TP1

I strongly encourage you to try crawling some complex network that you are willing to understand the behavior. However, if you are not used to implement crawlers, data from Stanford Large Network Dataset Collection (https://snap.stanford.edu/data/) can be used.

1. From the set of data available from Snap website or the data that you collected by yourself, choose two networks from different types (for instance, ego-Facebook and co-AstroPh). The idea is to compare two different complex systems by means of the main properties we discussed. Calculate (and plot) the following properties:
   a) Degree distribution;
   b) Clustering coefficient of each node and its distribution;
   c) Number of components and their size;
   d) Betweenness distribution;
   e) Closeness distribution;
   f) Diameter.

- Provide a comparison between the two networks you chose in terms of the calculated properties. Do you have any hint about why they are similar or dissimilar?
- For each network, rank the top-20 nodes considering closeness, betweenness and degree. Using Pearson correlation, calculate the correlation coefficient between each pair of measure. What you can say about the results?