

a2q4q5\_\_YOU

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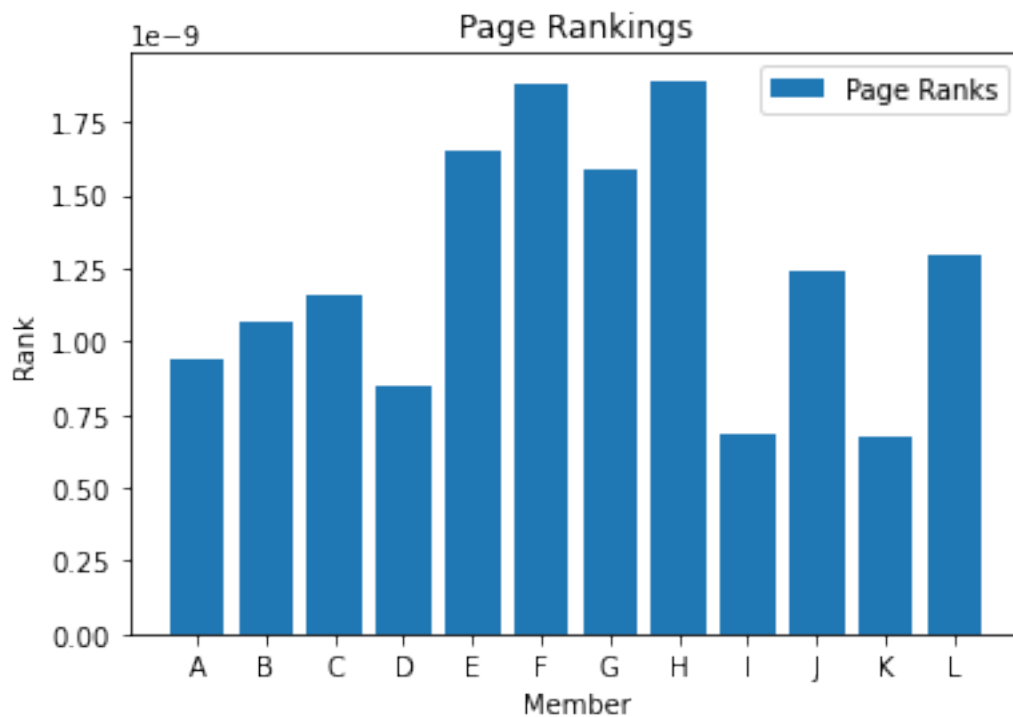
## 0.1 (a) Create sparse matrix

```
[83]: # === YOUR CODE HERE ===
A = dok_matrix((12,12), dtype=np.float32)
A[1,0] = 0.38
A[0,1] = 0.06
A[2,0] = 0.38
A[0,2] = 0.47
A[2,1] = 0.41
A[1,2] = 0.29
A[4,0] = 0.24
A[0,4] = 0.09
A[3,2] = 0.24
A[2,3] = 0.08
A[4,3] = 0.42
A[3,4] = 0.04
A[5,1] = 0.53
A[1,5] = 0.09
A[5,3] = 0.5
A[3,5] = 0.28
A[5,4] = 0.09
A[4,5] = 0.19
A[6,4] = 0.13
A[4,6] = 0.39
A[7,6] = 0.17
A[6,7] = 0.21
A[7,5] = 0.22
A[5,7] = 0.15
A[8,6] = 0.23
A[6,8] = 0.24
A[8,7] = 0.21
A[7,8] = 0.24
A[9,8] = 0.32
A[8,9] = 0.05
A[9,7] = 0.1
A[7,9] = 0.4
A[9,6] = 0.27
A[6,9] = 0.3
A[10,9] = 0.25
A[9,10] = 0.6
A[10,8] = 0.2
A[8,10] = 0.07
A[10,7] = 0.18
A[7,10] = 0.33
A[11,7] = 0.15
A[7,11] = 0.29
A[11,6] = 0.2
```

```
A[6,11] = 0.47
A[11,5] = 0.22
A[5,11] = 0.18
A[11,4] = 0.39
A[4,11] = 0.06
```

## 0.2 (b) Run PageRank on network

```
[84]: alph = 1
p, iters = PageRank(A, alph)
plt.bar(['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K', 'L'], p, label="Page Ranks")
plt.legend()
plt.xlabel('Member')
plt.ylabel('Rank')
plt.title('Page Rankings')
plt.show()
```



## 0.3 (c) Note to police

based on the data, i would conclude that H is the most influential, followed by F

```
[ ]:
```