**Code:**

import numpy as num

graph = {

    'b' : ['a','c','d', 'e'],

    'a' : ['d', 'c'],

    'c' : ['d','b', 'e'],

    'd' : ['b','c'],

    'e' : ['b','c','d']

}

iterationNo = 7

print("Graph")

print(graph)

# print(graph['b'].count('a'))

A = []

for i in graph.keys():

    a = []

    for j in graph.keys():

        if(graph[j].count(i)!=0):

            a.append(1/len(graph[j]))

        else:fppp

            a.append(0)

    A.append(a)

print("Page rank Matrix")

for i in A:

    for j in i:

        print(j,' ',end=" "),

    print('')

B = []

for i in range(0,len(A)):

    B.append([1])

print("Iteration Table")

print(B)

for i in range(0,iterationNo):

    C = num.matmul(A,B)

    print(C)

**Output:**

