.223407], [
54                                     [
55                                     [-135.857603, 57.330665], [-135.857603, 57.330665], [-135.715203, 57.330665], [-135.567326, 57.149926], [-135.633049, 5
56                                     135.857603, 56.956721], [-135.824742, 57.193742], [-135.857603, 57.330665], [-135.729328, 58.206976], [-135.890465, 58.201499], [-135.780926, 58.28913], [-135.436215, 5
57                                     135.64948, 58.037191], [-135.59471, 57.987898], [-135.45231, 58.135776], [-135.107263, 58.086483], [-134.91557, 57.976944], [-135.025108, 57.779775], [-134.937477, 57.76334
58                                     135.085355, 57.62112], [-135.572802, 57.675113], [-135.556372, 57.456635], [-135.709726, 57.369004], [-135.890465, 57.407343], [-136.000004, 57.544266], [-136.208128, 57.4
59                                     136.569606, 57.16698], [-136.558652, 58.075529], [-136.421728, 58.130299], [-136.377913, 58.267222], [-136.279328, 58.206976], [
60                                     [
61                                     [-147.079854, 60.200582], [-147.501579,
62                                     147.53444, 59.850058], [-147.874011, 59.784359], [-147.80281, 59.937689], [-147.435855, 60.09652], [-147.205824, 60.271782], [-147.079854, 60.200582], [
63                                     [-147.561825, 60
64                                     147.616594, 60.370367], [-147.758995, 60.156767], [-147.951625, 60.227967], [-147.791856, 60.474229], [-147.561825, 60.578491], [
65                                     [
66                                     [-147.786379, 60.245291], [-147.682318,
67                                     147.162008, 60.157661], [-146.888161, 60.185044], [-146.510512, 60.185044], [-146.099482, 60.146706], [-145.858496, 60.168614], [-145.622988, 60.08646], [-145.195767, 69.993
68                                     144.461877, 60.02613], [-144.078491, 60.059075], [-143.914183, 60.130275], [-143.497935, 60.141229], [-143.503412, 60.091936], [-143.25695, 60.19321], [-142.747594, 70.04
69                                     142.079408, 69.856428], [-142.008207, 69.801659], [-141.712453, 69.790705], [-141.433129, 69.697597], [-141.378359, 69.63735], [-141.208574, 69.686643], [-141.00045, 69.648
70                                     140.53491, 60.22249], [-140.474664, 60.310121], [-139.987216, 60.184151], [-139.69639, 60.342983], [-139.08899, 60.359413], [-139.198537, 60.091043], [-139.045183, 59.997
71                                     138.623458, 59.767904], [-137.604747, 59.242118], [-137.445916, 58.908024], [-137.265177, 59.001132], [-136.827022, 59.159963], [-136.580559, 59.16544], [-136.465544, 59.28
72                                     136.301236, 59.466672], [-136.25742, 59.62503], [-135.945234, 59.663842], [-135.479694, 59.800766], [-135.025108, 59.565257], [-135.068924, 59.422857], [-134.959385, 59.28
73                                     134.378829, 59.033994], [-134.400737, 58.973748], [-134.25286, 58.858732], [-133.842089, 58.727285], [-133.173903, 58.152206], [-133.075318, 57.998852], [-132.867194, 57.84
74                                     132.253777, 57.21565], [-132.368792, 57.095157], [-132.05113, 57.051341], [-132.127807, 56.876079], [-131.870391, 56.804879], [-131.837529, 56.602232], [-131.580113, 56.613
75                                     130.78048, 56.366724], [-130.621648, 56.268139], [-130.468294, 56.240754], [-130.424478, 56.142169], [-130.101339, 56.114785], [-130.002754, 55.994292], [-130.150631, 55.76
