

Lab 6 (2/24)

Submit your team number

Question *Submitted Feb 24th 2023 at 9:26:52 pm*

Please enter your team number.

50

1. US Map (Continuation from lecture slides)

To get started with this lab, you will create the map of the United States.



Use [lab6.html](#) file and refer to the lecture slides (25,26,27) for the starter code.

The [us-states.json](#) file should be downloaded. You will notice that the map is not visible entirely. This is because the map is not positioned and scaled properly.

This can be rectified by adding [translate and scale](#) to the projection function i.e `d3.geoAlbersUsa()`. You can change the color of the map by using the `fill` attribute.

Question *Submitted Feb 24th 2023 at 9:27:12 pm*

Paste your code to create the map of USA

```
var width = 700;  
  
var height = 600;
```

```
//-----USA -----
```

```
var svg1 = d3.select("#us")
```

```
.append("svg").attr("width", width).
```

```
attr("height", height);
```

```
//TO DO: Create projection and pathgeo variables for US
```

```
const projection1 = d3.geoAlbersUsa().scale(800).translate([width/2, height/2]) //chain translate  
and scale
```

```
const pathgeo1 = d3.geoPath().projection(projection1)
```

```
//TO DO: Load JSON file and create the map
```

```
const statesmap = d3.json('us-states.json')
```

```
statesmap.then(function(map){
```

```
svg1.selectAll('path').data(map.features)
```

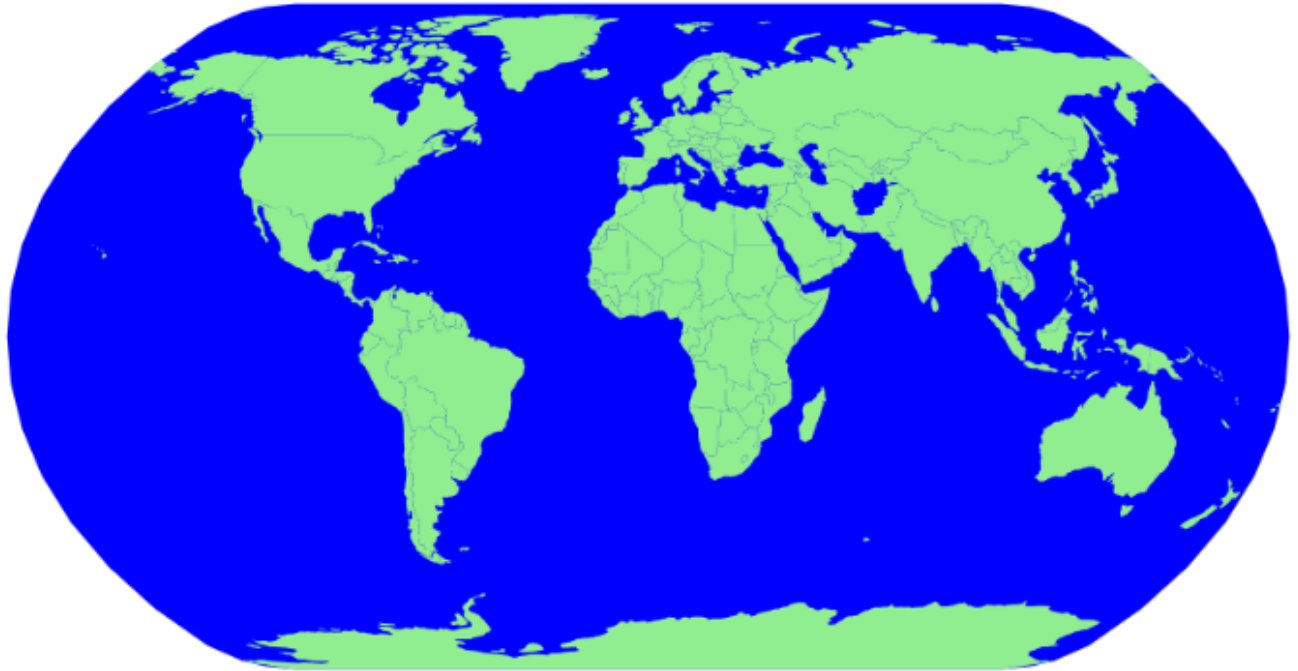
```
.enter()
```

```
.append('path')
```

```
.attr('d',pathgeo1)
```

```
})
```

2. Building a skeleton world map



1. Open [lab6.html](#)

To explore something even cooler, we included an exercise related to topoJSON as well. **topoJSON** is a more compact representation of geojson and it is great for topology.

➔What is TopoJSON?

<https://github.com/topojson/topojson>

The provided HTML has topojson loaded for you.

2. Create the following

i) define projection with geoNaturalEarth type (= use `d3.geoNaturalEarth1()`). You will have to use `translate` and `scale` to see the entire map.

ii) Attach projection to `pathgeo`

iii) Load the json file '<https://unpkg.com/world-atlas@1.1.4/world/110m.json>'.

You should open the file to get an idea of the structure.

