

Homework III:

Using the dataset you chose for your course work and SNAP or any other SNA software of your preference:

1. Make a first analysis of your dataset,
 - a. Report the general characteristics of your dataset
 - b. Calculate the most central nodes (with at least three different methods)
If possible check who or what this node is and report it. If this is not possible explain why
 - c. The average path length, diameter and effective diameter
 - d. The innermost k-shell (size and value)
 - e. The clustering coefficient
2. Plot degree distribution (plus Power-law fit or equivalent, use <https://aaronclauset.github.io/powerlaws/> similar to the example used in class and the code from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0085777>)
3. Compare the network with similar networks in size generated with
 - a. Preferential Attachment
 - b. Configuration model
 - c. Node Rewiring
 - d. Erdos-Renyi random graph
4. Interpret the results
Explain what the results tell you about your dataset.
In case a specific analysis does not make sense with your dataset, propose and execute an alternative.
5. Update/refine the proposal about what you would like to do with the dataset.