E-PROCEEDINGS

INTERNATIONAL TINKER INNOVATION & ENTREPRENEURSHIP CHALLENGE (i-TIEC 2025)

"Fostering a Culture of Innovation and Entrepreneurial Excellence"

23 January 2025
PTDI, UiTM Cawangan Johor
Kampus Pasir Gudang

ORGANIZED BY:

Electrical Engineering Studies, College of Engineering
Universiti Teknologi MARA (UiTM) Cawangan Johor
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PREFACE

It is with great pleasure that we present the e-proceedings of International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), which compiles the extended abstracts submitted to the International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), held on 23 January 2025 at **PTDI, Universiti Teknologi MARA (UiTM) Cawangan Johor, Kampus Pasir Gudang.** This publication serves as a valuable resource, showcasing the intellectual contributions on the invention and innovation among students, academics, researchers, and professionals.

The International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), organized under the theme "Fostering a Culture of Innovation and Entrepreneurial Excellence," is designed to inspire participants at various academic levels, from secondary students to higher education students and professionals. The competition emphasizes both innovation and entrepreneurship, encouraging the development of product prototypes that address real-world problems and have clear commercialization potential. By focusing on technological and social innovations, i-TIEC 2025 highlights the importance of turning creative ideas into viable, market-ready solutions that can benefit users and society. The extended abstracts in this e-proceedings book showcase the diverse perspectives and depth of research presented during the event, reflecting the strong entrepreneurial element at its core.

We extend our sincere gratitude to the contributors for their dedication in sharing their innovation and the organizing committee for their hard work in ensuring the success of the event and this publication. We also appreciate the support of our collaborators; Mass Rapid Transit Corporation Sdn. Bhd. (MRT Corp), Universitas Labuhanbatu, Indonesia (ULB), Universitas Riau Kepulauan, Indonesia (UNRIKA) and IEEE Young Professionals Malaysia, whose contributions have been instrumental in making this event and publication possible.

We hope that this e-proceedings book will serve as a valuable reference for researchers, educators, and practitioners, inspiring further studies and collaborations in both innovation and entrepreneurship. May the knowledge shared here continue to spark new ideas and market-ready solutions, advancing our collective expertise and fostering the growth of entrepreneurial ventures.

B-ST010 - B-ST152

B-ST010: INDEPENDENT VARIABLES COMBINATION SELECTION USING BEST SUBSET SELECTION METHOD IN A MULTIPLE LINEAR REGRESSION BASELINE ENERGY MODEL FOR EDUCATIONAL BUILDING'S ENERGY CONSUMPTION PREDICTION 440

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B-ST030: EVENT CHECK-IN WEB APPLICATION (WEBAPP)

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ABSTRACT

A web application (WebApp) is a QR code-based mobile solution designed to streamline the check-in process for attendees at onsite or hybrid events. It simplifies event management by efficiently handling guest lists, seating arrangements, award details, and event information, allowing quick self-check-ins that reduce wait times and eliminate long queues. With features like contactless QR code check-ins, real-time attendance tracking, and integrated event details, the WebApp enables organizers to monitor attendee arrivals, prevent unauthorized access, and ensure smooth operations. Its versatility makes it ideal for various events, such as convocations, exhibitions, award ceremonies, and conferences, easily adapting to different formats. The WebApp also promotes environmental sustainability through paperless practices while offering event branding opportunities, enriching the experience for both attendees and organizers. Additionally, it creates new opportunities for startups and businesses in event management by integrating advanced technology, driving economic growth across both public and private sectors, including communities, institutions, and industries. With strong commercialization potential, this innovative solution is designed to meet the evolving needs of event organizers, offering scalability and adaptability to accommodate events of all scales and formats and ensuring it can be deployed globally across industries like corporate events, exhibitions, and entertainment.

Keywords: Web Application, Event Management System, Event Check-in System.

1. Product Description

The developed WebApp is a fully web-based system that manages attendee data, seating arrangements, award lists, and event information, ensuring smooth event operations. Compatible with iOS and Android, the WebApp enhances convenience and accessibility by allowing users to check in easily via smartphones or tablets, simplifying event management for organizers and attendees. The system's proven effectiveness empowers event organizers to plan and manage event flow efficiently. The WebApp enables real-time monitoring of check-ins, data updates, and issue resolution. Features like QR code-based scanning speed up the check-in process, while organizers benefit from immediate updates on attendee arrivals until post-event feedback. Additionally, the system improves data accuracy by reducing manual entry errors and centralizing attendee information. **Figure 1** illustrates the process flow, starting with data collection, database management, and WebApp development, followed by QR code scanning, attendee and event information display, guest satisfaction ratings, and real-time attendee monitoring. **Figure 2** showcases the mobile user interface (UI), guest information, and seating arrangements, including a detailed seating

layout, event details such as the program book, guest satisfaction ratings and embedded event information for the short video contest.

