UNIVERSITI TEKNOLOGI MARA

Public Interest Centre of Excellence

International Teaching Aid Competition 2023

Reconnoitering Innovative Ideas in Postnormal Times

iTAC 2023

iTAC 2023
INTERNATIONAL TEACHING AID COMPETITION
E-PROCEEDINGS

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PREFACE

iTAC or International Teaching Aid Competition 2023 was a venue for academicians, researchers, industries, junior and young inventors to showcase their innovative ideas not only in the teaching and learning sphere but also in other numerous disciplines of study. This competition was organised by the Special Interest Group, Public Interest Centre of Excellence (SIG PICE) UiTM Kedah Branch, Malaysia. Its main aim was to promote the production of innovative ideas among academicians, students and also the public at large.

In accordance with the theme "Reconnoitering Innovative Ideas in Post-normal Times", the development of novel ideas from the perspectives of interdisciplinary innovations is more compelling today, especially in the post-covid 19 times. Post-pandemic initiatives are the most relevant in the current world to adapt to new ways of doing things and all these surely require networking and collaboration. Rising to the occasion, iTAC 2023 has managed to attract more than 267 participations for all categories. The staggering number of submissions has proven the relevance of this competition to the academic world and beyond in urging the culture of innovating ideas.

iTAC 2023 committee would like to thank all creative participants for showcasing their innovative ideas with us. As expected in any competition, there will be those who win and those who lose. Congratulations to all the award recipients (Diamond, Gold, Silver and Bronze) for their winning entries. Those who did not make the cut this year can always improve and join us again later.

It is hoped that iTAC 2023 has been a worthy platform for all participating innovators who have shown ingenious efforts in their products and ideas. This compilation of extended abstracts published as iTAC 2023 E-Proceedings contains insights into what current researchers, both experienced and novice, find important and relevant in the post-normal times.

Best regards,

iTAC 2023 Committee
Special Interest Group, Public Interest Centre of Excellence (SIG PICE)
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SWIFTRENT: CAR RENTAL APPLICATION

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ABSTRACT

This abstract introduces innovative mobile applications designed to simplify the car rental process for travel agencies. These apps aim to enhance efficiency and convenience by providing a user-friendly platform for managing car rentals. With a comprehensive inventory of vehicles, travel agencies can quickly match client preferences with suitable options. One key feature is automated reservations, eliminating the need for time-consuming calls or paperwork. Real-time availability updates ensure accurate and timely bookings. Secure payment gateways enable hassle-free online transactions, with digital receipts and invoices for simplified billing. Additionally, GPS tracking and digital checklists allow agencies to monitor vehicle location and condition, ensuring accountability and quick response to issues or emergencies. These car rental apps streamline processes, enabling efficient reservation management and a seamless experience for clients. By leveraging technology, travel agencies can enhance their service

quality. With intuitive interfaces and reliable features, these apps revolutionize car rental operations for agencies and clients alike.

Keywords: car rental apps, travel agencies, efficiency, convenience, automated reservations.

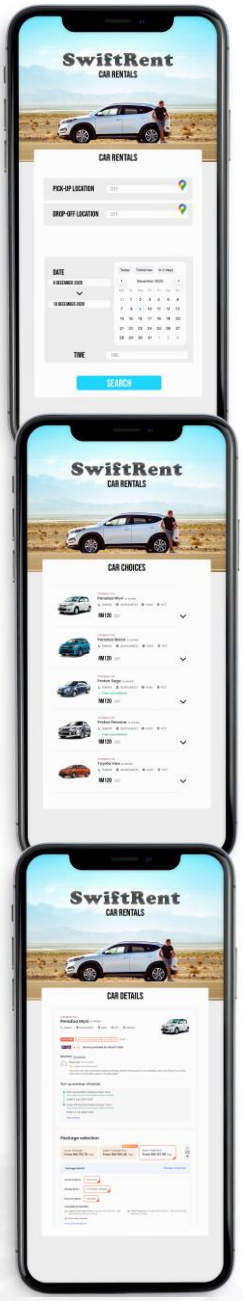
I.INTRODUCTION

It is well known that in this era of globalization and modernization, tourism has become one of the sectors that contributes to the global economy very rapidly and has a very positive impact on a country, especially the government that continues to support it to get income. The number of domestic and international tourists is increasing, in fact, some countries in the world are now developing the tourism sector as the main sector that generates national income. In addition, the tourism industry is expected to grow through digital tourism and will provide economic benefits to the people of a country. Tourism is also a sector that involves an interconnected role between the government, non-government and the general public (Salah Wahab and Cooper, 2003). In taking steps towards the use of digital tourism, it needs to have the goal of being accepted by local and foreign tourists. Therefore, for travel agencies, the use of websites, digital marketing and the sale of travel packages through online applications is also the company's choice. For example, the use of a reservation system or search for a rental car online for a travel agency that provides more convenient speed with suitable options.

