MiniProject 2 - ItDS

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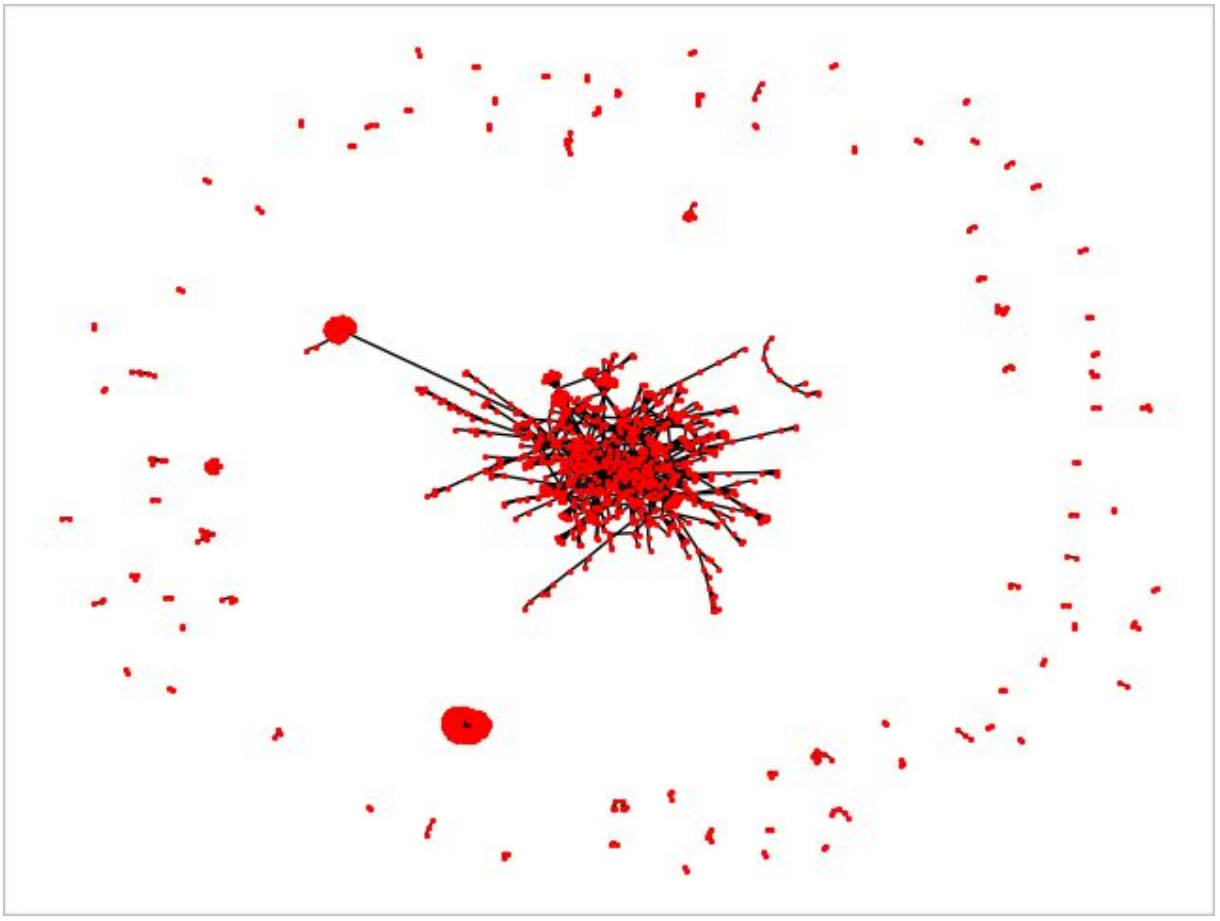
I download the "CE-LC" data from https://www.inetbio.org/wormnet/downloadnetwork.php and then answered the questions below. The python code and data is available in separate files, just showing plots and prints below.

1. Build the corresponding network (G) with Networkx



2. What are number of nodes, number of edges and the average degree of the network?

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2.1 Number of nodes: 1387
2.2 Number of edges: 1648
2.3 Average degree of nodes: 2.3763518385
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3. What is the density of the network.

