A Project Description

On

**Page Rank Algorithm**

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Under the supervision of

**FACULTY: Dr. N L Bhanumurthy**

**SUBMITTED AS AN EVALUATION COMPONENT OF**

**Course: Information Retrieval CS F469**

A picture containing text, compass, clipart, cup

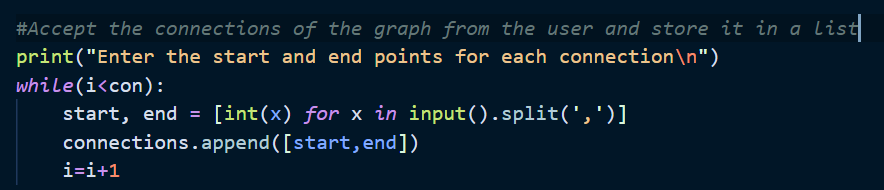
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**HYDERABAD CAMPUS**

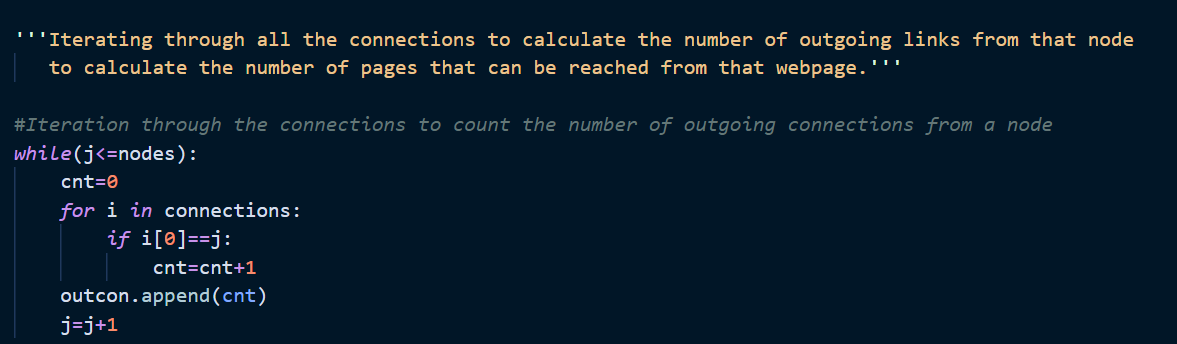
**Storing connections from a graph in a list:**

The user will enter the connections of the graph and we’re storing it in a list.



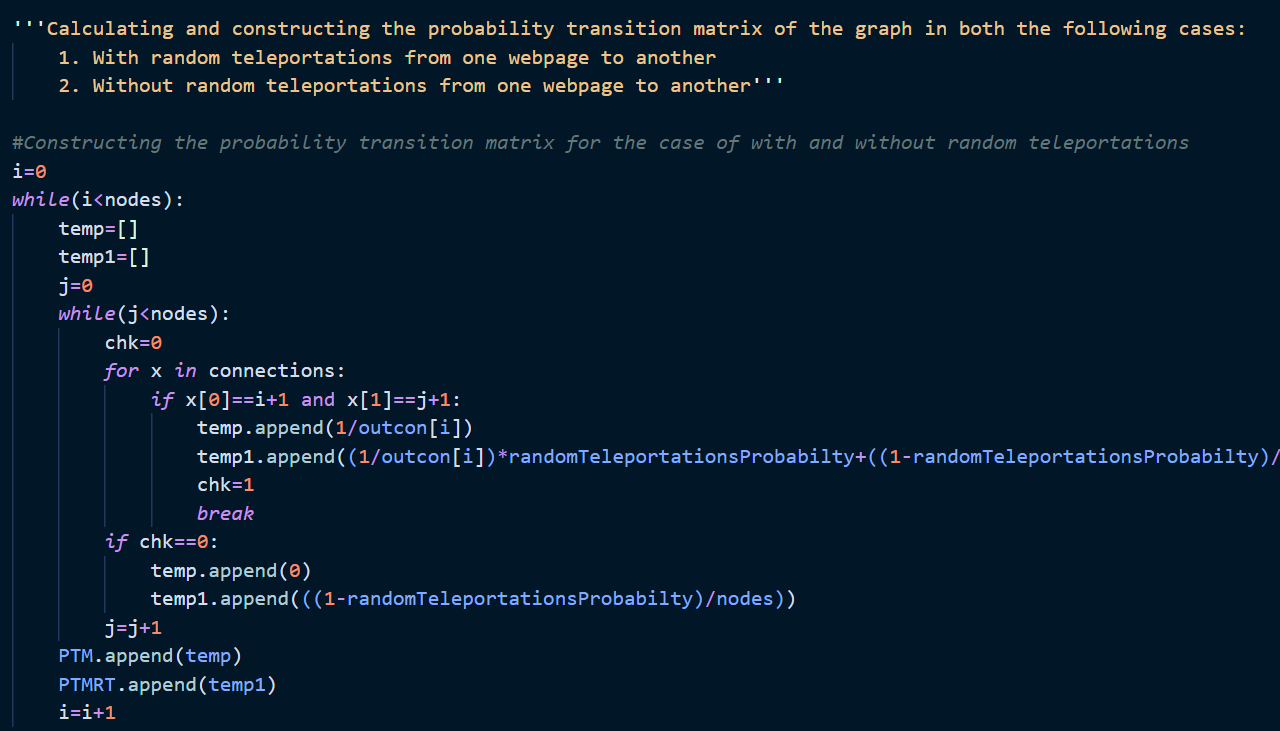
**Counting the number of outgoing connections from a node:**

It calculates the number of pages that can be reached from that web page.