II. PROBLEMS STATEMENT

Car rental companies in Malaysia often suffer from several persistent issues that undermine customer satisfaction and hinder their overall experience. The first problem revolves around price transparency, where customers frequently encounter hidden fees or unexpected additional charges that were not clearly communicated during the booking process. This lack of transparency not only causes financial distress for customers but also erodes trust in the rental company. Furthermore, another major concern is the subpar customer service exhibited by many rental companies, characterized by slow response times and difficulties in reaching customer support. This lack of effective communication channels leaves customers frustrated and unsupported when they encounter issues or need assistance during their rental period. Additionally, the overall process of renting a car in Malaysia poses numerous challenges for customers. Excessive paperwork requirements add unnecessary complexity and time consumption, impeding the efficiency of the rental process. Moreover, unclear drop-off locations can cause confusion and inconvenience, leading to delays and frustrations. Prolonged wait times, whether during pickup or drop-off, exacerbate customer dissatisfaction, as they waste valuable time and hinder travel plans. These ongoing problems hinder the car rental experience in Malaysia, emphasizing the need for rental companies to address these issues and improve their services to enhance customer satisfaction.

III. PRODUCT DESIGN



Main Page
Enter the location where you want to pick up the car, along with the desired dates and times for both the pickup and dropoff.

Car Choices Page
After entering the location and dates, the app will display a list of available cars for your chosen criteria. You can typically filter the results based on various factors like car type, size, transmission, price, and more. Browse through the options and select the car that suits your needs.

Car Details Page
View more details such as its features, specifications, rental rates, included amenities, and any additional charges or conditions.

Driver's Info Page
Need to fill driver's info such as photo of driver license, age, etc.

Payment Page
After verifying all the information, confirm your reservation and proceed to the payment stage. Enter your preferred payment method, such as credit card details or any other accepted payment options. Double-check the reservation summary and the total cost, including taxes and fees.

A. NOVELTY

Comprehensive Vehicle Inventory:
One key feature of these applications is the provision of a comprehensive vehicle inventory. Travel agencies can access a wide range of vehicles, enabling them to quickly match client preferences with suitable options. This feature enhances the selection process, leading to increased customer satisfaction and improved booking outcomes.

Automated Reservations:
Mobile applications streamline the reservation process through automated systems. Travel agencies can make bookings without the need for time-consuming phone calls or paperwork. By eliminating manual processes, these applications save time and effort for both travel agencies and clients, resulting in faster and more efficient reservation management.

Secure Payment Gateways:
To facilitate seamless online transactions, these applications integrate secure payment gateways. Travel agencies and clients can make payments securely, without the hassle of cash or physical credit card transactions. Digital receipts and invoices further simplify the billing process, enhancing transparency and reducing administrative burdens. Once the payment is processed, custmer will receive a confirmation message

within the app and email. It will include your reservation details, pickup location, and any specific instructions provided

GPS Tracking and Digital Checklists:

Another noteworthy feature of these applications is the inclusion of GPS tracking and digital checklists. Travel agencies can monitor the location and condition of rental vehicles in real-time, ensuring accountability and quick response to any issues or emergencies. This feature enhances safety, reduces risks, and improves customer confidence in the rental process.

B. USEFULNESS OF PRODUCT

The SwiftRent Car Rental application is incredibly useful for several reasons. Firstly, it streamlines procedures, providing efficient reservation management and a seamless customer experience. With just a few taps on their smartphones, users can easily book a vehicle, select pickup and drop-off locations, and even choose specific car models or features. This convenience saves time and eliminates the hassle of traditional rental processes. Secondly, the application empowers travel businesses to enhance the quality of their services by leveraging technology. The app's advanced features enable agencies to offer personalized recommendations, track vehicle availability in real time, and provide prompt customer support, resulting in improved customer satisfaction. Lastly, with their user-friendly interfaces and reliable functionality, these applications revolutionize automobile rental operations for both clients and agencies alike. Clients can effortlessly navigate through the app, manage their bookings, and access essential information, while agencies can efficiently manage their fleets, monitor rental activity, and optimize operations. Overall, the Swift Rent Car Rental application significantly enhances the rental experience, benefiting both customers and rental agencies.

IV. COST

Project Planning and Research:

Before embarking on app development, thorough planning and research are essential. This stage involves defining the app's scope, features, target audience, and conducting market analysis. It also includes identifying competitors, conducting user surveys, and creating wireframes or prototypes. The cost of project planning and research can range from RM4,000 to RM6,000, depending on the complexity of the app and the level of market research required.

Frontend Development:

Frontend development focuses on creating the client-side of the app, including the user interface, interactive elements, and integration with backend functionalities. It involves coding, testing, and optimizing the app for different platforms and devices. The cost of frontend development can range from RM4,000 to RM6,000, depending on the complexity of the design

and the number of platforms supported.

Backend Development:

The backend development of a car rental app involves building the server-side infrastructure, databases, APIs, and integrations necessary for the app's functionality. This stage also includes implementing security measures, user authentication, and data management. The cost of backend development typically ranges from RM4,000 to RM6,000, depending on the app's complexity and the development team's expertise.

Mobile App Development:

Car rental apps need to be available on multiple platforms, such as iOS and Android, to reach a broader user base. Developing apps for both platforms simultaneously requires additional time and resources. The cost of mobile app development varies based on the number of platforms and can range from RM7,000 to RM10,000.

