

CSCI 552 (Spring 2021)

Homework #3

Handout: Thursday, April 1, 2021

Due: 11:59 pm, Thursday, April 15, 2021

Total points: 35

All assignments will be submitted through Canvas. Documents will need to be in either Word or PDF format. Images need to be in jpeg format.

1. Since tree is a special case of graph, many tree visualization methods are extended to visualize graphs. Describe two such examples among the known tree and graph visualization methods. Explain what additional features are needed when extending to graphs.
2. Arc Diagrams can be used to visualize graphs. In an Arc Diagram, graph nodes are placed on a straight line. This simplifies the graph layout problem but does not eliminate the need for placing the nodes appropriately on the straight line. Describe an algorithm to place graph nodes in an Arc Diagram such that nodes that are close in terms of graph distance are placed together on the straight line.
3. Word Cloud or Wordle uses text size to represent the frequency of appearance of a word in a document. The colors of the displayed words have not been effectively utilized for any purpose. Design an approach of using text color to improve the Wordle technique in a way that helps summarizing or understanding the text file.