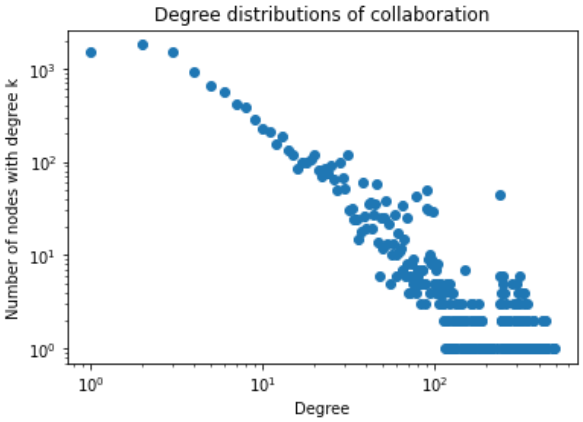
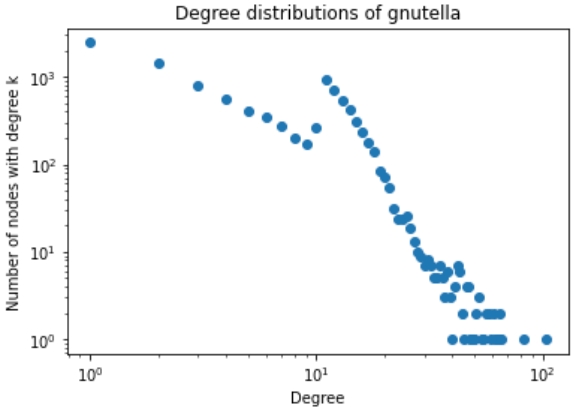
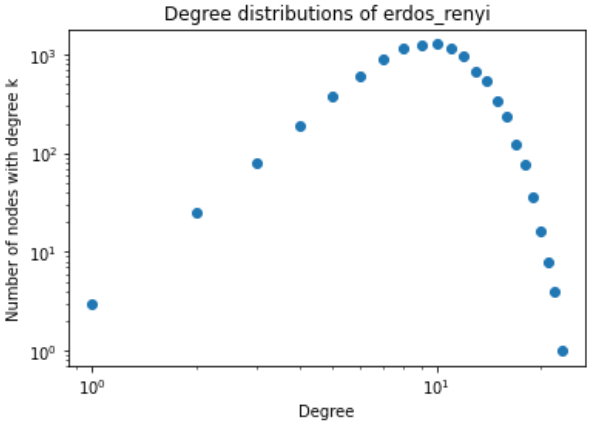
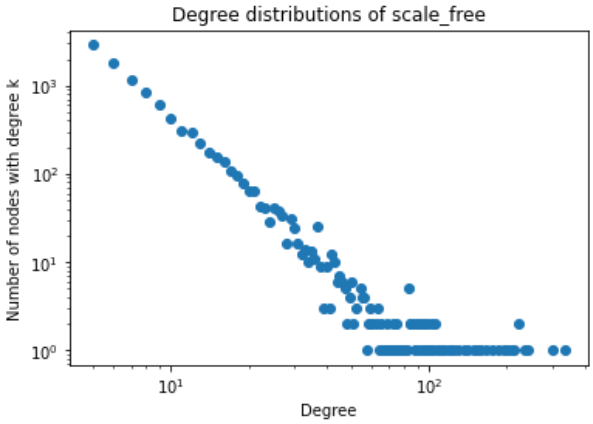
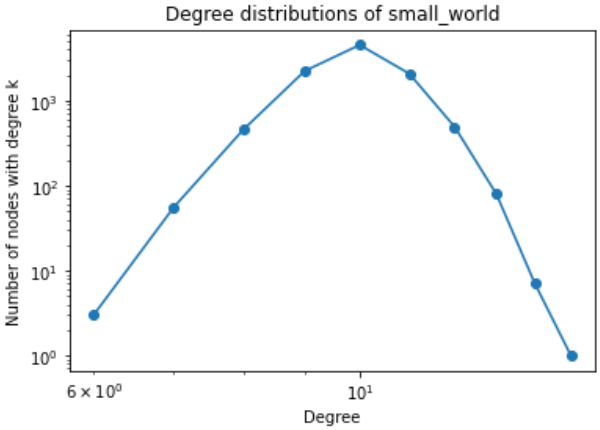
Degree Distributions