Quality Assurance and Testing:

Thorough testing and quality assurance are vital to ensure the app's stability, security, and optimal performance. This includes functional testing, compatibility testing across different devices and operating systems, and bug fixing. The cost of quality assurance and testing typically amounts to 15-20% of the total development cost.
The total cost to develop a car rental app can vary depending on various factors such as the complexity of the app, desired features, design requirements, platforms supported, and the development team's expertise. However, as a rough estimate, the total cost to develop a car rental app can range from RM15,000 to RM 30,000 or more.

V. CONCLUSION

In conclusion, SWIFTRENT has had a significant impact on the tourism and travel agency sector. It provides travelers with a convenient and efficient way to rent cars, enhancing their exploration of new destinations. For travel agencies, the app offers a valuable tool to create comprehensive travel packages that include transportation services. The app's collaboration with car rental companies streamlines the process for group tours and organized itineraries. Furthermore, the app promotes eco-conscious travel by reducing the number of vehicles on the road. Overall, the car rental app has transformed the way people travel and how travel agencies operate, bringing convenience, sustainability, and collaboration to the tourism industry.

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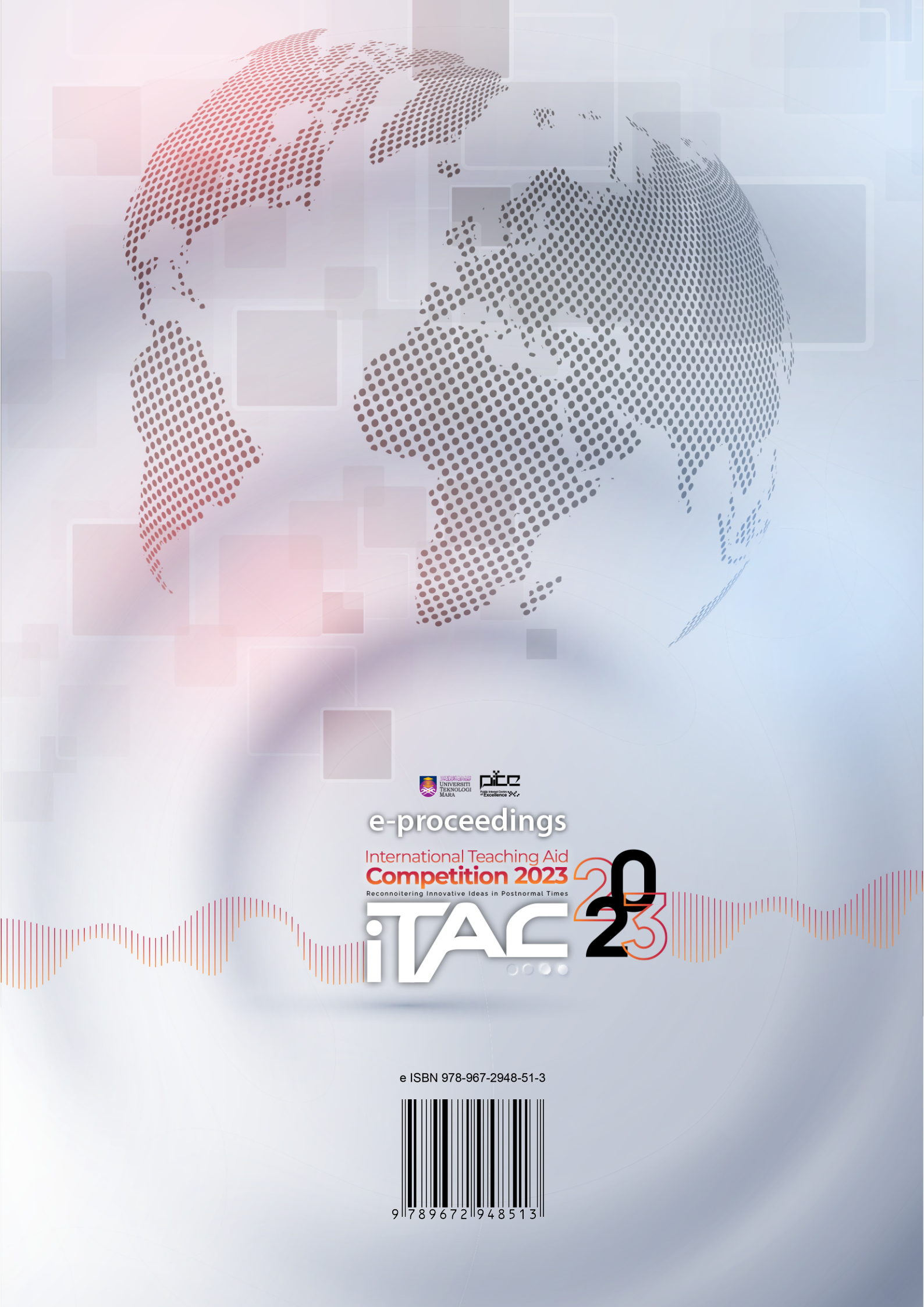

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