

ABSTRACT

Competition is getting tougher, universities must prepare graduates who can compete in the world of work. The standard of graduates profile that can be used as an assessment is the waiting period. The ideal target of a waiting period is less than or equal to three months. Several factors that affect the waiting period are the Grade Point Average (GPA), period study, and students' organization activity. This final project was conducted to create a waiting period prediction model based on the factors that affect it. The results of the prediction model will be used as the basis for designing an activity recommendation system for students.

The waiting period prediction model was built based on factor that affect it, namely study period, GPA, students' organization activity, and students' achievement. The data will be pre-processed according to data mining rules before the prediction model is made. After pre-processing the data, splitting data will be carried out, the data were split into training and testing data. In this final project, to build a waiting period prediction model used decision tree algorithm Classification and Regression Tree (CART). Decision tree can be used as a decision making. The CART algorithm is a binary decision tree that produces classification or regression tree.

Based on the decision tree model, generate a total of 8 terminal nodes, so that there are 8 rules that can be identified. This final project will be carried out to obtain the results of waiting period predictions based on the rules' identification from the decision tree model. The evaluation of prediction model is seen based on the values of accuracy, sensitivity, and specificity. The accuracy value is 60.78%, the sensitivity is 25%, and the specificity is 64.96%. At the implementation stage will be made activity recommendations system for active students.

Keywords—CART, Data Mining, Decision Tree, and Waiting period