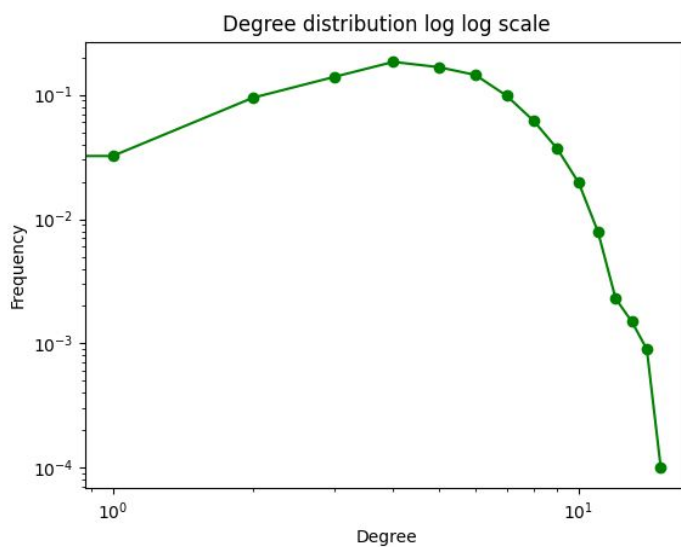
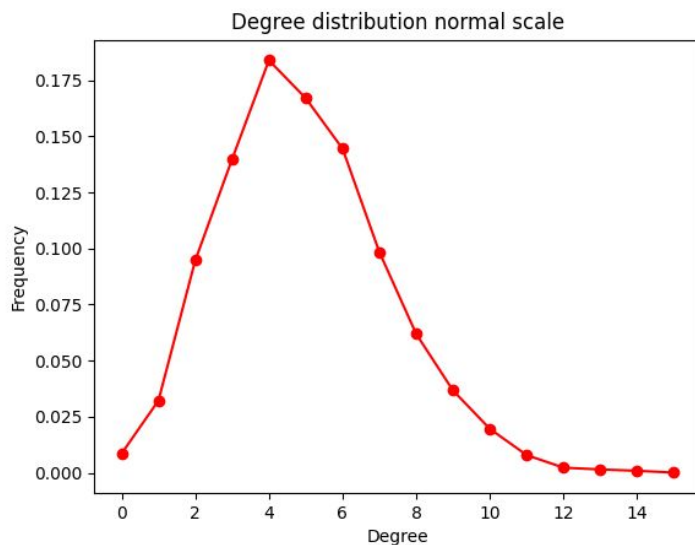


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Question 1:

Construct an undirected network with  $N = 10000$  nodes, and add links  $(i, j)$  for  $i < j$  to the network with probability  $p = 0.0005$ .



The number of connected components  $\approx 88$ , using `nwx.number_connected_components` to pick the number of components.

The size of the giant component  $\approx 9912$ , using `nwx.connected_components` to pick all components, and sorted inverting this array of components, and using `subgraph` to get the giant component.

The average distance in the giant component  $\approx 5.928$ , with the giant component, using `nwx.average_shortest_path_length` to get the average distance.