Classification System for Class Placement of Junior High School Students Using Random Forests Method

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ABSTRACT

This research aims to develop an effective class placement classification system for junior high school students, utilizing the ability of the Random Forests method to handle complex data and produce accurate prediction models. Grade 7 and 8 student grade data from several school years (tapel) were collected and processed, including subject grades. The average scores of science, social, and language categories were calculated for each student, then categorized into high, medium, and low. Random Forests algorithm was applied to build the classification model, with 70% training and 30% testing data split. Model evaluation was conducted using accuracy, precision, recall, and F1-score metrics. The results showed that the Random Forests model achieved a high classification accuracy rate of 96.97%-97.74%. Further evaluation showed precision of 97.04%-97.79%, recall of 96.97%-97.74%, and F1-score of 96.95%-97.75%, proving the reliability of the model in grouping students based on their grade categories.

Keywords: *Classification, Random Forests, Website, Laravel, Python.*