

# **IMPLEMENTATION OF A DECISION SUPPORT SYSTEM FOR STUDENT CLASS PLACEMENT AT SMPN 1 PAMEKASAN USING THE SIMPLE ADDITIVE WEIGHTING (SAW) METHOD**

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## **ABSTRACT**

The Student class placement is one of the important stages in the academic process at SMPN 1 Pamekasan which requires consideration based on various aspects, such as report card grades, test scores, and student achievement. The process that is still done manually has the potential to take longer and increase the possibility of errors in calculations and class allocation. This study aims to develop a web-based decision support system that can help the student class placement process more objectively and efficiently by implementing the \*Simple Additive Weighting\* (SAW) method. The system was built using the Laravel framework with the PHP programming language and utilizes MySQL as a database. The stages of implementing the SAW method include determining criteria and weights, normalizing scores, calculating preferences, and the ranking process to obtain student placement recommendations. The study utilized data from 327 students, while 33 data were selected as samples to compare the system results with the class placement method implemented by the school. Functional testing using the \*Black Box Testing\* method showed that all 20 test scenarios were successfully executed with a success rate of 100%. Furthermore, a comparative analysis of the school ranking results and the system yielded a Mean Squared Error (MSE) of 5.33, indicating that the system is capable of generating class placement recommendations consistently, objectively, and in accordance with predetermined criteria. Furthermore, an interface evaluation using the System Usability Scale (SUS) method yielded a score of 85, falling within the Excellent category, indicating that the system has a very good level of usability. Based on the overall test results, the developed decision support system is deemed capable of supporting the student class placement process in a more structured, accurate, and efficient manner compared to manual processes.

**Keywords:** Decision Support System, Simple Additive Weighting (SAW), Class Placement, Laravel, System Usability Scale (SUS).