

CSC 395 Information Retrieval
Fall 2019
Written Assignment 01

Total Points: 60

Due date: 05 September 2019 (10:30 PM)

Submission: Computer-typed (hand-written and scanned files are not acceptable) pdf file with your name at the top right corner of the first page.

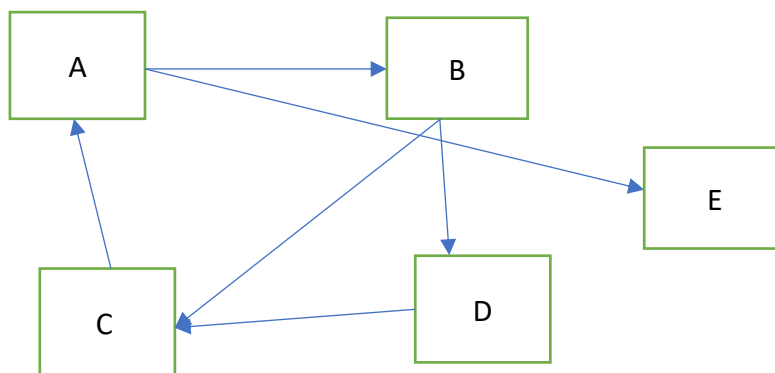
Answer the questions after carefully reading the following article:

The PageRank Citation Ranking: Bringing Order to the Web

Ques 01: Using your own words, explain/summarize the PageRank algorithm. [10 points]

[Note: Please do not just rephrase the abstract as your words.]

Ques 02: Given the following web structure and initial page weights, show five steps of PageRank calculation (fill in the iteration columns). [40 points]



[Figure 01: A Simple Web]

Page/Rank	Iteration 01	Iteration 02	Iteration 03	Iteration 04	Iteration 05
R(A)	0.2				
R(B)	0.2				
R(C)	0.2				
R(D)	0.2				
R(E)	0.2				

[Table: Rank Calculation]

While calculating the ranks, use the following formula:

$$R(u) = \frac{1 - \alpha}{N} + \alpha \sum_{v \in B_u} \frac{R'(v)}{N_v}$$

Consider $\alpha = 0.12$ and N is the total number of pages on web.

Ques 03: What is the significance of α (damping factor) in the model? Explain in your own words.
[10 points]