76                                     129.963623, 55.276813], [-130.095862, 55.200136], [-130.336847, 55.208121], [-130.687372, 54.718165], [-130.785597, 54.822227], [-130.917403, 54.789365], [-131.01511, 54.9
77                                     131.092665, 55.189182], [-130.862634, 55.298712], [-130.928357, 55.337059], [-131.158389, 55.200136], [-131.284358, 55.287767], [-131.426759, 55.238474], [-131.843006, 55.4
78                                     131.963499, 55.616383], [-131.974453, 55.49589], [-132.182576, 55.588998], [-132.226392, 55.704014], [-132.083991, 55.829984], [-132.127807, 55.959553], [-132.324977, 55.85
79                                     132.642639, 56.032631], [-132.719317, 56.218847], [-132.527624, 56.339339], [-132.341408, 56.339339], [-132.396177, 56.487217], [-132.297592, 56.67891], [-132.450946, 56.67
80                                     132.002164, 57.029434], [-132.5108, 57.177211], [-132.507806, 57.573128], [-132.57781, 57.52642], [-132.630412, 57.700728], [-132.814705, 57.834541], [-134.073121, 58.05

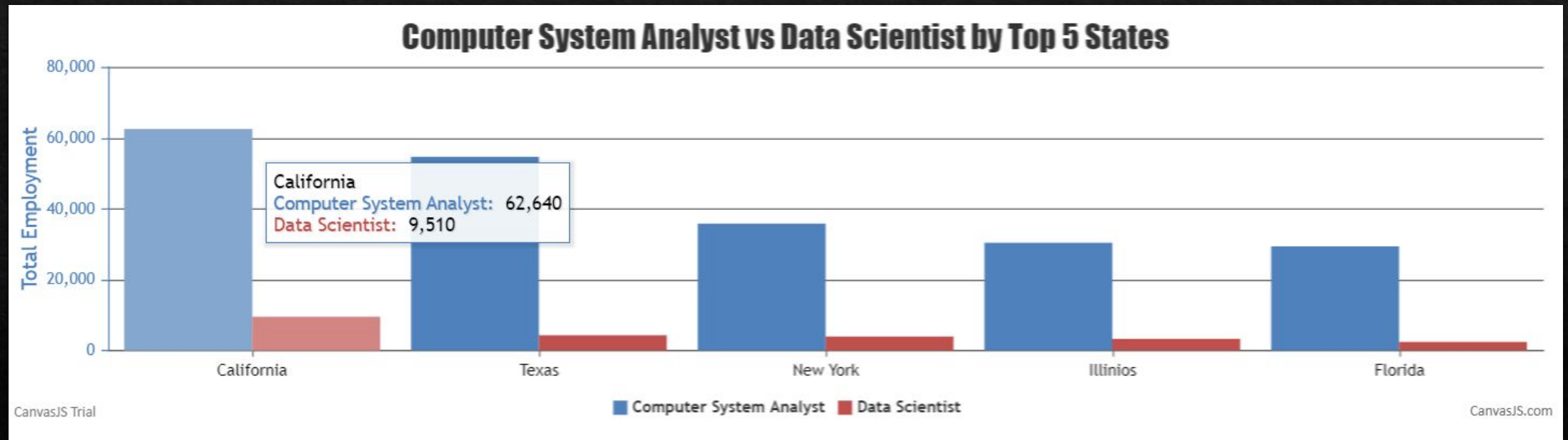
```

```
→ C Not Secure | 0.0.0.0:105/states/
features": [{"geometry": {"coordinates": [[[-87.359296, 35.00118], [-85.606675, 34.984749], [-85.431413, 34.124869], [-85.184951, 32.859696], [-85.069935, 32.580372], [-84.
85.004212, 32.322956], [-84.889196, 32.262709], [-85.058981, 32.13674], [-85.053504, 32.01077], [-85.141136, 31.840985], [-85.042551, 31.539753], [-85.113751, 31.27686], [-8
85.497137, 30.997536], [-87.600282, 30.997536], [-87.633143, 30.86609], [-87.408589, 30.674397], [-87.446927, 30.510088], [-87.37025, 30.427934], [-87.518128, 30.280057], [-8
87.90699, 30.411504], [-87.934375, 30.657966], [-88.011052, 30.685351], [-88.10416, 30.499135], [-88.137022, 30.318396], [-88.394438, 30.367688], [-88.471115, 31.895754], [-8
88.098683, 34.891641], [-88.202745, 34.995703], [-87.359296, 35.00118]]], "type": "Polygon", "id": "01", "properties": {
"density": 94.65, "name": "Alabama"}, "type": "Feature"
],
[
[-131.602021, 55.117982], [-131.569159, 55.28229], [-131.355558, 55.183705], [-131.36842, 55.01392], [-131.602021, 55.117982]], [
[-131.645836, 55.304197], [-131.749898, 55.128935], [-131.832052, 55.189182], [-131.832052, 55.424691], [
[-132.97673, 56.437924], [
[-132.735747, 56.459832], [-132.631685,
132.664547, 56.273616], [-132.878148, 56.240754], [-133.069841, 56.333862], [-132.97673, 56.437924], [
[
[-133.595627, 56.350293], [-133.162949, 56.31743], [-133.05341,
132.620732, 55.912138], [-132.472854, 55.780691], [-132.4619, 55.671152], [-132.357838, 55.649245], [-132.341408, 55.506844], [-132.166146, 55.364444], [-132.166146, 55.238
131.97993, 55.17828], [-131.958022, 54.789365], [-132.029222, 54.701734], [-132.308546, 54.718165], [-132.385223, 54.915335], [-132.483808, 54.898904], [-132.686455, 55.04
132.916486, 55.046781], [-132.889102, 54.898904], [-132.73027, 54.937242], [-132.626209, 54.882473], [-132.675501, 54.679826], [-132.867194, 54.701734], [-133.157472, 54.95
133.223195, 55.22752], [-133.453227, 55.216566], [-133.453227, 55.20628], [-133.277964, 55.331582], [-133.102702, 55.42469], [-133.17938, 55.588998], [-133.387503, 55.6218
133.497042, 56.0162], [-133.639442, 55.923092], [-133.694212, 56.070969], [-133.546335, 56.142169], [-133.666827, 56.311955], [-133.595627, 56.350293], [-133.738027, 55
133.545035, 55.490413], [-133.414888, 55.572568], [-133.283441, 55.304229], [-133.420365, 55.386352], [-133.633966, 55.430167], [-133.738027, 55.556137], [
[-133.907813,
133.456213, 57.029434], [-133.885905, 57.095157], [-133.343688, 57.002049], [-133.102702, 57.007526], [-132.932917, 56.82133], [-132.620732, 56.667956], [-132.653593, 56.55
