

Abstract

Predicting the performance of students plays an important role in every institution to protect their students from failures and leverage their quality in higher education. Algorithm and Programming is a fundamental course for the students who start their studies in Informatics. Hence, the scope of this research is to identify the critical attributes which influence student performance in the E- learning Environment on Moodle LMS (Learning Management System) Platform and its accuracy. Data mining helps the process of pre-processing data in a dataset from raw data to quality data for advanced analysis. Dataset set is consisting of student academic performance such as grades of Quizzes, Mid exams, Final exams, and Final projects. Moreover, the dataset from LMS is considered as well in the process of modelling, in terms of constructing the decision tree, such as punctuality submission of Quizzes, Assignments, and Final Projects. Regarding the Basic Algorithm and Programming course, which is separated into two subjects in the first and second semester, thus the research will predict the student performance in the Basic Algorithm and programming course in the second semester based on the Introduction to programming course in the first semester. Decision Tree techniques are applied by using information gain in ID3 algorithm to get the important feature which is the PP index has the highest information gain with value 0.44, also the accuracy between ID3 and J48 algorithm that shows ID3 has the highest accuracy of modelling which is 84.80% compared to J48 82.34%.