

Abstract

Nowadays, human interactions are increasing and expanding, social networks as a form of organization of human interaction certainly growing as well. The amount of these social networks's data, make it difficult to perform social network analysis (SNA), which is studying the social network for capturing important information in it.

One of the SNA's problem is knowing who is the most important person in the dissemination of information in a social network. This problem can be overcome by measuring levels of betweenness centrality (C_B) per person on these social networks. The calculation of betweenness centrality value takes a very long time for a very large social network data. There is an algorithm that has fast time performance in betweenness centrality measure, it is Ulrik Brandes algorithm.

In this paper, Ulrik Brandes algorithm used to search the most important person in the dissemination of information on social network iFACE IT Telkom. Accuracy of Ulrik Brandes algorithm in determining the central node and calculates the value of C_B for each node on a graph is measured in this paper. Test results show that Ulrik Brandes algorithm has accuracy rate 100% in calculating the value of C_B for each node in the unweighted graph and in determining the central node in the unweighted and weighted graph. Test results also show that the algorithm prioritizes distance than weight of the graph in the calculation of betweenness centrality so that the weights do not affect the process of determining the shortest paths.

Keywords: social network analysis, betweenness centrality, Ulrik Brandes algorithm