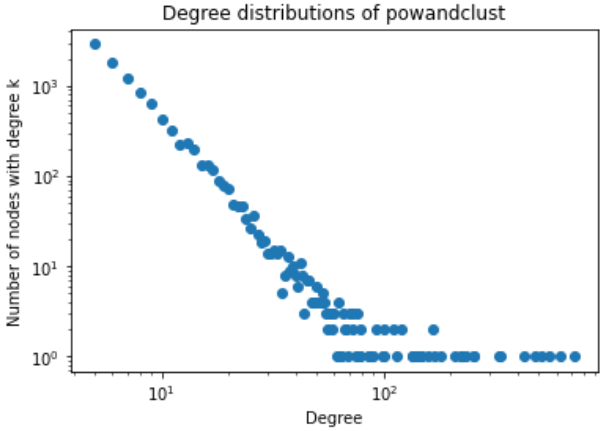




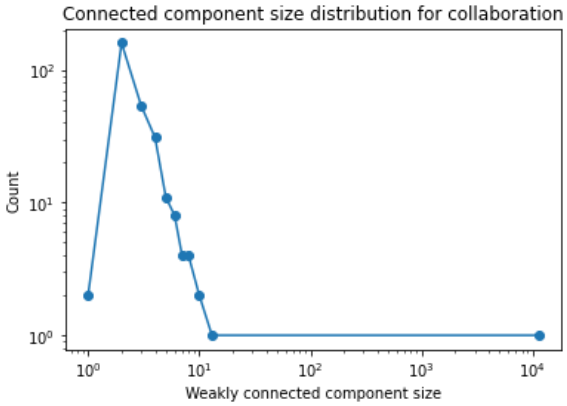


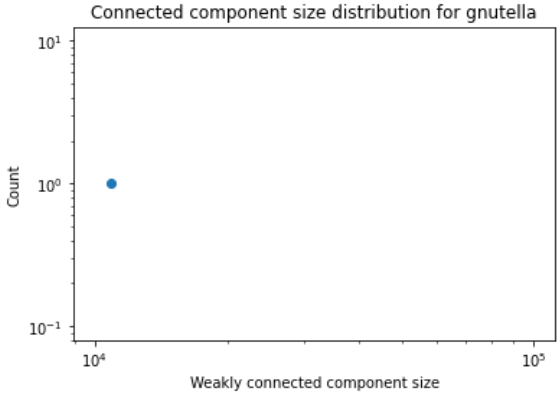


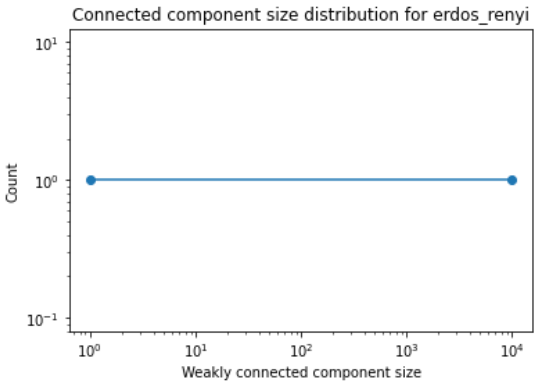


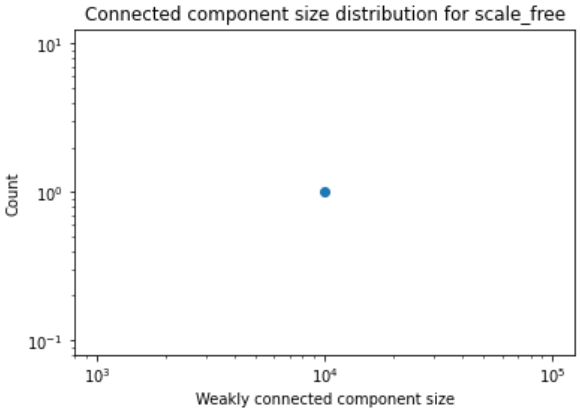


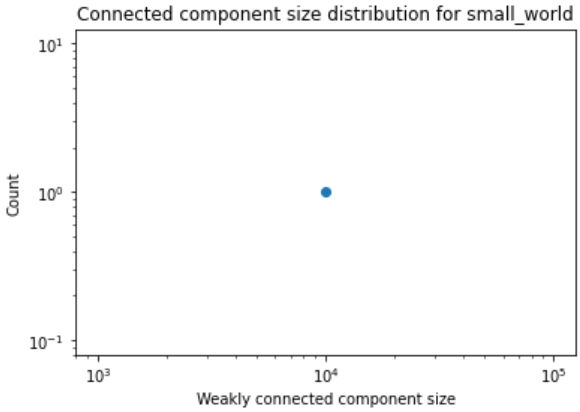
Connected Component distributions

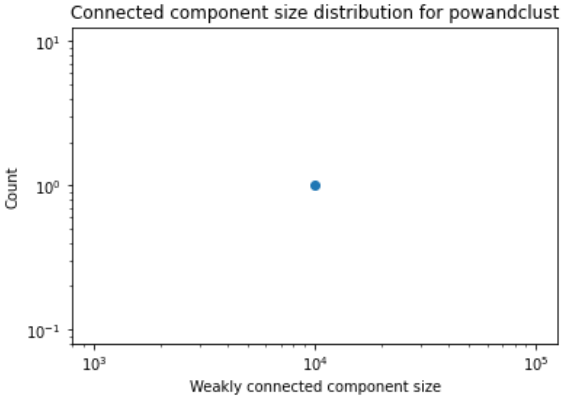




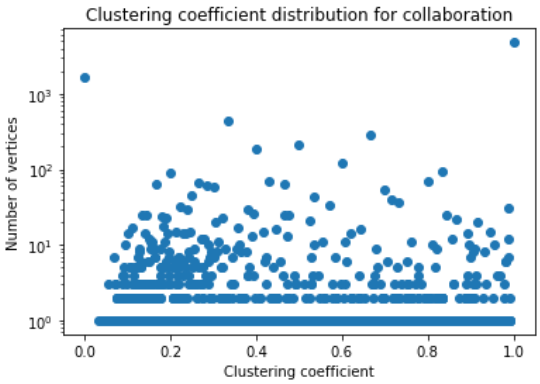


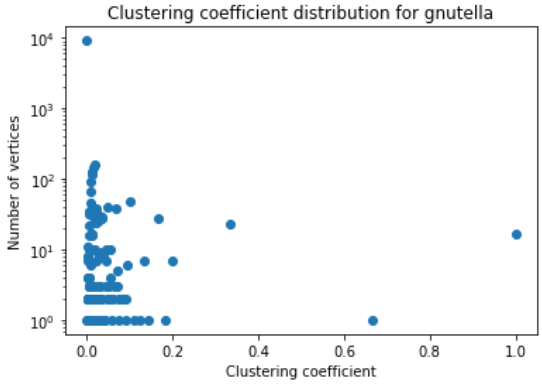


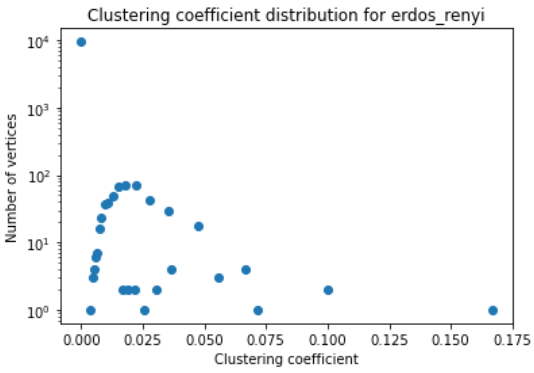


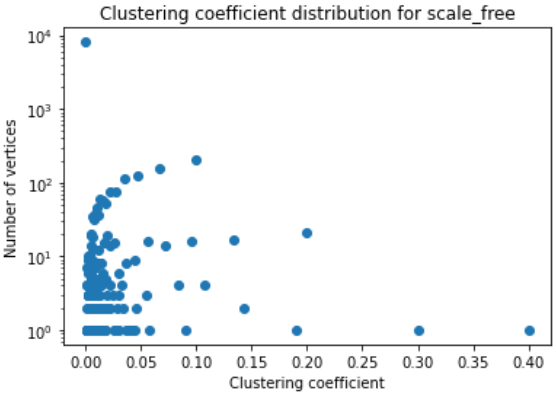


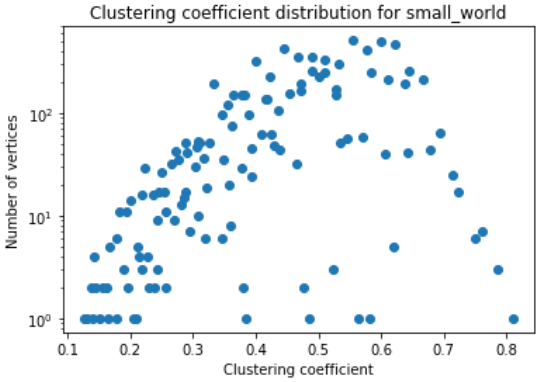
Clustering Coefficient distributions

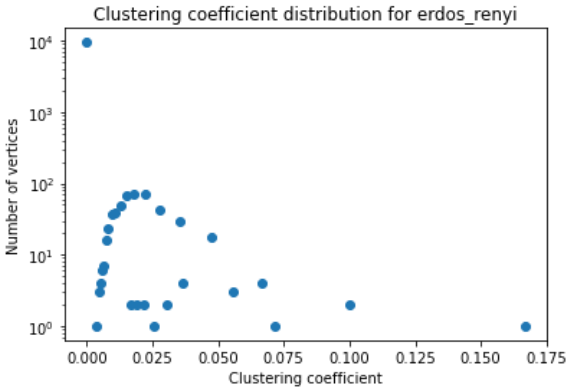




