Predicting and Analysis of Students’ Academic Performance using Data Mining Techniques

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Authors:
Reda M. Ahmed, Nahla F. Omran, Abdelmgeid A. Ali

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Abstract

The educational database holds on the massive amount of data and it is increasing rapidly. Data mining provides effective techniques for discovering useful knowledge and pattern from students’ data. The discovered patterns can be used to understand many problems in the educational field. This paper proposes a framework to predict the achievement of first-year bachelor’s students in computer science course. Decision Tree, Naïve Bayes, and Multi-Layer Perceptron classification methods are applied to the students’ data using the WEKA Data Mining tool to produce the best prediction model of the students’ academic performance. Experiments conducted to detect the best model among the used techniques then the models’ accuracy is computed. The extracted knowledge from the prediction model will be utilized to recognize and profile the student to decide the students’ level of success in the first semester.

References


**Index Terms**

Computer Science  
Data Mining
Keywords

Educational Data Mining, Decision Tree, Naïve Bayes, Multi-Layer Perceptron, Prediction, students’ academic performance