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PST010 - KIK SmartJury: AN AUTOMATED REAL-TIME SCORING SYSTEM FOR KIK CONVENTION JUDGING

Tuan Norhafizah Tuan Zakaria^{1*}, Nasrul Hazim Mohamad², and Nur Nadia Dzulkifli³

¹Fakulti Sains Komputer dan Matematik, Universiti Teknologi MARA, Cawangan Negeri Sembilan, Kampus Kuala Pilah, Negeri Sembilan

²Cleanique Coders Resources Sdn. Bhd., Taman Juasseh Sentosa, Juasseh, 72500 Kuala Pilah, Negeri Sembilan

³Pusat Pengajian Kimia dan Alam Sekitar (PPKAS), Fakulti Sains Gunaan, Universiti Teknologi MARA, Cawangan Negeri Sembilan, Kampus Kuala Pilah, Negeri Sembilan

*Corresponding author: tuannorhafizah@uitm.edu.my

ABSTRACT

The evaluation process in innovation competitions, such as the Konvensyen Kumpulan Inovatif & Kreatif (KIK), traditionally involves manual score tabulation, ranking, and reporting. These manual processes can be time-consuming, prone to human error, and inefficient, especially in large-scale events. KIK SmartJury is a web-based automated scoring system developed to address these challenges for the UiTM Zon Selatan KIK Convention 2024. The system enables judges to input scores online, with dynamic, real-time calculation of results and automatic assignment of winners in each category and for the overall competition. Developed using Python (Flask) as the backend framework, HTML, CSS, and JavaScripted for the frontend and utilizing MySQL for database management, KIK SmartJury streamlines the judging process, generates comprehensive scoring reports, and enables direct export to PDF or Excel. By implementing the System Development Life Cycle (SDLC) methodology, the system was designed with iterative feedback and refinement, ensuring reliability and usability. KIK SmartJury represents a novel solution within UiTM, as no other branch has implemented a similar automated judging system for KIK events. This innovation has the potential for adoption across other UiTM branches and commercialisation for broader applications.

Keywords – automated scoring system, real-time calculation, system development, innovation competition

INTRODUCTION

Automated scoring systems for competitions and educational assessments have gained prominence due to their efficiency and objectivity compared to manual grading (Sijuan Xue et al., 2024). The adoption of automated scoring in high-stakes assessments has enabled the implementation of more complex performance tasks without increasing the need for human raters (Foltz et al., 2020). The Konvensyen Kumpulan Inovatif & Kreatif (KIK) is a platform for showcasing innovation and creativity, where accurate, efficient, and transparent judging is critical. Conventional judging methods rely on manual score sheets, separate calculations, and physical reporting, often leading to delays, inconsistencies, and administrative burden. The increasing demand for efficiency, accuracy, and real-time

results in such competitions calls for a technological solution that can modernise the scoring process. In addition, KIK judging is conducted in a fast-paced manner, where scoring and winner announcements must be completed immediately after all participants present their projects. Therefore, a highly efficient system is required to ensure seamless operations. In response, the KIK SmartJury system was developed for UiTM Zon Selatan 2024 to digitise and automate judging tasks, ensuring smooth operations for both judges and the organising committee.

OBJECTIVE

The main objective of KIK SmartJury is to provide judges with an online platform for entering scores in real time. Other objectives are to perform dynamic, automated calculation of scores without manual intervention, to automatically determine winners for each category and overall ranking, to generate comprehensive scoring reports in PDF and Excel formats, eliminating the need for manual report preparation and to reduce administrative workload and enhance transparency in the judging process.

DESCRIPTION OF THE PROJECT

KIK SmartJury is a web application designed with a responsive and user-friendly interface to ensure accessibility across devices. The system architecture integrates the backend (Python Flask for application logic and MySQL for secure database management), and frontend (HTML, CSS, and JavaScript for an intuitive and responsive interface). KIK SmartJury was developed using the System Development Life Cycle (SDLC), including planning, analysis, design, development, testing, and evaluation stages. During operation, judges log in and enter scores per criterion for each project. The system performs dynamic real-time calculations, instantly updating total scores. Once judging is completed, KIK SmartJury automatically determines winners for each category and the overall champion. Additionally, it generates and prints complete scoring documents, including the individual judge scoring sheets, consolidated scores, and ranking summaries.

An integrated export feature allows all reports to be downloaded in PDF format, and a built-in filter function enables users to quickly filter and view specific documents based on project category. This automation eliminates the need for manual compilation, saving significant time and effort for the judging and organising committees. Figure 1 depicts the main interfaces of KIK SmartJury.

