



An Agile-Scrum Approach to Enhancing Urban Transit through a Mobile-Based Motorcycle Parking System with OCR Integration

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Abstract—This study discusses the development of a mobile-based motorcycle storage application using the Agile Scrum method in the 359 Parking service in the Pondok Cina Station area. The application was developed to help manage vehicle storage digitally through storage location search features, vehicle reservations, and vehicle identification using Optical Character Recognition (OCR) technology. The system is built using Flutter and Firebase with the implementation of Google ML Kit OCR to help with the automatic scanning of vehicle license plates. Data collection was carried out through literature studies, interviews, and numerical scale forms on customers and motorcycle storage managers. System testing is carried out using the Black Box Testing method on the main features of the application. The test results show that the login, reservation, location search, and vehicle license plate scanning features can run according to the functional needs of the system. The implementation of OCR also helps reduce the manual recording process of vehicles, especially in adequate lighting conditions. In addition, user evaluation results show that the app helps simplify the process of finding a storage location and managing a vehicle. This study shows that the application of mobile technology, location services, and OCR can support the digitization of motorcycle storage services to be more effective and integrated.

Keywords: Software Development; Parking; Optical Character Recognition; Location Services; Agile Scrum

1. INTRODUCTION

Public transportation is one of the important elements in supporting community activities and mobility in urban areas, especially in the Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek) areas. Every day, around one million people use public transportation services as the main means of carrying out daily activities [1]. The high level of public transportation use shows that the transportation sector has a strategic role in supporting the social and economic activities of metropolitan communities. However, the high number of public transportation users is still accompanied by various obstacles, especially related to accessibility to mass transportation centers. Data shows that around 8.8 million people in Greater Jakarta are still experiencing obstacles in reaching public transportation nodes due to limited coverage of services and transportation infrastructure [2]. This condition shows the need to develop a more equitable, inclusive, and inclusive transportation system that is able to reach all regions optimally [3].

In Indonesia, motorcycles are the most widely used vehicles by the public with a percentage of 84.5% of the total active motor vehicles [4]. The high use of private vehicles, especially motorcycles, is increasing in the Greater Jakarta area due to changes in people's preferences who have switched from online transportation services to the use of private vehicles due to more affordable cost considerations [5] [6]. The increase in the number of vehicles has a direct impact on the high demand for parking spaces, especially in the central business area and the area around public transportation. The limited park and ride facilities cause public transportation users to have difficulty in obtaining safe and comfortable vehicle storage [7] [8]. In addition, suboptimal parking management also causes various other problems, such as traffic congestion and disruption of pedestrian accessibility in urban areas [9].

Problems related to parking are also influenced by user behavior in choosing a vehicle storage location. Research conducted by Huang et al. [10] shows that parking costs, walking distance, queue times, and parking capacity are some of the main factors that influence users' decisions in choosing parking facilities. The findings show that users tend to choose parking services that are able to provide convenience, ease of access, time efficiency, and certainty of parking availability. Therefore, effective and integrated management of parking facilities is one of the important factors in supporting community mobility while reducing the level of congestion in urban areas [11].

The development of information technology has encouraged the transformation of various conventional services into digital-based services. One example of the implementation of digital transformation in Indonesia is Gojek which has succeeded in transforming conventional transportation services into modern application-based digital services [12]. The application of this technology not only improves operational efficiency and service quality, but also changes people's behavior patterns in utilizing digital-based services in their daily activities. This phenomenon shows that digitalization has great potential in improving the effectiveness of services and user experience in various sectors, including vehicle storage services [13].

Currently, most motorcycle storage businesses around public transportation stations and stops still use conventional management systems. The process of recording vehicles entering and exiting is generally still carried out manually using notebooks or parking tickets, so it has the potential to cause recording errors and reduce operational efficiency [14]. In addition, users also often have difficulty finding alternative vehicle storage when the main parking location is full. This condition shows the need to implement technology-based solutions that are able to help manage vehicle storage more effectively, efficiently, and integrated.

Based on previous studies, it is known that parking and vehicle storage applications have provided various features to facilitate users, such as parking availability information, digital payment systems, booking history, and customer



service support. The study conducted by [2] revealed that marketing strategies and user behavior analysis play an important role in increasing the use of parking applications. However, the study also identified several issues, including difficulties experienced by users in obtaining parking slots quickly and the reluctance of potential users to download additional applications. Furthermore, the research by [3] explained that parking search applications already provide a relatively good user interface design and support digital payment methods, but still lack navigation features to guide users to available parking spots effectively. Meanwhile, the study conducted by [4] showed that web-based vehicle rental systems already support online booking and payment gateway integration, but are still limited to web platforms and do not provide communication or automatic notification features. Based on these studies, there is still a research gap in developing a mobile-based vehicle storage application that integrates reservation features, parking navigation, communication systems, automatic notifications, and operational reporting within a single platform.

In the development of technology-based systems, user needs are one of the main factors that determine the success of a product [15]. Parking service users generally consider several important aspects such as the availability of parking spaces, vehicle safety, ease of use of services, operational efficiency, and affordability. Therefore, this study uses the "How Might We" (HMW) approach to help identify user needs and problems more deeply. The approach is used to support a more user-oriented feature development process and help determine system development priorities systematically.

Based on these problems, this study developed a mobile-based motorcycle storage application that integrates location services and Optical Character Recognition (OCR) technology. The application is developed using the Flutter framework with the support of the Firebase backend service to support real-time data management. The implementation of OCR technology using Google ML Kit is used to help the process of automatically identifying vehicle license plates so that it can improve the accuracy of recording vehicles entering and exiting. In addition, the application is also equipped with an alternative search feature for motorcycle storage locations based on user location to help users find storage locations that are still available.

