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E-PROCEEDINGS

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

"Fostering a Culture of Innovation and Entrepreneurial Excellence"



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23 January 2025
PTDI, UiTM Cawangan Johor
Kampus Pasir Gudang

ORGANIZED BY:

Electrical Engineering Studies, College of Engineering
Universiti Teknologi MARA (UiTM) Cawangan Johor
Kampus Pasir Gudang

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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.

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B-SS070: SERVE & SOLVE : ENHANCING SERVER SKILLS THROUGH INTERACTIVE LEARNING

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ABSTRACT

Serve & Solve is an innovative app designed to revolutionize hospitality training through interactive and gamified learning. It addresses the limitations of traditional training methods by simulating real-world restaurant scenarios, enabling users to practice critical skills such as communication, problem-solving, and customer service in a dynamic environment. The app was developed to bridge the gap between theoretical knowledge and practical application, offering a hands-on, engaging, and accessible solution for students and professionals in the hospitality sector. Key features of Serve & Solve include role-playing exercises, real-time feedback, gamified rewards to boost engagement, and integrated customer psychology insights. These unique elements ensure comprehensive learning while fostering confidence and adaptability. The app's design prioritizes accessibility, making it available on both web and mobile platforms to cater to a broad user base. Serve & Solve socio-economic impact is profound, preparing a skilled workforce ready to meet the demands of a competitive hospitality industry. By enhancing customer service standards, it contributes to improved workplace efficiency and customer satisfaction. The app's commercialization potential is vast, targeting hospitality schools, training programs, and businesses through subscription models and corporate partnerships. Serve & Solve stands out as a forward-thinking solution that nurtures innovation, professionalism, and entrepreneurship within the hospitality community and beyond.

Keywords: Interactive Training, Hospitality Innovation, Gamified Learning, Customer Service Skills, Restaurant Service

1. Product Description

Serve & Solve is an innovative app designed to train students in customer service by blending interactive role-playing with real-world scenarios. Specifically tailored for aspiring hospitality professionals and restaurant management students, Serve & Solve equips users with the skills and confidence needed to excel in customer service. The app simulates everyday challenges in the restaurant industry, such as managing overbooked tables, resolving customer complaints, handling food allergies, and addressing service errors like late food delivery or incorrect orders. Users navigate these scenarios by selecting response options, receiving instant feedback, and earning points to track progress.

Serve & Solve goes beyond technical training by incorporating customer psychology insights, effective communication strategies, and best practices for conflict resolution. The gamified experience ensures learning remains engaging, while immediate feedback fosters improvement and readiness. Available on both web and mobile platforms, Serve & Solve is designed with user-friendliness and accessibility in mind. The process path for creating the Serve & Solve app is shown in **Figure 1**. This tool bridges the gap between theory and practice, making it an invaluable resource for hospitality training programs and individuals eager to provide exceptional service. By engaging in Serve & Solve, role-playing exercises, users can practice critical skills such as effective communication, conflict resolution, and decision-making. transform your service skills, enhance problem-solving abilities, and be prepared to handle any restaurant scenario with confidence and professionalism.

