# Abstract

K-Means is a type of unsupervised classification method which partitions data items into one or more clusters. K-Means tries to model a dataset into clusters so that data items in a cluster have similar characteristic and have different characteristics from the other clusters. K-Means algorithm is an approach of clustering that is defined as a process for unsupervised to categorize data which have certain common characteristics, Algorithm K-Mean's functions is to classify an object in common (the grouping process called clustering) on the basis of K clusters, where K is the positive integers. The development of K-Means and problems usually involved when using the method are illustrated. Some related information are also explained including the method for choosing the most appropriate number of clusters, the issue between supervised and unsupervised classification, an extended development of K-Means which using the kernel trick and mixture modeling which is similar to K-Means in terms of the algorithm used.

At this final project studied algorithm k-means clustering to separate the blue object with a blue background and specific labeling for help to process background transparency. Evaluation carried out by the results of experiments with several cases and conditions where the results of data processing or more specifically image processing will produce the expected outputs.

The results of the study showed that the method of K-means clustering can be used for grouping object in an image with grouping color, this will help to separate background objects that have the same color and with specific labeling will determine which is more certain/obvious between the blue background and the blue object.

***Keywords***: *k-means*, *clustering*, *pelabelan khusus*, *Supervised and Unsupervised.*