PageRank Examples

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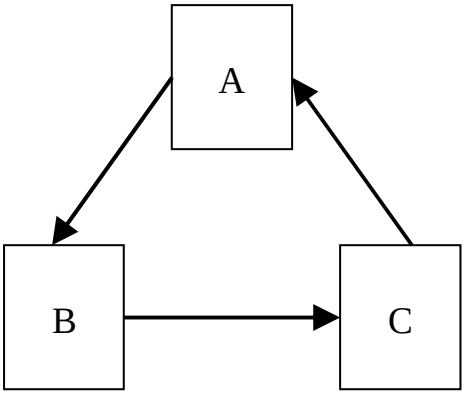
Example 1



The number of web pages $N = 3$
The damping parameter $d = 0.7$

$PR(A) = (1 - d) \times (1 / N) + d \times (PR(C) / 1)$
$PR(B) = (1 - d) \times (1 / N) + d \times (PR(A) / 1)$
$PR(C) = (1 - d) \times (1 / N) + d \times (PR(B) / 1)$

So

$PR(A) = 0.1 + 0.7 \times PR(C)$
$PR(B) = 0.1 + 0.7 \times PR(A)$
$PR(C) = 0.1 + 0.7 \times PR(B)$

By solving the above system of linear equations, we get

$PR(A) = 1/3 = 0.33$
$PR(B) = 1/3 = 0.33$
$PR(C) = 1/3 = 0.33$

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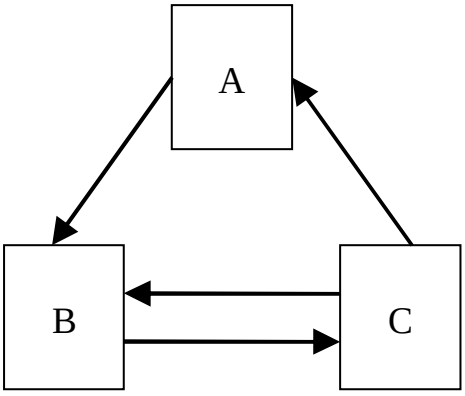
Example 2



The number of web pages $N = 3$
The damping parameter $d = 0.7$

$PR(A) = (1 - d) \times (1 / N) + d \times (PR(C) / 2)$
$PR(B) = (1 - d) \times (1 / N) + d \times (PR(A) / 1 + PR(C) / 2)$
$PR(C) = (1 - d) \times (1 / N) + d \times (PR(B) / 1)$

So

$PR(A) = 0.1 + 0.35 \times PR(C)$
$PR(B) = 0.1 + 0.70 \times PR(A) + 0.35 \times PR(C)$
$PR(C) = 0.1 + 0.70 \times PR(B)$

By solving the above system of linear equations, we get

$PR(A) = 0.2314$
$PR(B) = 0.3933$
$PR(C) = 0.3753$

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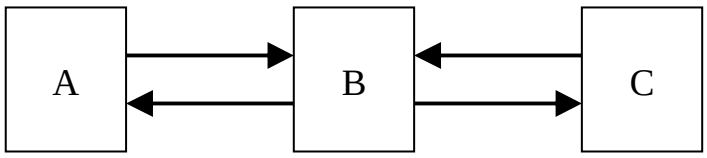
Example 3



The number of web pages $N = 3$
The damping parameter $d = 0.7$

$PR(A) = (1 - d) \times (1 / N) + d \times (PR(B) / 2)$
$PR(B) = (1 - d) \times (1 / N) + d \times (PR(A) / 1 + PR(C) / 1)$
$PR(C) = (1 - d) \times (1 / N) + d \times (PR(B) / 2)$

So

$PR(A) = 0.1 + 0.35 \times PR(B)$
$PR(B) = 0.1 + 0.70 \times PR(A) + 0.70 \times PR(C)$
$PR(C) = 0.1 + 0.35 \times PR(B)$

By solving the above system of linear equations, we get

$PR(A) = 0.2647$
$PR(B) = 0.4706$
$PR(C) = 0.2647$