2. Process Flow and Screenshots

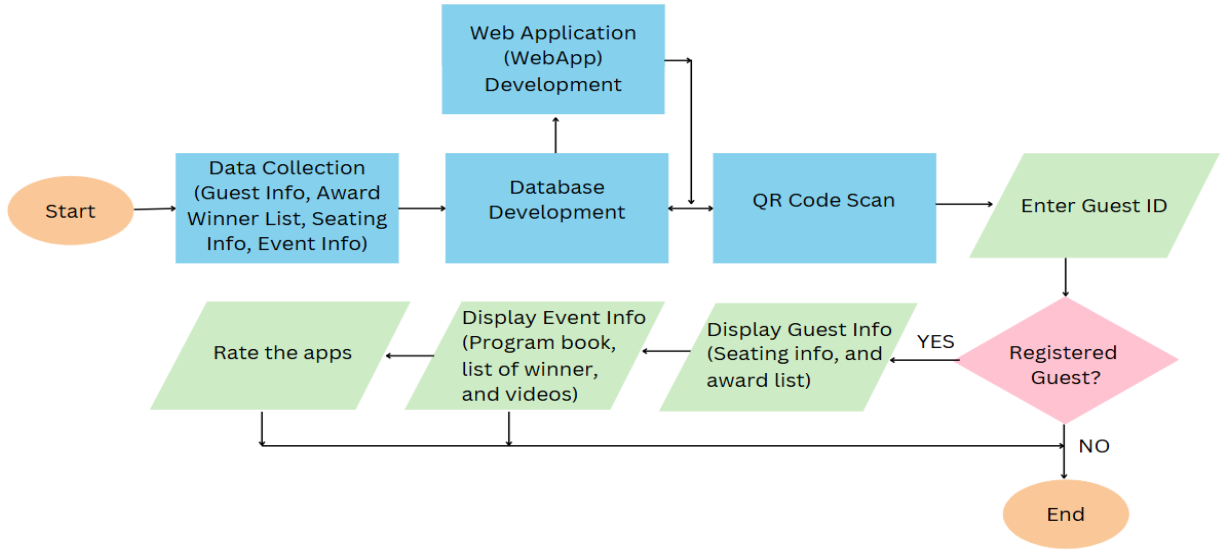
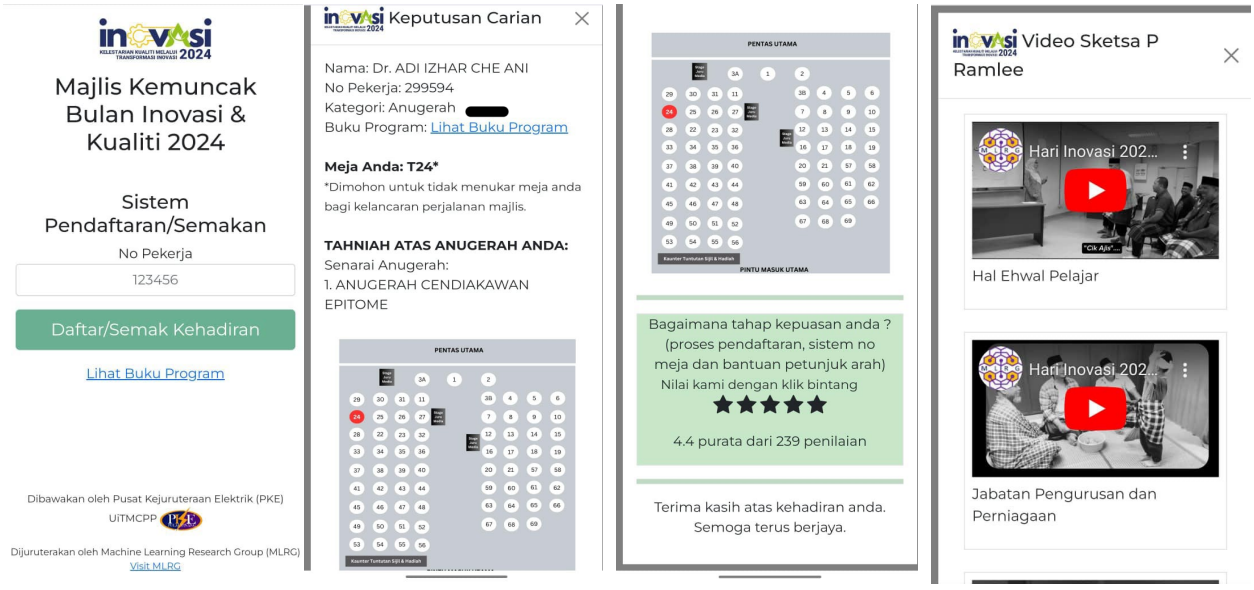