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3. Network density: 0.00171453956602
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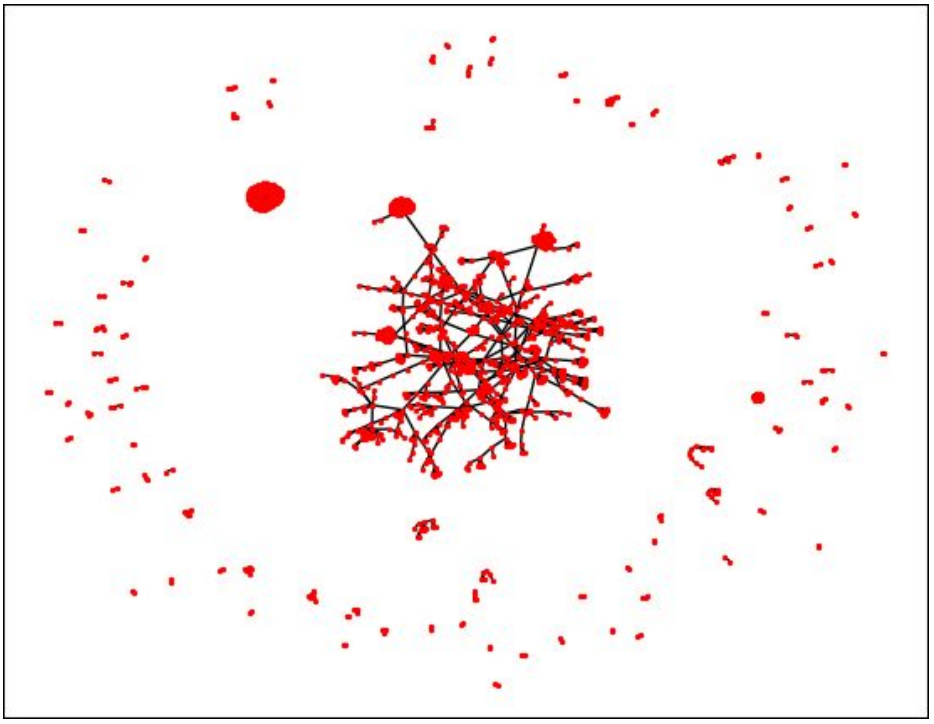
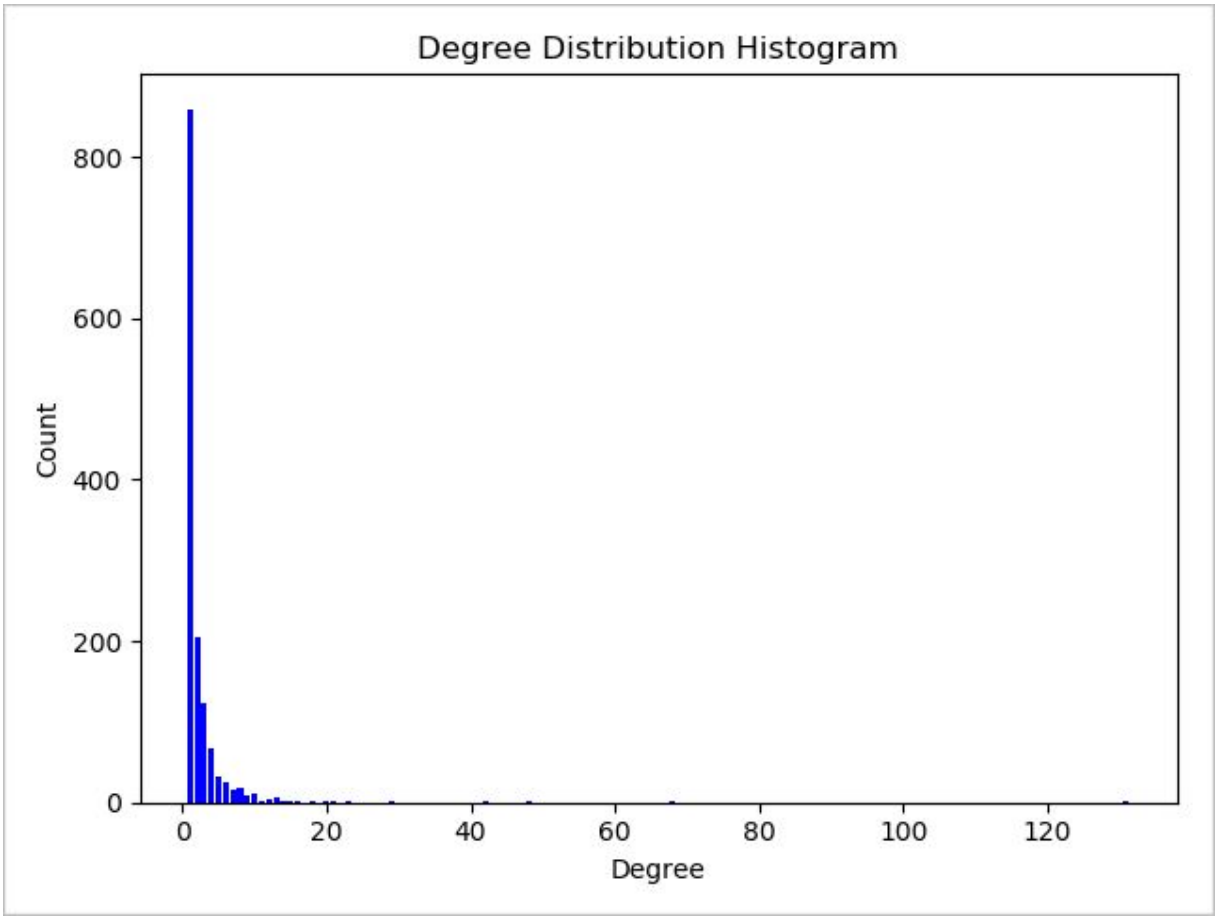
4. Find the minimum spanning tree in G and draw it.

