Information Retrieval

Assignment 5

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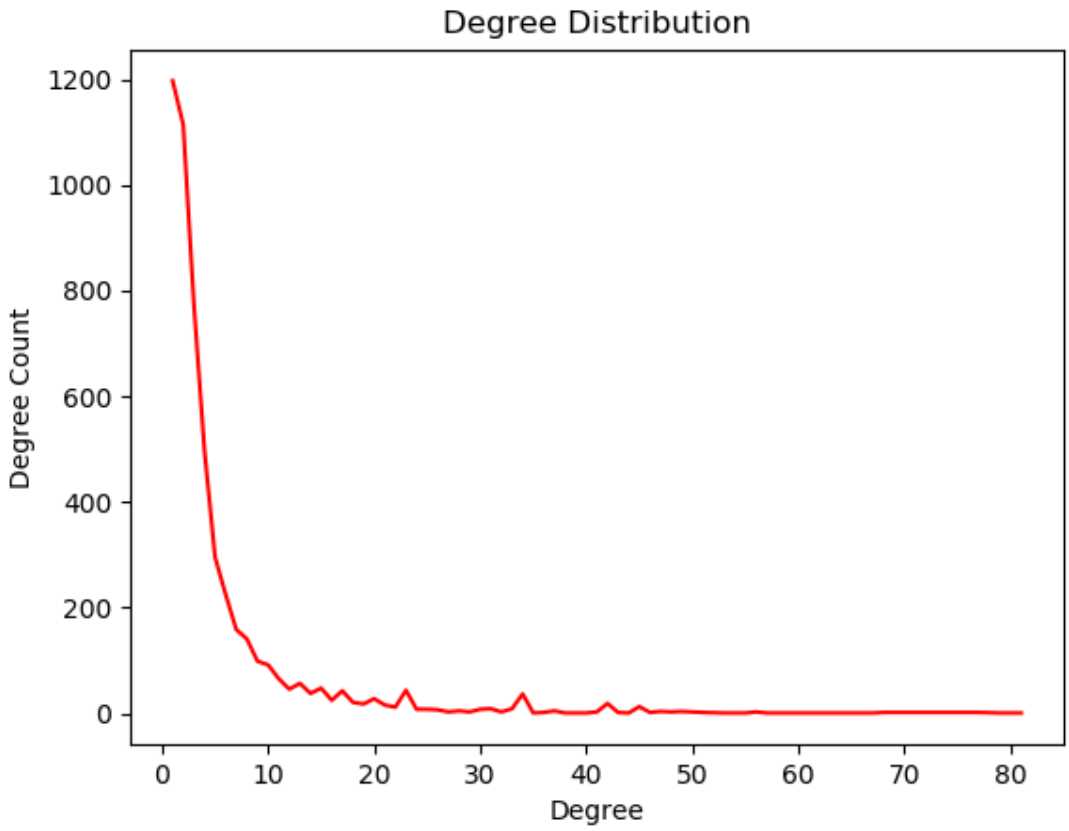
Assumptions

- In case, for calculation of Clustering Coefficient, the degree of the neighbor node comes out to be 1 or 0, the coefficient has been assumed to be 0.

Methodology

- Node data was mapped to 0 base node indexing.
- Adjacency Matrix was created for given Dataset.
- The Dataset contains 5242 nodes and 14496 edges.
- For closeness, Shortest Path was calculated using BFS.

Observations and Results



- From the given graph, it can be inferred that the given data results are mostly a sparse Graph, i.e. most the nodes are not connected to a large number of nodes.
- A large number of nodes are either not connected to the Graph or re connected to Small number of nodes in degree [1,5].
- The Average Cluster Coefficient for the graph is approximately 0.53.
- Average Closeness for the Graph is approximately 1942.8. The number is coming out to be high as there are large number of nodes that have low degree.
- Average Betweenness for the Graph is approximately 0.006.

NOTE

- Closeness of each node can be found at “closeness.json”.
- Betweenness of each node can be found in “betweenness.json”.
- Cluster Coefficient for each node can be found at “clustering_c.json”.