

**CLASSIFICATION SYSTEM FOR STUDENT LEARNING
LEVEL PLACEMENT USING THE RANDOM FOREST
METHOD AT BIEPLUS KAMPUNG INGGRIS PARE**

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ABSTRACT

Student placement is an important process in determining the appropriate English learning level based on students' abilities. This study aims to develop a web-based student placement recommendation system using the Random Forest algorithm at BIEPLUS Kampung Inggris. The system was developed using Laravel as the web application framework and FastAPI as the machine learning service. The dataset consisted of 500 training data and 200 testing data with features including grammar, structure, vocabulary, listening, reading, writing, and speaking. Data preprocessing was carried out through dataset validation, score conversion into percentage form, and controlled variation. The results showed that the Random Forest algorithm was able to classify students into Pre-basic (PB), Basic (B), and Pre-intermediate (PI) levels with an accuracy of 90%. Feature importance analysis indicated that grammar, structure, and vocabulary were the most influential features in the Classification process. The developed system was successfully implemented and deployed online, enabling a faster, more objective, and more efficient student placement process.

Keywords: *Placement test, Random Forest, Classification, Website.*