ABSTRACT

In a bank, the marketing process can be done by contacting clients one by one by the phone. Sometimes, officers need to contact clients more than once to ascertain whether the client is willing to use the products offered [1]. *Of course this is very inefficient and also requires a lot of money. This inefficient marketing process is due to officers not knowing the characteristics of clients who have the potential to subscribe to term deposits. In order for the marketing process to be more efficient, it is necessary to classify bank clients based on their subscription status of the term deposits on direct marketing campaigns. In this final task, the classification method with C5.0 algorithm will be used to process the client bank dataset in order to obtain a classification model. In addition, the dataset will be used in this study has an imbalanced class issue, in which the comparison between the yes: no classes is 1: 8. The Synthetic Minority Over-Sampling Technique (SMOTE) technique will be applied to solve the imbalanced class issues in the raw dataset. From this research, Model with best performance value is obtained after handling of imbalanced class issue with SMOTE technique with percentage duplication of minority class equal to 700% or comparison of class number between yes: no is about 1: 1. After that, the formation of the classification model with C5.0 algorithm is done by dividing the sample data based on the attribute that has the highest information gain value.Best performance values of the classification model were 91.3% for accuracy, 90.16% for precision, 93.18% for recall, and 91.65% for f-measure value with error rate value in the process of forming a classification model is 4%.*

Keywords*: Classification, C5.0 Algorithm, Imbalanced Class, SMOTE.*