Abstract

Twitter is one of the social network sites that are growing rapidly and has more than millions of users in various parts of the world at this time. One research on social network is community detection. Community detection aims to divide the network into regions on the graph. The formation of this community can be used for various purposes such as finding targeted product marketing, to calculate the popularity of a good or user, detecting issues in the community, detecting terrorist networks, and more.

In previous research, community detection has not yet been able to provide information on how to get the best grouping results. In this research will be used a method of community detection called Spectral Clustering Method. Where this method groups data by mapping its affinity matrix (or matrix similarity) to a matrix containing eigenvectors (hereinafter called eigenspaces). Which will then be grouped by using clustering algorithm and will be calculated the value of modularity to see the best results of each grouping. The results of the system show the effect of the best number of k and centroid in determining Spectral Clustering algorithm's performance in detecting community.

From the test that has been done, the best result obtained by using Spectral Clustering algorithm is with the value of modularity = 0.9607 for the number of users 90 users with the number of sides as much as 36 relations and the number of clusters is 7.

Keywords: Twitter, Community Detection, Spectral Clustering, Laplace, K-means, similarity