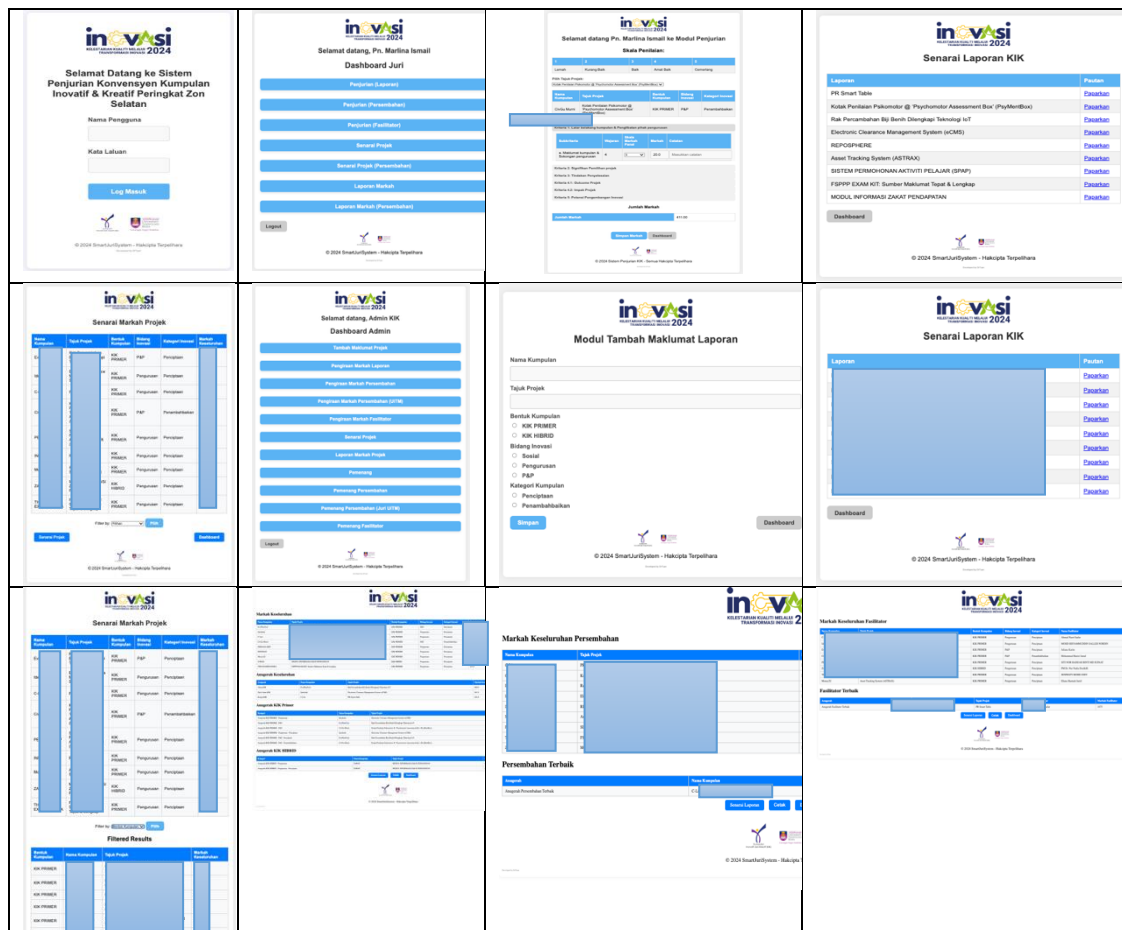


Figure 1: The main interfaces of KIK SmartJury

NOVELTY

KIK SmartJury introduces several unique elements that distinguish it from existing judging systems within UiTM:

1. Real-time score computation: Scores are calculated dynamically as judges input them, eliminating manual tabulation.
2. Automatic winner assignment: The system determines category winners and the overall champion without manual processing.
3. Integrated reporting: Instant generation of complete scoring reports with PDF and Excel export capabilities.
4. Scalability: Designed for potential adaptation to other UiTM branches or commercial use in different competition settings.

CONCLUSION

KIK SmartJury transforms the judging process for innovation competitions by replacing manual calculations with a fully automated, real-time scoring and reporting system. Its deployment for the UiTM Zon Selatan KIK Convention 2024 demonstrates its potential to enhance efficiency, transparency, and accuracy in event evaluation. As the first system of its kind within UiTM, it sets a precedent for modernising judging processes across

branches. The system's scalability, combined with its unique real-time calculation and reporting features, positions KIK SmartJury as a valuable innovation with both institutional and commercial potential. Future enhancements may include integration with live event displays, AI-assisted scoring analytics, and mobile app functionality for even greater accessibility.

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