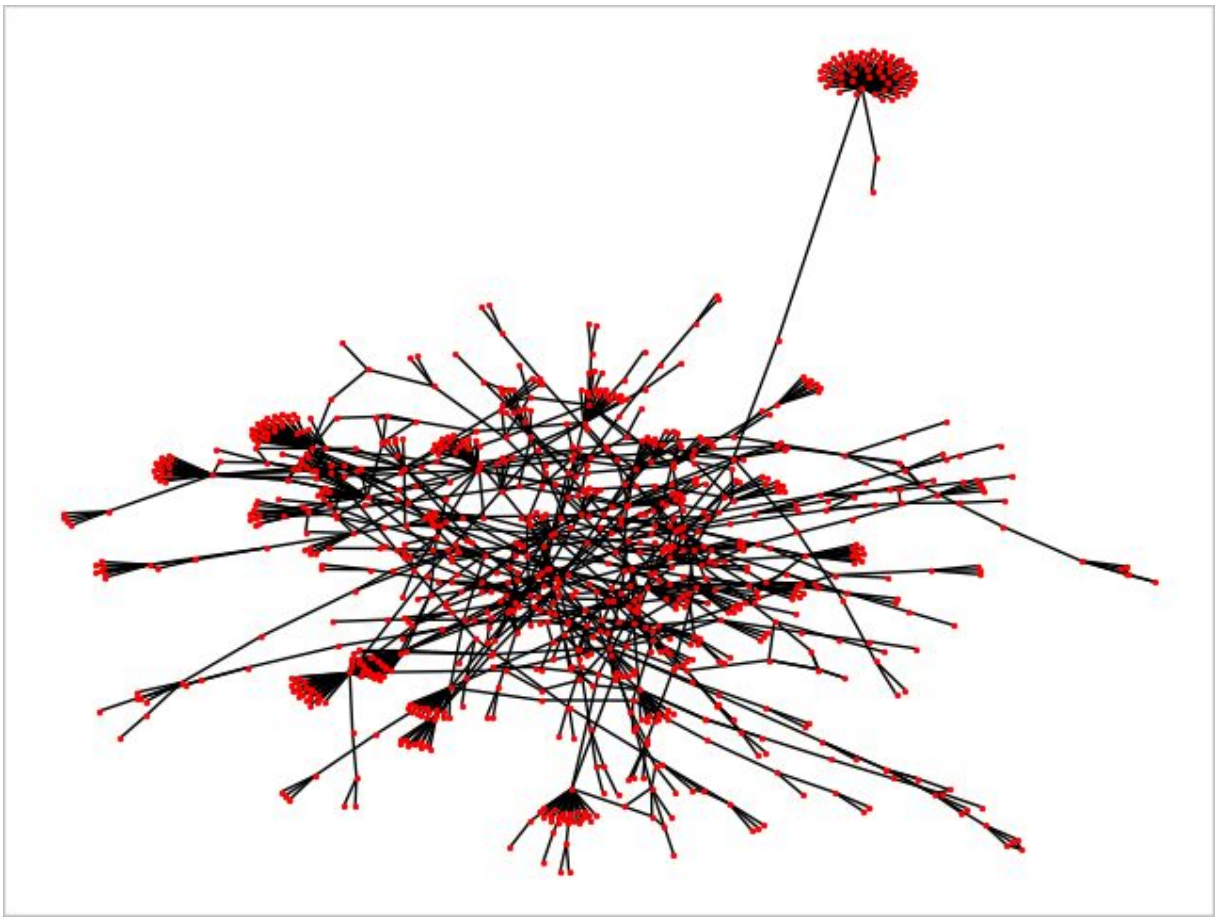


5. Draw the degree distribution histogram.



6. Find the largest connected component of the network (LC) and answer the following questions about LC (or implement the tasks):

1. Draw LC.



2. What is its diameter?

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6.2. LC graph diameter: 22
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3. What is the center of LC?

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6.3. Center of LC graph: ['C54D1.6', 'C37A5.9']
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4. What is the number of clique communities with 3 nodes?

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6.4. Number of clique communities with 3 nodes in LC: 4
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5. (Optional, for 3 extra points) What is the name of the protein that changing its status has potentially the biggest effect on the rest of the network?

Nothing