The following steps are done inside `.then()`

iv) Convert from topojson to geojson using the code below. This is done so we can use the geojson functions like d3.geoPath etc.

```
const countries = topojson.feature(data, data.objects.countries)
```

➔What is feature? (Note: this is different from .features which is a property of geojson)

[reference1](#)

[reference2](#)

v) Create a map using the svg method chain for 'path'. The data would be countries.features.

vi) Set the colors of the sphere and map

vii) Play with [different projections](#)

Additional resources

- <https://medium.com/@mbostock/command-line-cartography-part-1-897aa8f8ca2c>
- <http://mjmdavis.com/showing/2017/05/16/how-to-read-maps.html> (interactive projections)
- <https://bl.ocks.org/mbostock/3711652> (list of projections)

Documentation

- <https://github.com/d3/d3-geo-projection> (scroll down for examples)

Question 1 *Submitted Feb 24th 2023 at 9:26:05 pm*

Paste your code for projection2 and pathgeo2

```
const projection2 = d3.geoAzimuthalEquidistant().scale(100).translate([width/2, height/2])

const pathgeo2 = d3.geoPath().projection(projection2)

var svg2 = d3.select("#world")

.append("svg").attr("width", width).

attr("height", height);

//base sphere for the world map

svg2.append('path')
```

```
.attr('class', 'sphere')
```

```
.attr('d', pathgeo2({ type: 'Sphere' })).attr('fill', 'blue')
```

Question 2 *Submitted Feb 24th 2023 at 9:26:03 pm*

Paste your code to create the world map

```
const worldmap = d3.json('world.json')

worldmap.then(function(map) {

  const countries = topojson.feature(map, map.objects.countries)

  svg2.selectAll('path').data(countries.features).enter().append('path')

  .attr('d', pathgeo2).attr('fill', 'green')

})
```

Question 3 *Submitted Feb 24th 2023 at 9:26:47 pm*

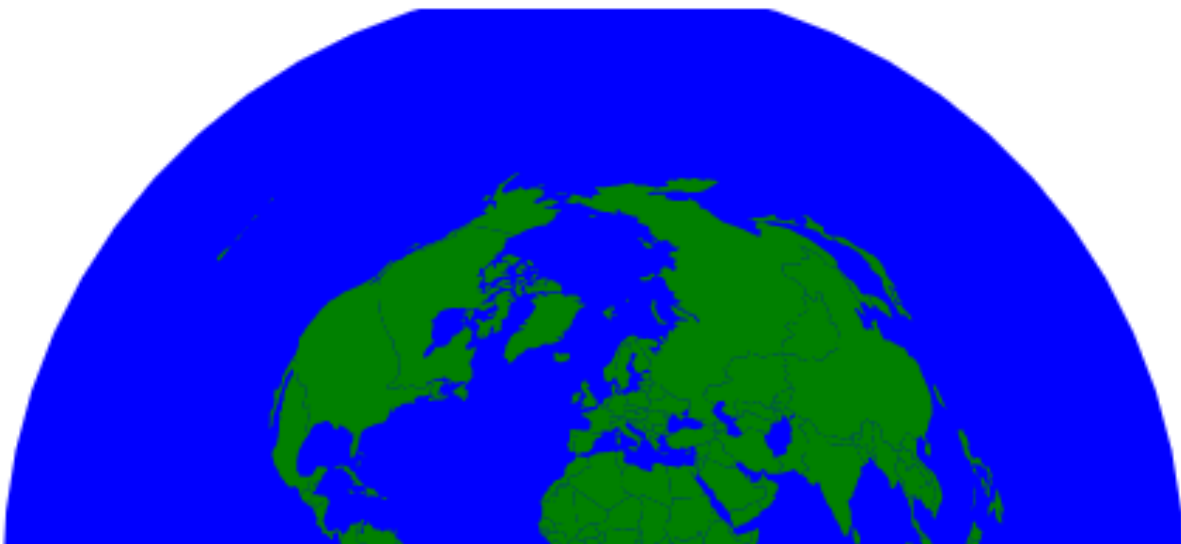
List any two other projections that you tried

Tried geoAzimuthalEqualArea and geoAzimuthalEquidistant

Upload Your Files

Question 1 *Submitted Feb 24th 2023 at 9:28:23 pm*

Upload the screenshot of your resulting webpage. You will need to click the "clip" button to upload a file into the Answer box.

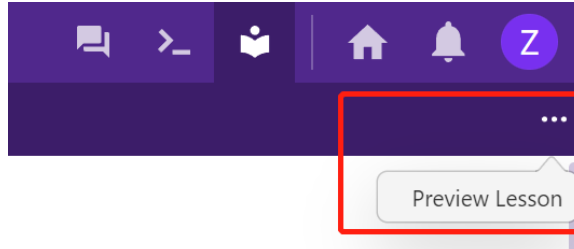




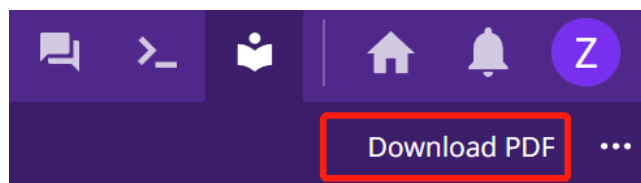
Question 2 Submitted Feb 24th 2023 at 9:28:32 pm

You need to download the PDF of lab 6 and upload it with other files to the Gradescope. Follow the instructions on how to download PDF file:

1. Click on the ellipsis button and the Preview Lesson.



2. After that, click on the Download PDF button.



☒ PDF downloaded!

☐ Haven't done yet!

Question 3 Submitted Feb 24th 2023 at 9:28:33 pm

Upload the following files to Gradescope. You need to make a group submission, adding all

present members in your team, so that the present members get the participation credit.

Files to upload:

- lab6.html
- PDF you downloaded as Q2

☒ Our team uploaded the the files on gradescope!

☐ Oops, our team did not upload the files on gradescope!

Feedback

Question

Was the activity today clear? If not, please share how the course can improve it. Your comments will help us design future lab content (and also future students).

No response