2. Product Model

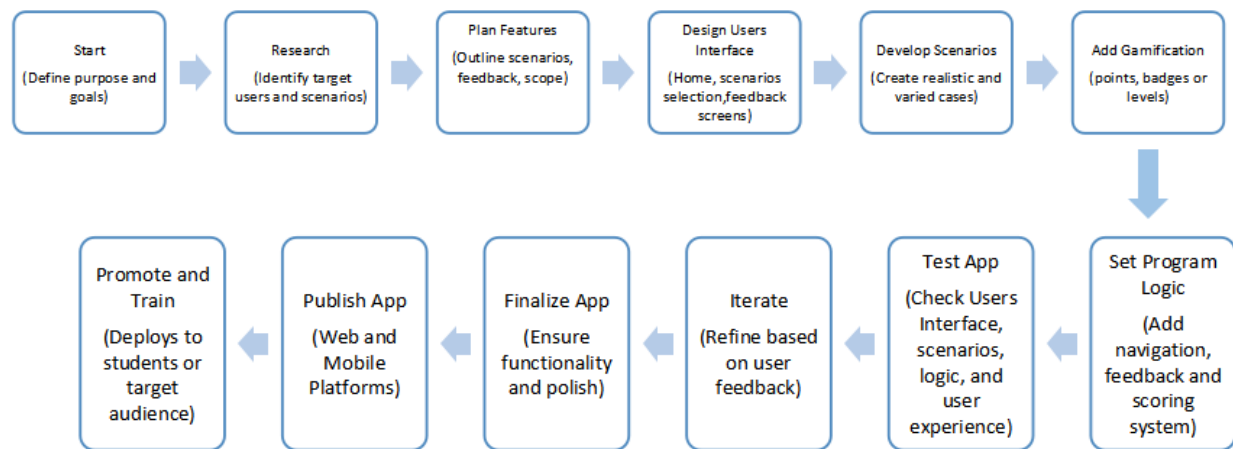


Figure 1. Process to Build the Serve & Solve App

3. Novelty and uniqueness

Serve & Solve stands out as a groundbreaking app in the field of hospitality training by offering an immersive and gamified learning experience tailored to real-world restaurant scenarios. Unlike conventional training methods, Serve & Solve integrates role-playing with dynamic problem-solving exercises, simulating everyday challenges such as handling customer complaints, managing reservations, and addressing service mishaps. What sets Serve & Solve apart is its focus on active learning through interactive scenarios, offering users immediate feedback and actionable insights to refine their skills. This real-time guidance bridges the gap between theoretical knowledge and practical application, ensuring users are not only prepared but also confident in handling complex customer service situations. The app also incorporates unique elements like customer psychology insights and service etiquette tips, providing a holistic approach to hospitality training. Its gamified structure, where users earn points for effective responses, fosters motivation and engagement, making learning both fun and impactful. Serve & Solve accessibility on both web

and mobile platforms ensures it is readily available for diverse users, from students to professionals. By merging technology, education, and gamification, Serve & Solve redefines how hospitality training is delivered, offering a novel solution that prepares future restaurant staff to excel in a competitive and fast-paced industry.

4. Benefit to mankind

Serve & Solve is a transformative tool that empowers students, particularly those in hospitality and restaurant management, with essential skills for real-world success. By simulating realistic customer service scenarios, the app enables users to develop critical thinking, problem-solving, and communication abilities. For students, Serve & Solve bridges the gap between classroom learning and workplace demands, providing a practical, hands-on approach to mastering customer interactions. The gamified experience ensures an engaging and motivating learning process, fostering confidence and readiness to handle challenging situations such as resolving complaints or managing reservations.

Beyond education, Serve & Solve contributes to the broader community by promoting exceptional service standards. By preparing students to excel in customer-focused roles, it indirectly enhances customer satisfaction, reduces workplace stress, and fosters professionalism in the hospitality industry. Serve & Solve equips the next generation with tools to contribute meaningfully to a service-driven global economy.

5. Innovation and Entrepreneurial Impact

Serve & Solve promotes innovation by redefining hospitality training through technology and gamification, bridging the gap between theoretical learning and real-world application. Its interactive role-playing scenarios offer a novel approach to skill development, equipping users with critical problem-solving and decision-making abilities in a dynamic, engaging manner. The app fosters a culture of entrepreneurship by empowering students and trainees to think creatively and act decisively in handling real-world challenges. By instilling customer service excellence and operational adaptability, Serve & Solve prepares future hospitality professionals to innovate and lead in their field. Within institutions, Serve & Solve inspires collaborative learning and entrepreneurial mindsets, encouraging students to identify gaps in service delivery and propose innovative solutions. In the industry, it serves as a catalyst for professional growth, setting new standards for customer care. Serve & Solve transforms learners into confident, innovative individuals, ready to contribute meaningfully to the community and drive change in the hospitality sector.

6. Potential commercialization

Serve & Solve has immense commercialization potential as a versatile training tool for the hospitality industry, institutions, and individual learners. It can be marketed to hospitality and culinary schools, enabling them to offer innovative, practical training solutions.

Restaurants, cafes, and hotel chains can adopt Serve & Solve as part of their staff onboarding and professional development programs to enhance service quality and customer satisfaction. The app can also target individual learners, including students and professionals, through subscription-based models or tiered pricing for access to advanced scenarios and analytics. Partnerships with industry associations and certification programs

can further enhance its credibility and reach. Additionally, Serve & Solve gamification and analytics features provide value to organizations by tracking user performance and identifying areas for improvement, making it a scalable and sustainable product. With its unique blend of technology, education, and real-world application, Serve & Solve is poised to be a leading solution in hospitality training worldwide.

7. Acknowledgment

We would like to express our sincere gratitude to Universiti Teknologi MARA (UiTM) Pulau Pinang Branch for their support and encouragement in the development of the Serve & Solve app. A heartfelt thank you also goes to our dedicated team members for their hard work, creativity, and teamwork. Their efforts have been instrumental in bringing this innovative idea to life. Additionally, we acknowledge the minimal assistance provided by AI tools, which supported us in refining our ideas and enhancing the project's development process.

8. Authors' Biography



Hasniza Abdullah is a senior lecturer at the Faculty of Hotel and Tourism Management, UiTM Cawangan Pulau Pinang, serving since 2007. She holds a Master of Education from UTM, a Bachelor of Science in Hospitality Management from Iowa State University, and a Diploma in Hotel Management from UiTM. Her expertise includes tourism, hospitality, and consumer behavior. Hasniza's research explores service quality, customer satisfaction, and sustainability in hospitality. With numerous publications, she contributes to enhancing service innovation and preserving Malaysia's culinary heritage, playing a vital role in bridging traditional practices with modern hospitality trends.



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Syaidatul Salmah Nurbalqis Saiful is currently pursuing her Master's degree in Data Science at the Faculty of Computer Science and Information Technology, Universiti Malaya. With a passion for uncovering insights from data and leveraging technology to solve complex problems, she is dedicated to advancing her expertise in data analytics, machine learning, and artificial intelligence. Her academic journey reflects a strong commitment to staying at the forefront of the evolving field of data science.