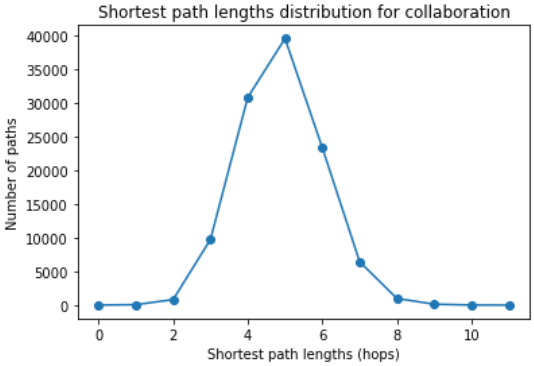


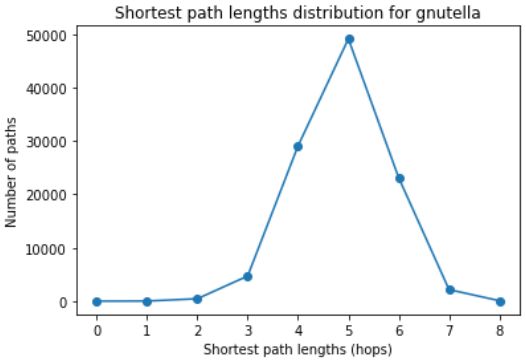


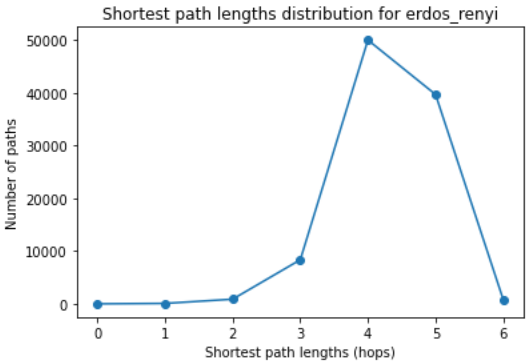


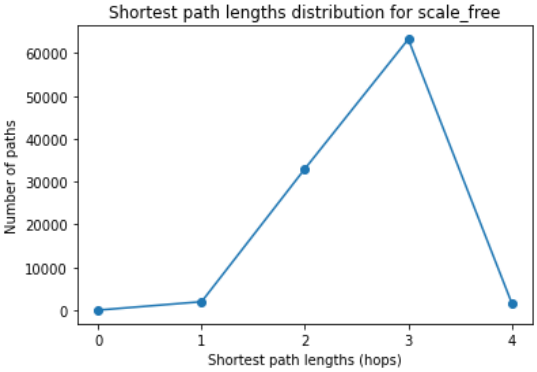


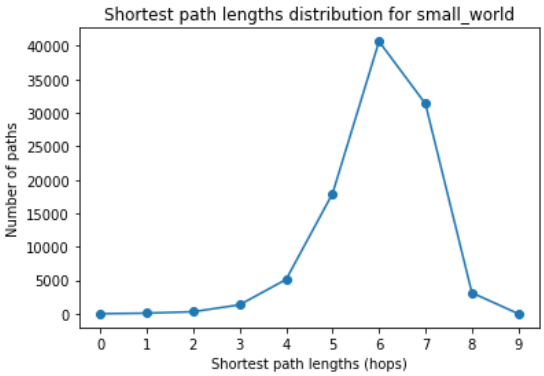
Shortest path lengths distributions

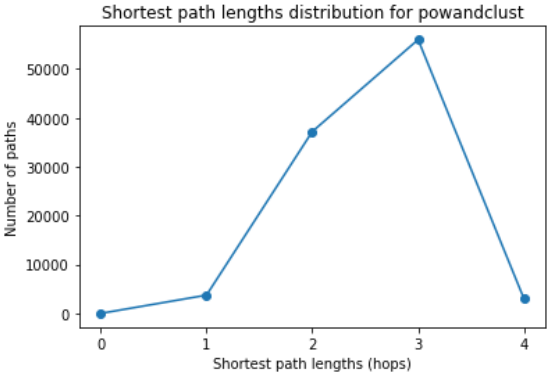












2.

Graph	n	m	Avg. degree	Size of largest comp	Avg. local clustering coeff	Avg. path lengths	Diameter
collaboration	12008	118521	19.74033	n=11204,m=117649	0.61148	4.88182	11
gnutella	10876	39994	7.35454	n=10876,m=39994	0.00621	4.88638	8
erdos-renyi	10000	50000	10	n=9999,m=50000	0.00100	4.30940	6
scale-free	10000	49975	9.995	n=10000,m=49975	0.00673	2.64715	4
