For this assignment, you will analyze a social network of characters in Games of Thrones using Gephi.

Two files “got\_edges.csv” and “god\_nodes.csv” contain network data for character relationships among the characters in the HBO series *Games of Thrones*. This data was originally compiled by Beveridge and Shan ( <https://bit.ly/2tJLEcB> )

Each node is a character, and there is an edge between two characters if they appear in the same paragraph. Connection does not necessarily mean that they are friends. They could be friends or enemies. It simply means they are associated. There are 107 nodes including ladies, lords, guards, and mercenaries, councilmen, consorts, villagers, and savages. The nodes are connected by 353 weighted-edge, in which higher weights correspond to stronger relationships between those characters.

Open two files in Gephi. 1) File -> Import Spreadsheet, 2) Import the node file first, 3) repeat the process for the edge file, 4) When you import the edge file, choose “merge into existing workspace”. In this process make sure you treat the network as “undirected” because the co-appearance network is unidirectional.

Question 1. Report the following statistics.

1. Average node degree
2. Network diameter
3. Network density
4. Average path length
5. The number of connected components

Question 2. Color nodes by degree. Choose the “node color” tab  from panel at the upper left then select the “nodes” ->“ranking” -> “degree” from the drop-down menu. Press the “apply” button. Attach a visual.

Question 3. Make the size of nodes proportional to degree. Choose the “node size” tab  from the panel at the upper left, then select “nodes” -> “ranking” -> “degree” from the drop-down menu. You can set the range of node sizes here (min size ~ max size). Press the “apply” button. Attach a visual.

Question 4. Visualize the graph displaying nodes with a degree greater than 10. Go to the Filter panel. Choose “Attributes” -> “Range” -> “Indegree”. Move the sliders to select the range of degrees to be filtered. Attach a visual.