Prexis: Gephi
Min Chen

Here are some basic statistics and the corresponding pictures for the two graphs: Les Miserables graph and the random graph generated.

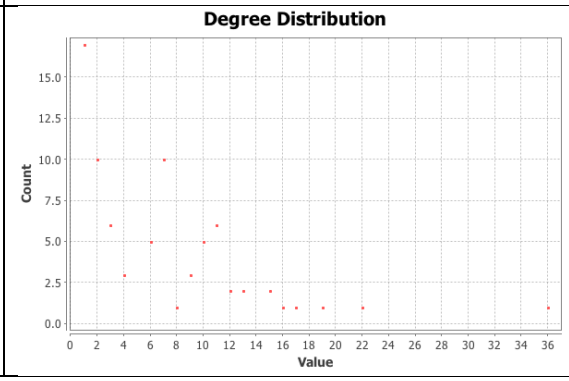
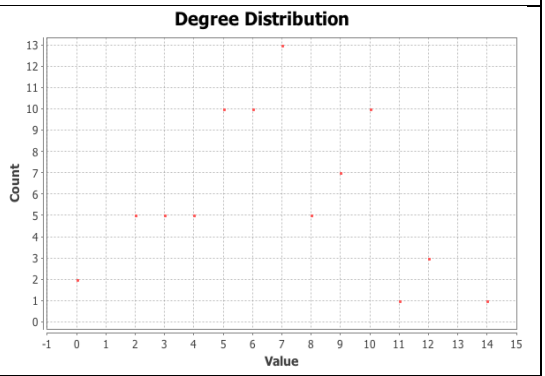
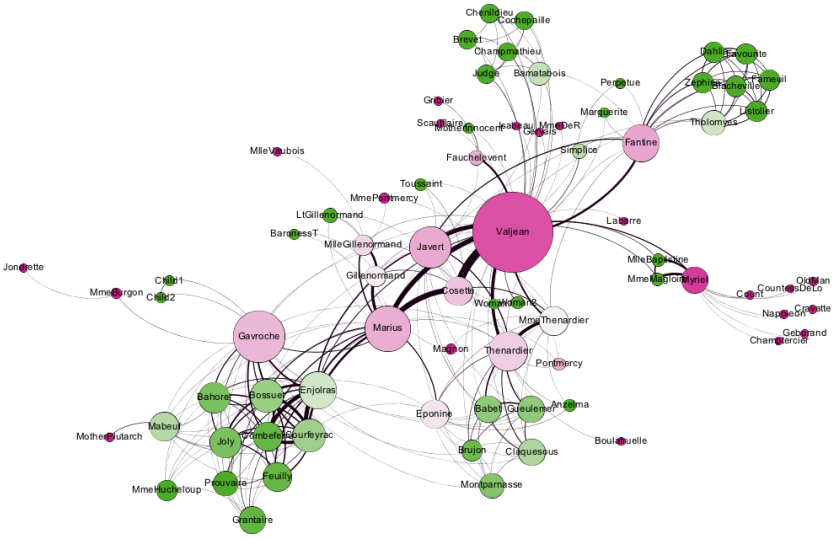
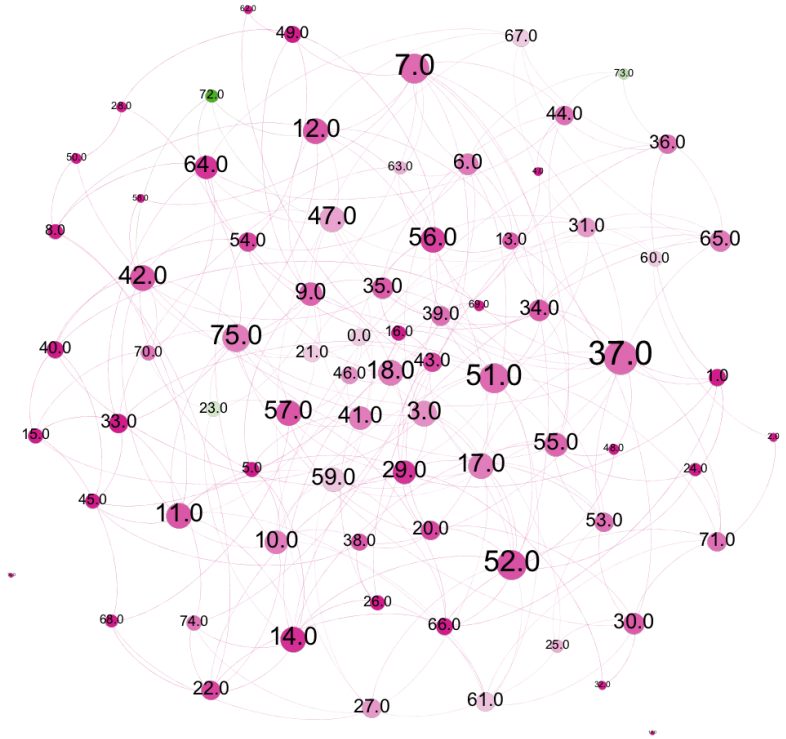
Graph	Les Miserables	Random
Nodes #	77	77
Edges #	254	255
Average Degree	6.597	6.623
Average Clustering Coefficient	0.736	0.083
Average Path Length	2.641	2.451
Degree Distribution		

Figure of Les Miserables	
Figure of the random graph	

1. The average degree of the two graph is similar, however, the Les Miserables graph shows a downward sloping in the degree-count graph above while the random graph shows a bell shape in the degree-count graph. The latter can be explained by the knowledge we learnt this week that the degree distribution follows a binomial or passion distribution. The Les Miserables graph is not a random graph and having a lot of nodes that with smaller degree. However, when I generate the random graph, I set the number of nodes to be 77 and probability of connecting two nodes to be in line with the number of edges. Therefore, the average degree of the graph is similar by design.

2. The random graph is less clustered than the real one. The average clustering factor is 0.083 and 0.736 respectively. This tells me that the real graph may be generated by the method of rewiring some of the edges randomly from a Regular graph as in Watts_Strogatz.

3. The real graph exhibits the small-world property because the average path length is only 2.641, and the diameter is only 5 according to the statistics provided by Gephi.