Figure 1. Event Check-in WebApp Process Flow



(a) (b) (c) (d)

Figure 2. Mobile User Interface (UI) of Event Check-in WebApp; (a) Main Page; (b) Guest, Seating and Event Information; (c) Guest Satisfaction Rating; and (d) Embedded Event Information

3. Novelty and uniqueness

The uniqueness of this project lies in its innovative approach to revolutionizing the event management industry. Unlike traditional methods, which can be cumbersome and time-consuming for organizers handling guest entry manually, this WebApp simplifies the entire process, overcoming the challenges of attendee tracking and ensuring smooth event operations. Traditional systems often result in long queues and congested registration areas, causing considerable inconvenience and inefficiencies for organizers and guests. A reliable and well-organized event check-in system lays the foundation for a successful event, enhancing the guest experience, boosting future attendance, and fostering stronger relationships with attendees. By replacing outdated practices, this WebApp empowers organizers to manage events efficiently while providing flexibility to adapt to their unique requirements. Its customizable and scalable features support continuous improvement, providing a dynamic, adaptable solution that evolves with the changing demands of event managers, ensuring a seamless and successful experience for all involved.

4. Benefit to mankind

An event check-in WebApp, designed for iOS and Android, simplifies event management for organizers and attendees, offering significant societal benefits. The WebApp enhances convenience and accessibility, allowing users to check in via smartphones or tablets, reducing delays and improving event flow. Real-time monitoring features enable organizers to manage events effectively, ensuring smooth operations and timely issue resolution. QR code-based scanning accelerates check-ins, minimizing wait times and improving crowd control, leading to a better overall experience. The WebApp boosts efficiency with real-time updates on attendee arrivals and promotes accuracy by minimizing manual errors and centralizing data. Additionally, the paperless system reduces staffing needs, cuts costs, and lowers environmental impact, supporting sustainability. By streamlining operations and improving experiences for both attendees and organizers, the WebApp offers a modern solution that makes event management more efficient, accessible, and sustainable, benefiting both individuals and the broader community.

5. Innovation and Entrepreneurial Impact

This WebApp drives innovation by leveraging advanced Google Products to overcome the challenges of traditional event management methods. By providing real-time solutions, it streamlines event workflows and significantly enhances event management efficiency. Its entrepreneurial impact is profound, offering a scalable, customizable solution that can be commercialized to empower event organizers in planning and executing events seamlessly—such as convocations, exhibitions, dinners, award ceremonies, conferences, competitions, seminars and more. The WebApp creates new opportunities for startups and businesses specializing in event management by integrating mobile technology and fostering economic growth across public and private sectors, including communities, institutions, and industries. It revolutionized how events are organized and executed, championing a culture of entrepreneurship and innovation.

6. Potential commercialization

The proposed event check-in WebApp holds significant potential for commercialization across various sectors. With its ability to optimize efficiency, improve data accuracy, and reduce costs, it is a highly marketable solution for event organizers. The WebApp's real-time updates and customizable features make it adaptable to the unique needs of different events, from conferences to festivals. Its scalability ensures it can be deployed globally, serving corporate events, exhibitions, and entertainment industries. This versatility provides a convenient, accessible, and cost-effective solution for event management, appealing to a wide range of potential customers. By capitalizing on these advantages, the WebApp streamlines operations and enhances the overall experience for both organizers and attendees, positioning it as a game-changer in the event management space. This creates long-term opportunities for growth and innovation, making WebApp an attractive commercial asset for the future.

7. Acknowledgment

We sincerely acknowledge the support and contributions of the Machine Learning Research Group (MLRG) at the Electrical Engineering Department, Universiti Teknologi MARA, Cawangan Pulau Pinang. Their expertise and guidance have been invaluable in advancing this project.

8. Authors' Biography

Dr. Adi Izhar Che Ani is a Senior Lecturer and Researcher at the UiTM, specializing in Web Application and machine learning applications. With over 15 years of experience, he has pioneered methods for various Web Application for faculty UiTM Pulau Pinang and government agency. His work bridges academia and industry with numerous high-impact publications and awards.

Norsabrina Sihab is a Senior Lecturer at UiTM Cawangan Pulau Pinang, with electronics engineering and outcome-based education expertise. With over two decades of experience, she has spearheaded numerous innovative projects aimed at enhancing teaching and learning methodologies. Her dedication to improving the higher education implementation is reflected in her publications in academic journals.

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