CME4422

2019 Spring

Homework Assignment

**Deadline**: 10 May 2019

* Please read this document carefully until the end.
* Find a fictional book, movie or TV series with at least 10 people. Each person will represent a node and their relationships will represent edges. You can download a classical book from [www.gutenberg.org](http://www.gutenberg.org) in pdf format if you don’t want to use a printed book.
* Use a simple graph(undirected-unweighted).
* You can use one of the following programming languages and any IDE you like: Java, C,C++,C#,Python. If you want to use a PL outside this list you should ASK me first.
* You have to define the data structures for representing a graph with its nodes and edges. Nodes and edges should support labels, such as character name.
* You CANNOT use any built-in or 3rd party functions, packages, libraries, etc for trees. Of course you can use math, IO and other utility libraries. If you are in doubt as to whether you are allowed to use a particular library please ASK me before it’s too late.
* Use the centrality measures you have learned in class to find out the most important character in the book using the data structures you have created. You may get different rankings based on the measure used. You should compare the different results in your report.
* Now, compare the results found above with the content of the book/movie in your report. Are the importance rankings consistent or not with the content of the book? Explain in detail.
* Find 5 scientific articles or papers on this subject, and include in your report:
  + How these articles relate to the work you have done
  + Any interesting items you learned from them
* Form groups of 3 students at your will and inform me of your group no later than 15 April 2019. Please ask me about permission for a 1 or 4 person group, which will be allowed ONLY IF absolutely necessary.
* You should upload your final report to google classroom by the deadline, make a short (10 min) presentation in class after the deadline, schedule will be announced later. You should also demonstrate how your code works during the presentation.
* Follow google classroom for any questions and answers about the assignment.