Lab 7 (5/24)

Submit your team number

Question *Submitted May 24th 2023 at 12:07:25 pm*

Please enter your team number.

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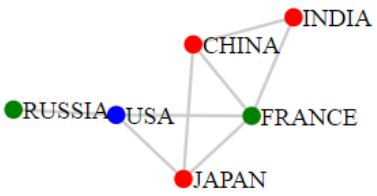
1. Create a basic node-link diagram

Create a basic node-link diagram using force objects to visualize the data given below. The skeleton code is available in lab7.html

The expected output (This is just for reference to show how the edges connect. You need to color the node corresponding to its continent (e.g. NA - blue, AS - red, EU - green). Also, you need to add a label to each node with its name. The positioning of nodes does not matter) :



In the lab7.html, we defined `data["link"]` for you which is a array stored all the `{source id: target id}` pairs according to `data["edges"]` . You can refer to the link.id documentation and the code example for how to create links by id.

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Copy and paste your corresponding codes that you added for force-directed graph.

```
    let link = svg
        .selectAll("line")
        .data(data.links)
        .enter()
        .append("line")
        .attr("stroke", "lightgray");
    //create nodes using "circle" elements
    let node = svg.selectAll("circle")
        .data(data.nodes)
        .enter()
        .append("circle")
        .style("fill", d => colorMap[d.continent])
        .attr("r", 5)
    //create label using "text" elements
    let label = svg.selectAll("text")
        .data(data.nodes)
        .enter()
```

```
        .append("text")
        .text(d => d.name)
    //create force graph
    let force = d3.forceSimulation(data.nodes)
        .force('charge', d3.forceManyBody())
        .force('center', d3.forceCenter(width/2, height/2))
        .force('collision', d3.forceCollide().radius(function(d) {
            return 5
        }))

        force.on("tick", function() {
        link.attr("x1", function(d) {
                const sourceNode = data.nodes.find(node => node.id === d.source);
                return sourceNode.x;
            })
            .attr("y1", function(d) {
                const sourceNode = data.nodes.find(node => node.id === d.source);
                return sourceNode.y;
            })
            .attr("x2", function(d) {
                const targetNode = data.nodes.find(node => node.id === d.target);
                return targetNode.x;
            })
            .attr("y2", function(d) {
                const targetNode = data.nodes.find(node => node.id === d.target);
                return targetNode.y;
            });

        node.attr("cx", function(d) {
            return d.x;
            })
            .attr("cy", function(d) {
            return d.y;
            });
        });
```

2. Zoom In and Zoom Out for Force-Directed Graph

You will notice that the force-directed graph is somewhat small. We will now learn how we can zoom in and zoom out of the graph.

The idea is to scale the nodes and links of the graph. You can refer here for understanding the code for zooming in and out. You can read more about d3.zoom() here.

Don't forget to call the zoom function for the svg.

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Copy paste the code for zooming here:

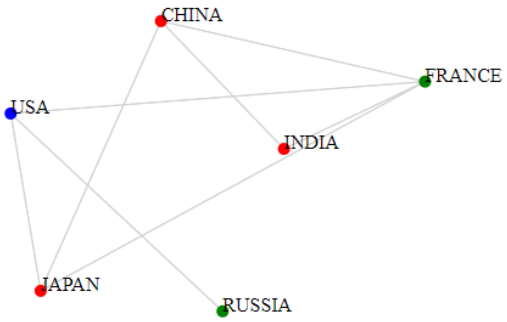
```
let zoom = d3.zoom()
    .scaleExtent([0.5, 10])
    .translateExtent([[-100, -100], [width + 100, height + 100]])
    .on("zoom", zoomed);
function zoomed(event) {
    node.attr("transform", event.transform);
    link.attr("transform", event.transform);
    label.attr("transform", event.transform);
}


svg.call(zoom)
```

Upload Your Files

Question 1 *Submitted May 24th 2023 at 12:54:32 pm*

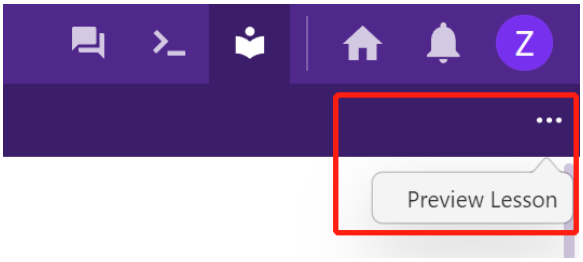
Upload the screenshot of your resulting webpage. You will need to click the "clip" button to upload a file into the Answer box.



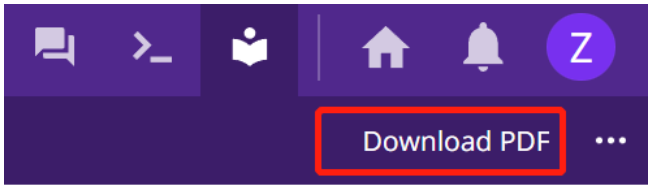
Question 2 *Submitted May 24th 2023 at 12:54:35 pm*

You need to download the PDF of lab 7 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.



- [x] PDF downloaded!
- [ ] Haven't done yet!

Question 3 *Submitted May 24th 2023 at 12:54:36 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:

- lab7.html
- PDF you downloaded as Q2

- [x] Our team uploaded the the files on gradescope!
- [ ] Oops, our team did not upload the files on gradescope!

Feedback

Question *Submitted May 24th 2023 at 12:54:39 pm*

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).

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