

# Unit 12 - Week 6- Link Analysis

## Course outline

How to access the portal?

Course Trailer

Prerequisite Assignment

FAQ

Things to Note

Week 1 - Introduction

Week 2 - Handling Real-world Network Datasets

Week 3- Strength of Weak Ties

Week 4 - Homophily

Week 5 - Homophily Continued and +Ve / -Ve Relationships

Week 6- Link Analysis

Lecture 75: The Web Graph

Lecture 76: Collecting the Web Graph

Lecture 77: Equal Coin Distribution

Lecture 78: Random Walk Coin Distribution

Lecture 79: Google Page Ranking Using Web Graph

Lecture 80: Implementing PageRank Using Points Distribution Method-1

Lecture 81: Implementing PageRank Using Points Distribution Method-2

Lecture 82: Implementing PageRank Using Points Distribution Method-3

Lecture 83: Implementing PageRank Using Points Distribution Method-4

Lecture 84: Implementing PageRank Using Random Walk Method -1

Lecture 85: Implementing PageRank Using Random Walk Method -2

Lecture 86: DegreeRank versus PageRank

Week - 6 Feedback Form

Quiz : Assignment 6

Week 7 - Cascading Behaviour in Networks

Week 8 : Link Analysis (Continued)

Week -9 : Power Laws and Rich-Get-Richer Phenomena

Week 10 - Power law (contd..) and Epidemics

Week 11- Small World Phenomenon

Week 12- Pseudocore (How to go viral on web?)

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## Assignment 6

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

Due on 2019-09-11, 23:59 IST.

1) The nodes and the edges in the web graph are

1 point

- ☐ IP addresses and the network connection
- ☐ Web pages and the URLs
- ☐ Web pages and the hyperlinks
- ☐ A person and the web pages h/she is browsing

No, the answer is incorrect.

Score: 0

Accepted Answers:

Web pages and the hyperlinks

2) How does Google Page Rank work?

1 point

- ☐ By hiring experts from different domains who maintain a database of the rankings of all web pages
- ☐ By seeing the trend and manually rank web pages based on the search keywords.
- ☐ Using web graph and random walk algorithm
- ☐ Using web graph and breadth first traversal

No, the answer is incorrect.

Score: 0

Accepted Answers:

Using web graph and random walk algorithm

3) Choose the correct option corresponding to the gold coins' distribution game:

1 point

- ☐ The game might not converge
- ☐ The game converges only when people have an equal number of gold coins
- ☐ The game converges only when people have an unequal number of gold coins
- ☐ The game converges even with people having an equal or unequal number of gold coins

No, the answer is incorrect.

Score: 0

Accepted Answers:

The game converges even with people having an equal or unequal number of gold coins

4) Which of the following kinds of nodes might create a problem in the random walk (drop) gold coins' distribution game?

1 point

- ☐ Nodes having a very high indegree
- ☐ Nodes having a very high outdegree
- ☐ Nodes having zero indegree
- ☐ Nodes having zero outdegree

No, the answer is incorrect.

Score: 0

Accepted Answers:

Nodes having zero outdegree

5) Consider algorithm A to be equal sharing coin distribution game and algorithm B to be random dropping coin distribution game. Which of the following is true?

1 point

- ☐ Both the algorithms converge
- ☐ None of the algorithms converge
- ☐ Algorithm A converges while Algorithm B does not converge
- ☐ Algorithm B converges while Algorithm A does not converge

No, the answer is incorrect.

Score: 0

Accepted Answers:

Both the algorithms converge

6) Consider algorithm A to be equal sharing coin distribution game and algorithm B to be random dropping coin distribution game. Which of the following is true?

1 point

- ☐ Algorithm A ranks the nodes in ascending order of their importance while algorithm B ranks the nodes in descending order of importance
- ☐ Both the algorithms rank the nodes in descending order of their importance but give different results
- ☐ Algorithm A ranks the nodes in descending order of their importance while algorithm B ranks the nodes in ascending order of importance
- ☐ Both the algorithms rank the nodes in descending order of their importance and give same result

No, the answer is incorrect.

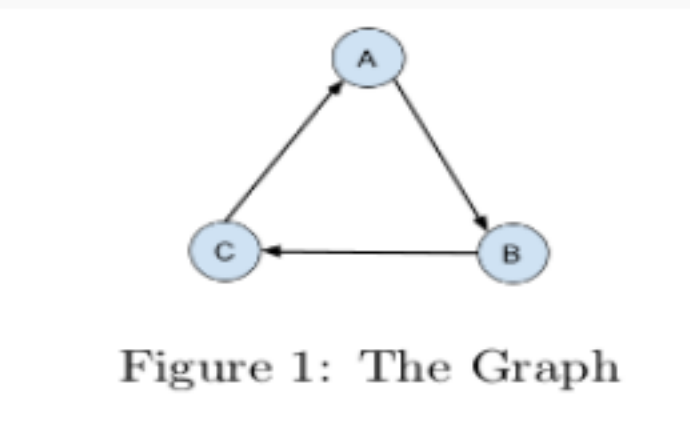
Score: 0

Accepted Answers:

Both the algorithms rank the nodes in descending order of their importance and give same result

7) In the graph shown in Figure 1, assume that the current pagerank values of  $A$ ,  $B$  and  $C$  are 0.2, 0.4 and 0.4 respectively. What will be their pagerank values after one iteration?

1 point



- ☐  $A : 0.4, B : 0.4, C : 0.4$
- ☐  $A : 0.2, B : 0.4, C : 0.4$
- ☐  $A : 0.4, B : 0.2, C : 0.4$
- ☐  $A : 0.4, B : 0.4, C : 0.2$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$A : 0.4, B : 0.2, C : 0.4$

8) Which of the following correctly depicts teleportation?

1 point

- ☐ Jumping from the current node to its neighbor's neighbor
- ☐ Going back to the previous node which was explored
- ☐ Jumping to any random node in the network
- ☐ Jumping to the node in the network which has maximum outdegree

No, the answer is incorrect.

Score: 0

Accepted Answers:

Jumping to any random node in the network