ABSTRACT

Weather is the state of the air at certain times and in certain relatively narrow region in a short time frame. The weather was very influential for living things, especially for people in the activity because the information about the weather, especially rainfall will be very helpful. Greater rainfall may disrupt the activities and can interfere with the movement of the economy, especially for fishermen and farmers. Therefore, it takes a rainfall prediction so that people, especially fishermen and farmers can find out how to anticipate how they should work for the future when the rainy season. In this thesis, to predict rainfall is used "Analysis and Implementation of Fuzzy Clustering Algorithm K-Means". In predicting rainfall using a Fuzzy, required membership function (MF) to perform Fuzzy process. Establishment of membership functions performed by the K-Means Clustering. To obtain optimal results membership functions will be implemented by using a rule base Apriori or FP-Growth. In this final project the optimal parameter that we used are two cluster membership function and rule base with 9 rules generated from apriori algorithm with WMAPE error result of 52.46%. Unlike when using grouping data by class, the result of error is about 75% by using a three-cluster membership functions and rule base with 11 rules of the results of FP-Growth algorithm.

Keywords: *Data mining, Fuzzy System, Membership Function (Membership Function), K-Means Clustering*