

ASSIGNMENT # 03

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Class: BSE-2(B)

Enrollment: 02-131222-036

Q No. 01

Solution:

For 1st Iteration:

$$PR(A) = 1 - d + d \left(\frac{PR(D)}{1} \right)$$

$$PR(A) = 1 - 0.85 + 0.85 (1)$$

$$\boxed{PR(A) = 1}$$

$$PR(B) = 1 - d + d \left(\frac{PR(A)}{2} \right)$$

$$PR(B) = 1 - 0.85 + 0.85 \left(\frac{1}{2} \right)$$

$$\boxed{PR(B) = 0.575}$$

$$PR(C) = 1 - d + d \left(\frac{PR(B)}{2} \right)$$

$$PR(C) = 1 - 0.85 + 0.85 \left(\frac{1}{2} \right)$$

$$\boxed{PR(C) = 0.575}$$

$$PR(D) = 1 - d + d \left(\frac{PR(A)}{2} + \frac{PR(B)}{2} + \frac{PR(E)}{1} \right)$$

$$PR(D) = 1 - 0.85 + 0.85 \left(\frac{1}{2} + \frac{1}{2} + 1 \right)$$

$$\boxed{PR(D) = 1.85}$$

$$PR(E) = 1 - d + d \left(\frac{PR(C)}{1} \right)$$

$$PR(E) = 1 - 0.85 + 0.85 \left(\frac{1}{1} \right)$$

$$\boxed{PR(E) = 1}$$

For 2nd Iteration:

$$PR(A) = 1 - 0.85 + 0.85 \left(\frac{1.85}{1} \right)$$

$$\boxed{PR(A) = 1.722}$$

$$PR(B) = 1 - 0.85 + 0.85 \left(\frac{1}{2} \right)$$

$$\boxed{PR(B) = 0.575}$$

$$PR(C) = 1 - 0.85 + 0.85 \left(\frac{0.575}{2} \right)$$

$$\boxed{PR(C) = 0.394}$$

$$PR(D) = 1 - 0.85 + 0.85 \left(\frac{1}{2} + \frac{0.575}{2} + 1 \right)$$

$$\boxed{PR(D) = 1.669}$$

$$PR(E) = 1 - 0.85 + 0.85 \left(\frac{0.394}{1} \right)$$

$$\boxed{PR(E) = 0.638}$$

For 3rd Iteration:

$$PR(A) = 1 - 0.85 + 0.85 \left(\frac{1.669}{1} \right)$$

$$PR(A) = 1.568$$

$$PR(B) = 1 - 0.85 + 0.85 \left(\frac{1.722}{2} \right)$$

$$PR(B) = 0.881$$

$$PR(C) = 1 - 0.85 + 0.85 \left(\frac{0.575}{2} \right)$$

$$PR(C) = 0.394$$

$$PR(D) = 1 - 0.85 + 0.85 \left(\frac{1.722}{2} + \frac{0.575}{2} + \frac{0.638}{1} \right)$$

$$PR(D) = 1.668$$

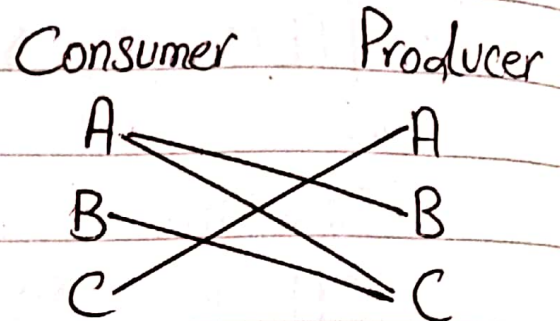
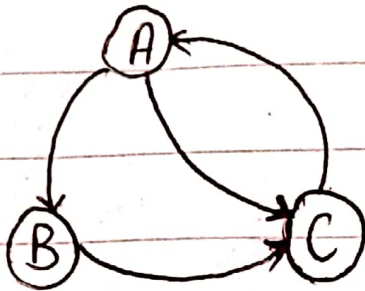
$$PR(E) = 1 - 0.85 + 0.85 \left(\frac{0.394}{1} \right)$$

$$PR(E) = 0.484$$

Ans.

QNo. 02

Solution:



		Producer		
		v_1	v_2	v_3
Consumer	v_1	0	1	1
	v_2	0	0	1
	v_3	1	0	0

Producer-Producer Cosine similarities

$$\text{Cosine}(v_1, v_2) = 0$$

$$\text{Cosine}(v_1, v_3) = 0$$

$$\text{Cosine}(v_2, v_3) = 0.70$$

Ans.