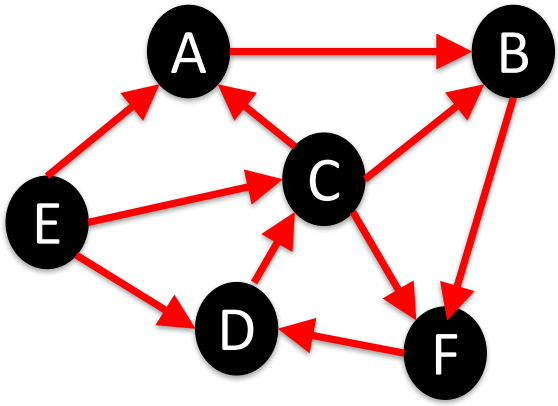
SI 301
Assignment 9
Due in class on Tue November 14th

Reading: Sections 14.3,14.4 of textbook.

1. Problem 1 (10 points), 2 (25 points), 4 (10 points), 5 (5 points) in section 14.7 of textbook.
2. Consider the network below.
    a) Calculate Basic PageRank of the network after 3 steps of the procedure (15 points).
    b) Use the NetworkX command ***pagerank*** to compute the PageRank of each node with damping parameter alpha of 0.8. Submit your code and output. See documentation here (if link does not work, Google "NetworkX pagerank"): https://networkx.github.io/documentation/networkx-1.10/reference/generated/networkx.algorithms.link_analysis.pagerank_alg.pagerank.html (10 points)



3. Give an example of a network that meets all the following properties:
    i. There is a node with a larger in-degree than any other node.
    ii. The node with the highest in-degree has lower PageRank than at least one other node (with damping parameter 0.8).
    iii. The node with the highest PageRank has an out-degree of at least 1.

    Use NetworkX to compute the PageRank of each node with damping parameter alpha of 0.8. Submit your code and output (15 points).

4. You are an aspiring novelist who has decided to self-publish your first book on your own website. Since you are unknown to people around the world and you hope they will become your audience, you are currently considering how to improve your reach online. You have two ideas:
    i. List yourself and your website on GoodReads.com, which a very popular online community for books with links to millions of book and author websites.

ii. You have a friend who is a famous literary blogger who has agreed to do a write up on you and the book (with a link to your website) on his website which has a large following online.

Which of these two actions would contribute more towards a higher ranking of your new website on a search engine that only uses PageRank to rank its results? Explain your reasoning (10 points).