133.042456, 56.520078], [-133.201287, 56.448878], [-133.420365, 56.492694], [-133.66135, 56.448878], [-133.710643, 56.684386], [-133.688735, 56.837741], [-133.869474, 56.84
133.907813, 56.930849], [
[
[-134.115936, 56.48174], [-134.25286, 56.558417], [-134.400737, 56.722725], [-134.417168, 56.848695], [-134.296675, 56.90894], [-134.170706, 56
134.143321, 56.952757], [-133.748981, 56.772017], [-133.710643, 56.596755], [-133.847566, 56.574848], [-133.935197, 56.377678], [-133.836612, 56.322908], [-133.957105, 56.4
134.132367, 55.999769], [-134.230952, 56.070969], [-134.291198, 56.350293], [-134.15936, 56.48174], [
[
[-134.632446, 56.28457], [-134.669107, 56.169554], [-134.806031, 56
135.178463, 56.67891], [-135.413971, 56.810356], [-135.331817, 56.914418], [-135.424925, 57.166357], [-135.687818, 57.369004], [-135.419448, 57.566174], [-135.298955, 57.48
134.849846, 57.407343], [-134.844369, 57.248511], [-134.632446, 56.728202], [-134.632446, 56.28457], [
[
[-134.712923, 58.223407], [-134.373353, 58.14673], [-134.176183, 58
134.187137, 58.081006], [-133.902336, 57.807159], [-134.095055, 57.850975], [-134.148798, 57.578671], [-133.935197, 57.615466], [-133.869474, 57.363527], [-134.083075, 57.2
134.499322, 57.029434], [-134.603384, 57.034911], [-134.6472, 57.226604], [-134.575999, 57.341619], [-134.608861, 57.511404], [-134.729354, 57.719528], [-134.707446, 57.825
134.91557, 58.212453], [-134.953908, 58.409623], [-134.712923, 58.223407], [
[
[-135.857603, 57.330665], [-135.857603, 57.330665], [-135.715203, 57.330665], [-135.567326, 57.149926], [-135.633049, 5
135.857603, 56.956721], [-135.824742, 57.193742], [-135.857603, 57.330665], [-135.729328, 58.206976], [-135.890465, 58.201499], [-135.780926, 58.28913], [-135.436215, 5
135.64948, 58.037191], [-135.59471, 57.987898], [-135.45231, 58.135776], [-135.107263, 58.086483], [-134.91557, 57.976944], [-135.025108, 57.779775], [-134.937477, 57.76334
135.085355, 57.62112], [-135.572802, 57.675113], [-135.556372, 57.456635], [-135.709726, 57.369004], [-135.890465, 57.407343], [-136.000004, 57.544266], [-136.208128, 57.4
136.569606, 57.16698], [-136.558652, 58.075529], [-136.421728, 58.130299], [-136.377913, 58.267222], [-136.279328, 58.206976], [
[
[-147.079854, 60.200582], [-147.501579,
147.53444, 59.850058], [-147.874011, 59.784359], [-147.80281, 59.937689], [-147.435855, 60.09652], [-147.205824, 60.271782], [-147.079854, 60.200582], [
[-147.561825, 60
147.616594, 60.370367], [-147.758995, 60.156767], [-147.951625, 60.227967], [-147.791856, 60.474229], [-147.561825, 60.578491], [
[
[-147.786379, 60.245291], [-147.682318,
147.162008, 60.157661], [-146.888161, 60.185044], [-146.510512, 60.185044], [-146.099482, 60.146706], [-145.858496, 60.168614], [-145.622988, 60.08646], [-145.195767, 69.993
144.461877, 60.02613], [-144.078491, 60.059075], [-143.914183, 60.130275], [-143.497935, 60.141229], [-143.503412, 60.091936], [-143.25695, 60.19321], [-142.747594, 70.04
142.079408, 69.856428], [-142.008207, 69.801659], [-141.712453, 69.790705], [-141.433129, 69.697597], [-141.378359, 69.63735], [-141.208574, 69.686643], [-141.00045, 69.648
140.53491, 60.22249], [-140.474664, 60.310121], [-139.987216, 60.184151], [-139.69639, 60.342983], [-139.08899, 60.359413], [-139.198537, 60.091043], [-139.045183, 59.997
138.623458, 59.76790
```


Leanne

sql screenshots

Utilized CanvasJS and UnderscoreJS



Sources

Data Source - <https://www.bls.gov/oes/current/oes151245.htm>

Visualization Source - <https://leafletjs.com/examples/choropleth/>

Project Link - <https://github.com/hannaholson/Project2.git>