small-world	10000	50000	10	n=10000,m=50000	0.48889	6.03641	9
powandclust	10000	49962	9.9924	n=10000,m=49962	0.29811	2.58307	4

3. For the first real world graph, the closest random network to it would be the small world as it is comparatively the closest in terms of the parameters average local clustering coefficient, average shortest path, and diameter. But if we look at the graphs, scale-free appears closer in resemblance. So, which graph is the best one also depends on the use case of the graphs. Based on that the ideal one can be possibly chosen.
For the second real world graph, the closest random network to it would be the scale-free as it is comparatively the closest when compared with the rest of the graphs. The average shortest path and diameter, although different, can be improved by generating it a few times and selecting a better one.

4. Time taken to compute the following values:

Graph	Avg. degree	Size of largest comp	Avg. local clustering coeff	Avg. path lengths	Diameter
collaboration	0.00806	0.15559	2.81342	1.26528	1.26528
gnutella	0.00516	0.07168	0.17165	0.65686	0.65686
erdos-renyi	0.00192	0.05321	0.16112	0.40952	0.40952

scale-free	0.00147	0.05444	0.24736	0.37697	0.37697
small-world	0.00301	0.05554	0.12140	0.38869	0.38869
powandclust	0.00189	0.05591	0.29538	0.37735	0.37735