```
import numpy as np

threshold = 1e-13
beta = 0.85

A = np.array([[0.7, 0, 1, 0.5], [1, 0, 1.5, 0.1], [1, 1, 0, 0], [1, 1, 0, 1]])

M = A / A.sum(axis=0)
print("Transition Matrix : \n")
print(M)

r = np.ones(len(M)) / len(M)

for i in range(0, 20):
    r_new = beta * M.dot(r) + (1 - beta) / len(M)
    print(f"Iteration {i+1}:")
    print("The rank vector:")
    print(r_new)
    if np.sum(np.abs(r_new - r)) < threshold:
        break
    r = r_new
```