The above function counts the number of outgoing connections of the graph from a node.

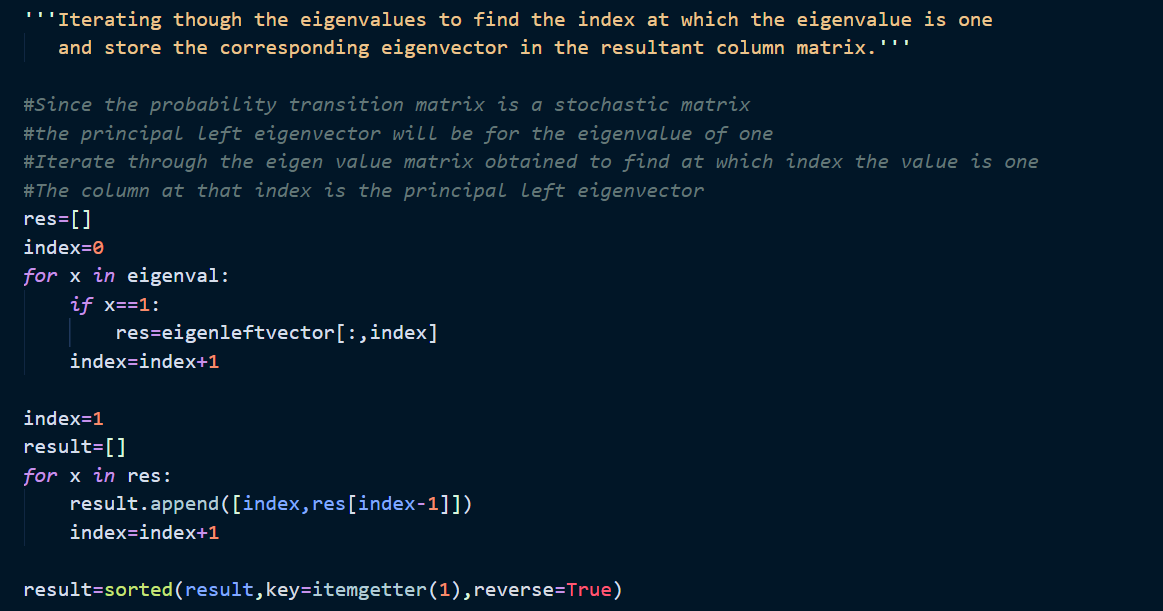
**Probability Transtition Matrix:** The principal left eigen vector of the transition matrix indicates the probability of being on each webpage.



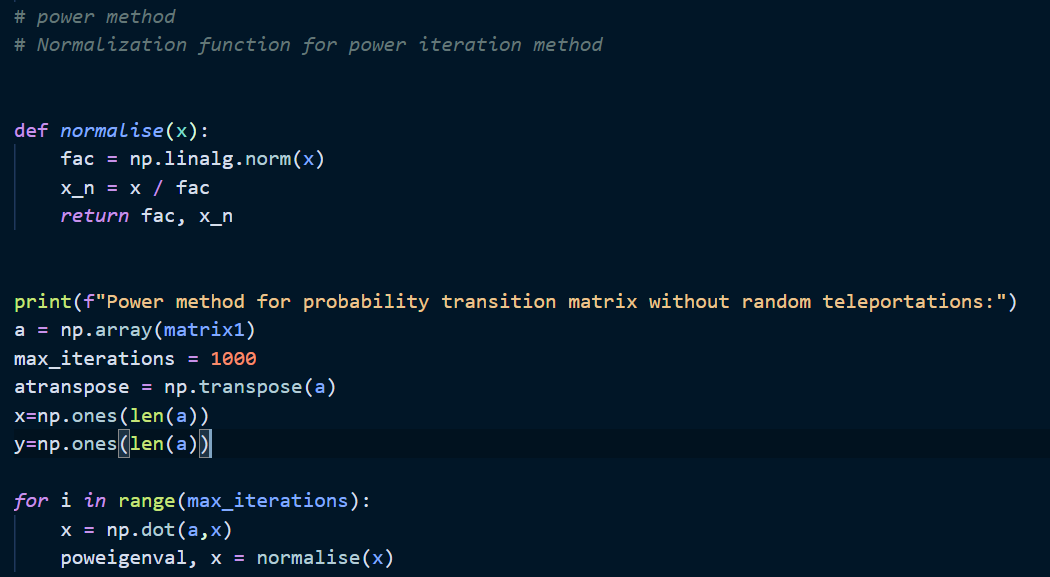
**Eigen Values and Left Eigenvector:**

Using the linear algebra module in scipy. eigenval,eigenleftvector=linalg.eig(a=np.array(PTMRT),b=None,left=True,right=False,overwrite\_a=False,overwrite\_b=False,check\_finite=False).

