CS 519: Scientific Visualization Fall 2017
In-class Worksheet

Network Visualization Part 2

1. Network Metrics

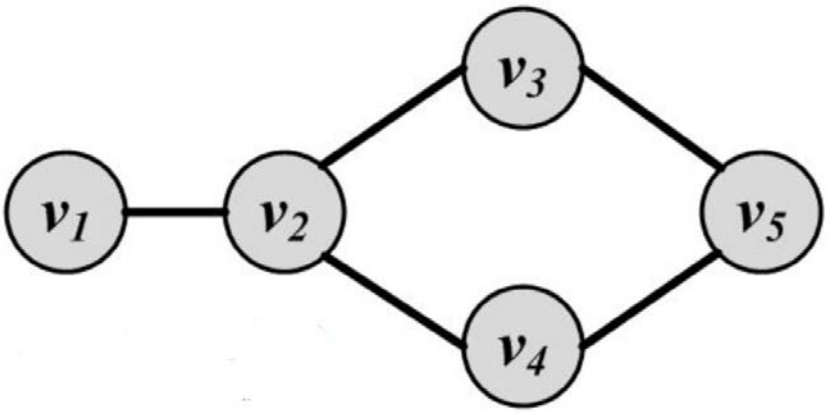
a. Betweeness Centrality can be calculated for nodes as well as edges.

The betweenness centrality of a node v is given by the expression:

$$g(v) = \sum_{s \neq v \neq t} \frac{\sigma_{st}(v)}{\sigma_{st}}$$

where σ_{st} is the total number of shortest paths from node s to node t and $\sigma_{st}(v)$ is the number of those paths that pass through v.

Calculate nodal betweenness centrality for the graph shown here:



b. Can you imagine any other good metrics for determining importance of nodes or edges?

2. Adjacency Matrix Representation

Create an adjacency matrix for the graph below.