**Implementation of page rank algorithm**

Data for the page rank algorithm can be generated in one of the following ways:

1. By accepting inputs from the user: User must provide number of vertices in the graph, maximum out-degree of each vertex and specify the outgoing edges for every vertex.
2. Coin flipping method: A set of graphs are generated with increasing values of number of vertices and various out-degrees. The edges between them are randomly selected based on a coin flipping method which has a probability of 0.5.

The edges between the vertices are stored in an adjacency list, which is implemented using an array list. The array list is sent to the class where the page rank is iteratively calculated either till a valid solution is obtained or iteration limit is reached.

The asymptotic time complexity seems to be O(n2) since during the computation of page rank iteratively, a for loop is nested inside a while loop, for all ‘n’ vertices of the graph.

The findings that were obtained for a test run is as follows:

In the above graph, x-axis represents number of vertices and y axis represents time in the order of the value in the graph\* milliseconds.