The principal left eigen vector of the transition matrix indicates the probability of being on each webpage.

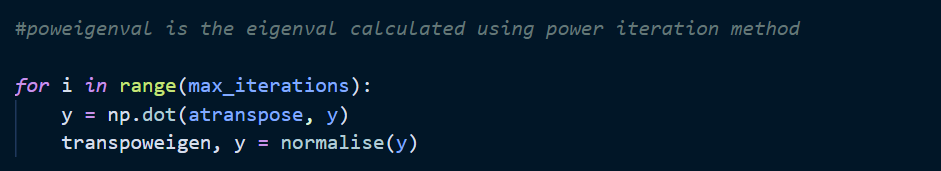


**Normalization function for power method:**

A normalization function is calculated for power method which is used to find the eigen values.****

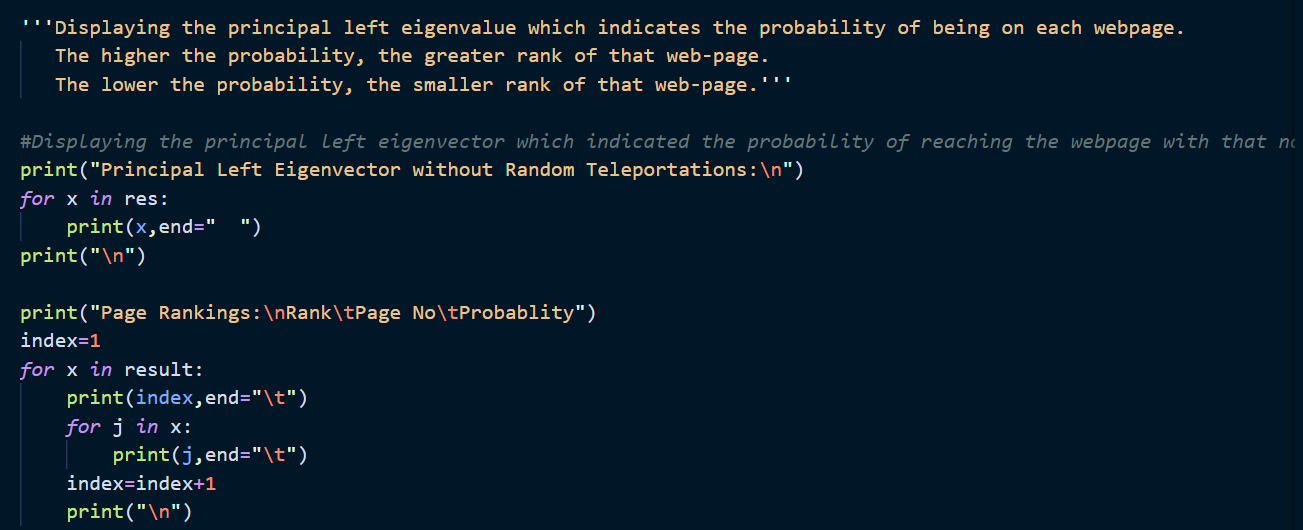
**Eigen value using power method:**

The Power Method is used to find a dominant eigenvalue (one with the largest absolute value), if one exists, and a corresponding eigenvector.

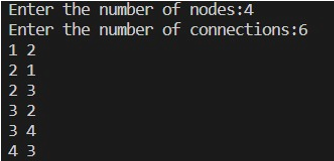
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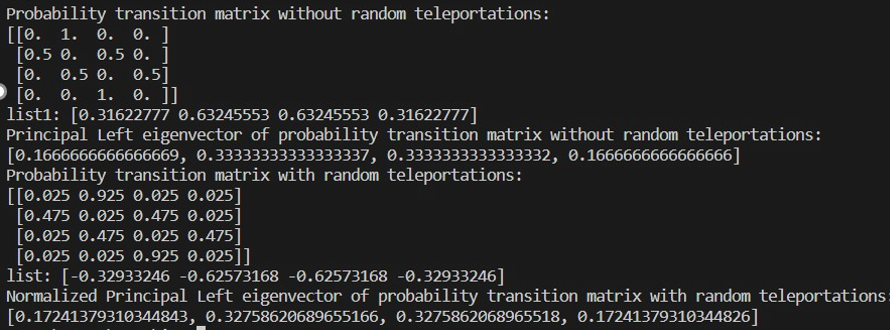
**Probability of being on each web page:**

The principal left eigen vector of the transition matrix represent the probability of being on each web page.



**Test Case 1:**





**Test Case 2:**

