Social Network Analysis
Spring 2019
MS(DS)
Assignment 3
Submission Date: March 31, 2019

In this Assignment, we explore the community structure of undirected graphs. In this problem, you are required to implement the Girwan-Newman Algorithm studied in class to identify communities in Zakary Karate club graph (file attached). The flow of the algorithm should be as follows:
For each iteration
Compute the edge betweeness of all the edges in the graph
Remove the edge with highest betweenness
Compute the modularity of the resultant graph
Repeat until no more edges exists in the graph

Record the modularity of the graph after each edge removal and in the end plot a graph of modularity for each iteration.

You must also output the community structure for which the graph has highest modularity.

You are not allowed to use SNAP function CommunityGirvanNewman. However you can use SNAP function to compute the edge betweenness.

Important Note:
Submit your code files at google classroom as one single file. If you have more than one files compress them and submit them as single file. The name of file must your complete roll number. Your code must be properly commented.
This is an individual assignment and the code submitted must be your own contribution. Any sort of plagiarism will be dealt seriously and may lead to severe consequences including negative marking.