

Web Mining (CSE3024)

Lab Assignment 5

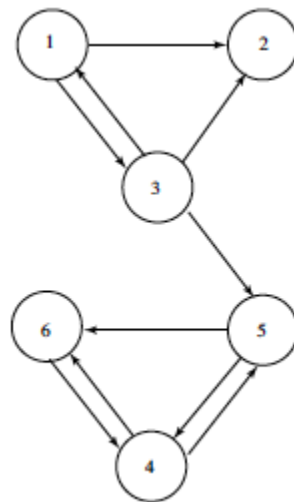
Name: Kritika Mishra

Registration Number: 16BCI0041

Slot: L15+L16

Date: 1st September 2018

Question: Write a python program to find the ranks for the given graph.



Code:

```
# -*- coding: utf-8 -*-
"""
Created on Wed Sep  5 11:00:40 2018

@author: Kritika Mishra
"""

import numpy as np
def page_rank(d1,x):
    i=0
    d=np.array([d1])
    g = np.array([[0,0.5,0.5,0,0,0],
                  [0,0,0,0,0,0],
                  [0.67,0.67,0,0,0.67,0],
                  [0,0,0,0,0.5,0.5],
```

```

        [0,0,0,0,0,1],
        [0,0,0,1,0,0]])

gt =g.transpose()
d=[d1]*len(gt)
for i in range(x):
    l=np.matmul(gt,d)
    d=l
print(l)

print("d= 0.85 and 7 iterations\n")
page_rank(0.85,7)
print("\nd= 0.85 and 100 iterations\n")
page_rank(0.85,100)
print("\nd= 0.85 and 1000 iterations\n")
page_rank(0.85,1000)
print("\nd= 0.86 and 10 iterations\n")
page_rank(0.86,10)
print("\nd= 0.86 and 100 iterations\n")
page_rank(0.86,100)
print("\nd= 0.86 and 1000 iterations\n")
page_rank(0.86,1000)

```

Output:

```

1 #-*- coding: utf-8 -*-
2 """
3 Created on Wed Sep 5 11:00:40 2018
4
5 @author: Kritika Mishra
6 """
7
8 import numpy as np
9 def page_rank(d1,x):
10     i=0
11     d=np.array([d1])
12     g = np.array([[0,0.5,0.5,0,0,0],
13                   [0,0,0,0,0,0],
14                   [0.67,0.67,0,0,0.67,0],
15                   [0,0,0,0.5,0,0.5],
16                   [0,0,0,0,1,],
17                   [0,0,0,1,0,0]])
18     gt =g.transpose()
19     d=[d1]*len(gt)
20     for i in range(x):
21         l=np.matmul(gt,d)
22         d=l
23     print(l)
24
25 print("d= 0.85 and 7 iterations\n")
26 page_rank(0.85,7)
27 print("\nd= 0.85 and 100 iterations\n")
28 page_rank(0.85,100)
29 print("\nd= 0.85 and 1000 iterations\n")
30 page_rank(0.85,1000)
31 print("\nd= 0.86 and 10 iterations\n")
32 page_rank(0.86,10)
33 print("\nd= 0.86 and 100 iterations\n")
34 page_rank(0.86,100)
35 print("\nd= 0.86 and 1000 iterations\n")
36 page_rank(0.86,1000)

```

```

[2.86353153e-238 5.72706306e-238 2.86353153e-238 1.55187970e+000
 7.75939850e-001 1.55187970e+000]

In [3]: runfile('C:/Users/Kritika Mishra/Desktop/5th Semester/Web Mining/Lab/PageRank/pr4.py',
d= 0.85 and 7 iterations
[0.02141057 0.0373886 0.01597803 1.50655339 0.76079369 1.54035544]

d= 0.85 and 100 iterations
[1.51935506e-24 3.03871013e-24 1.51935506e-24 1.53383459e+00
 7.66917293e-01 1.53383459e+00]

d= 0.85 and 1000 iterations
[2.83023465e-238 5.66046931e-238 2.83023465e-238 1.53383459e+000
 7.66917293e-001 1.53383459e+000]

d= 0.86 and 10 iterations
[0.00362846 0.00725692 0.00362846 1.55220864 0.76956995 1.55243705]

d= 0.86 and 100 iterations
[1.53722983e-24 3.07445966e-24 1.53722983e-24 1.55187970e+00
 7.75939850e-01 1.55187970e+00]

d= 0.86 and 1000 iterations
[2.86353153e-238 5.72706306e-238 2.86353153e-238 1.55187970e+000
 7.75939850e-001 1.55187970e+000]

In [4]:

```