**CS 526: Data Interaction and Visual Analytics** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Spring 2022**

**Homework 2**

**Mini Portal, Force-Directed Layout, and D3.js Practices**

**Total** **Points**: 16

**Number** **of** **Tasks**: 3

**Release Date**: Wed, Jan 19, 2022 7:00 PM EST

**Deadline**: Part I: Fri, Jan 28, 2022 11:55 PM EST

Part II: Wed, Feb 2, 2022 4:00 PM EST

**Contact** **help**: Rajath Jayashankar (rajath.jay@rutgers.edu), Haoyang Zhang (hz333@scarletmail.rutgers.edu)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Homework Description**

This homework is about “*Plotly Practices*”. You have two tasks to complete before the due date. This is an individual assignment. Before you start, we highly suggest you reading the document [Plotly Python Open Source Graphing Library](https://plotly.com/python/).

**Grading**  
Part I: Task 1: 3 points

Task 2: 4 points

Part II: Task 3: 9 points

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Tasks:***

1. **Mini Portal Practice**: Follow the documents in [Project Template for Rutgers CS526 repository](https://github.com/JNKKKK/Rutgers-CS526-Project-Template), and create a student list page containing your own information.

Please submit a screenshot of the resulting portal webpage named “HW2\_<YourNetID>\_miniPortal.png”.

1. **Force Directed Layout Practice**: In this task you will visualize [asoiaf\_edges\_decomposition.csv](https://rutgersconnect-my.sharepoint.com/:f:/g/personal/abelloj_cs_rutgers_edu/EsgPxtmQ7KZNqCdvMtuzReMBWec4QxvRiKAjSchmYOisUg?e=PoUMyE), and [asoiaf\_nodes\_prop.csv](https://rutgersconnect-my.sharepoint.com/:f:/g/personal/abelloj_cs_rutgers_edu/EsgPxtmQ7KZNqCdvMtuzReMBWec4QxvRiKAjSchmYOisUg?e=PoUMyE) with [3D Force-Directed Graph](https://github.com/vasturiano/3d-force-graph).
   1. Create a graph whose vertex set is [asoiaf\_nodes\_prop.csv](https://rutgersconnect-my.sharepoint.com/:f:/g/personal/abelloj_cs_rutgers_edu/EsgPxtmQ7KZNqCdvMtuzReMBWec4QxvRiKAjSchmYOisUg?e=PoUMyE), and edge set is [asoiaf\_edges\_decomposition.csv](https://rutgersconnect-my.sharepoint.com/:f:/g/personal/abelloj_cs_rutgers_edu/EsgPxtmQ7KZNqCdvMtuzReMBWec4QxvRiKAjSchmYOisUg?e=PoUMyE). Use it as the input of [3D Force-Directed Graph](https://github.com/vasturiano/3d-force-graph).
   2. Represent value of each edge by its thickness.
   3. Color nodes according their peel value.
   4. Encode nodes’ diversity by their size.
   5. When hovering on a node, show a tooltip contains its name, degree, peel, pagerank, diversity and betweenness.

Please submit your script named “HW2\_<YourNetID>\_layout.<js/html>”, and a screenshot of the resulting graph layout named “HW2\_<YourNetID>\_layout.png”.

1. **D3.js Practices**: In this task you will use D3.js to draw all the three plots for [asoiaf\_nodes\_prop.csv](https://rutgersconnect-my.sharepoint.com/:f:/g/personal/abelloj_cs_rutgers_edu/ErnPSn6lGflMnxiuJndJbt0BkS_yj8ZDoF0N7piKGvNxYw?e=ZaTa8W) you created in [Homework 1](https://rutgersconnect-my.sharepoint.com/:f:/g/personal/abelloj_cs_rutgers_edu/ErnPSn6lGflMnxiuJndJbt0BkS_yj8ZDoF0N7piKGvNxYw?e=ZaTa8W) with Plotly (The scatter plot, tree map, and Barycentric plot with all specifications).

Please submit your scripts named “HW2\_<YourNetID>\_<scatter/treemap/barycentric>.<js/html>”, and a screenshot of the resulting plots named “HW2\_<YourNetID>\_<scatter/treemap/barycentric>.png”.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

GOOD LUCK!!!