

ABSTRACT

The rapid advancement of information technology has driven digital transformation across various sectors, including sports, to improve efficiency, accuracy, and objectivity in data management and decision-making. ROYALS Karate Academy Jawa Barat, as a Karate athlete development institution actively involved in competitive events, still experiences challenges in documenting and ranking athlete performance due to the use of manual data recording. These activities include documenting physical test results, managing training schedules, verifying curation documents, and determining championship delegation quotas. Such conditions lead to time-consuming data processing, a higher risk of errors and data loss, and limited transparency, preventing athletes from clearly understanding assessment criteria, scoring mechanisms, and ranking positions. This study aims to design and develop a web-based athlete performance ranking information system that supports structured and integrated data management. The system is developed using the ICONIX Process as the software engineering methodology. The Analytical Hierarchy Process (AHP) is applied to determine the weighting of evaluation criteria based on coaches' preferences, while the Weighted Sum Model (WSM) is used to calculate final scores and generate athlete rankings. The system is implemented using Next.js for the frontend, Laravel for the backend, and MySQL as the database. System evaluation is conducted through black-box testing and usability testing using a Likert scale. The results show that the system functions as expected and achieves a usability score of 83.67, indicating that the proposed system is effective in improving transparency and efficiency in athlete performance ranking management.

Keywords : Information System, Athlete Performance Ranking, Karate, AHP, WSM, ICONIX Process