The Agile Scrum method is used in the application development process because it has high adaptability and flexibility to changing system needs [16]. The Agile approach allows the development process to be phased and iterative by involving user feedback in each development sprint. Thus, the developed system can be more easily adapted to the operational needs and actual needs of users. The use of the Agile Scrum method is considered appropriate for the development of motor custody applications that require a flexible and continuous development process.

This research focuses on the development of the Neat Tip application as a digital solution to support the accessibility of public transportation through the provision of safe, efficient, and integrated motorcycle storage services. In addition to providing convenience for public transportation users, this application is also expected to be able to support the digitization process of conventional motorcycle storage businesses so that it can improve operational efficiency and service quality. With the Neat Tip application, it is hoped that a more modern, effective, and sustainable urban mobility system will be created in the Greater Jakarta area.

2. RESEARCH METHODOLOGY

The research methodology for the development of a mobile-based motorcycle parking application incorporating geospatial services and Optical Character Recognition (OCR) is structured into a multi-phase framework centered on the Agile Scrum paradigm. As a framework designed to navigate volatile and complex requirements, Scrum facilitates the iterative delivery of high-quality products that align with specific user expectations through creative and productive workflow [17]. Furthermore, Scrum serves as a streamlined collaboration model that optimizes team efficiency when managing intricate software development projects [6]. Research by Anand and Dinakaran (2016) shows that the Agile method is significantly more successful than the Waterfall method. According to their findings, Agile projects have a 42% success rate, while Waterfall projects succeed only 14% of the time. This demonstrates that Agile's flexible approach is generally more effective for software development [18].

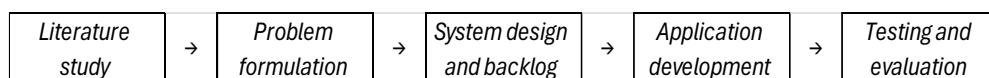


Figure 1. Research Workflow

As delineated in Figure 1, the architectural workflow comprises five critical stages: a comprehensive literature review, data requirement analysis, the Agile Scrum development lifecycle, rigorous system testing, and a final evaluative synthesis. This methodological approach prioritizes iterative refinement and technological integration, ensuring that the resulting system effectively addresses the complexities of urban parking management through evidence-based engineering.

2.1 Use Case Diagram

Unified Modeling Language (UML) serves as a standardized visual methodology for the architectural design of object-oriented systems [8]. Within this framework, Use Case Diagrams are utilized to delineate the functional boundaries of a system by mapping interactions between external actors and internal processes [9]. Use Case specifications provide the



necessary behavioral framework to validate user interface (UI) flows, ensuring that the visual navigation accurately reflects the system's functional requirements during the testing phase [17]. As noted by Murad (2013), these diagrams provide a dual-purpose perspective: they define the essential features required of the system while simultaneously articulating the user's functional requirements [19]. By identifying authorized access and available services, Use Case Diagrams establish a clear perspective on the system's properties and its operational scope.

2.2 How Might We

The How Might We (HMW) method is a design thinking technique used to reframe identified problems into actionable inquiries. This process involves categorizing user challenges to explore various dimensions of a problem, ensuring the resulting questions are conducive to the subsequent ideation and solution-generation phases [19]. By restructuring problems as questions, HMW fosters a solutions-oriented mindset, reinforcing the premise that every identified challenge is addressable through strategic design [20].

2.3 RICE Scoring Model

The RICE framework an acronym for Reach, Impact, Confidence, and Effort is a scoring model designed to prioritize project initiatives by quantifying their potential value. Originally developed by Sean McBride at Intercom, the model provides a structured approach to internal decision-making by balancing expected outcomes against the resources required [15]. The RICE scoring model enables product managers to quantify the relative value of features, facilitating an objective prioritization of the project backlog [16]. By standardizing how initiatives are evaluated, the framework replaces subjective intuition with a data-driven decision-making process.

$$RICE\ Score = \frac{Reach \times Impact \times Confidence}{Effort} \quad (1)$$

2.3.1 Reach

Reach refers to the estimated number of relevant users or operational activities that can be influenced by a particular feature within a specific time period. This factor is used to measure how broadly a proposed solution or functionality can affect target users or product segments associated with the system being developed.

2.3.2 Impact

Impact describes the extent to which a feature or idea contributes to achieving specific objectives for individual users or stakeholders. This factor evaluates the potential value generated by a feature, such as improving user experience, increasing operational efficiency, or encouraging users to continuously utilize the provided service over a longer period.

2.3.3 Confidence

Confidence represents the level of certainty associated with the estimated Reach, Impact, and Effort values. This factor is intended to reduce overly optimistic assessments by considering supporting evidence such as user research, testing results, experiments, and previous implementation experiences. In software development, confidence assessment also considers technical feasibility and implementation complexity during the estimation process.

2.3.4 Effort

Effort refers to the amount of resources, time, and technical work required to implement a particular feature or functionality. This factor includes contributions from multiple development divisions, such as product planning, system design, and software development teams. In the RICE model, higher effort values reduce the final prioritization score because more resources are required during implementation.

3. RESULT AND DISCUSSION

3.1 Solution Analysis

To address the identified operational and user-related problems, several solution features were proposed and prioritized for implementation in the Neat Tip application. Each feature was analyzed based on its strategic objective and technical implementation approach. The detailed ranking and analysis results are presented in Table 1.

Table 1. Identified Solutions and Ranks

Rank	Feature	Strategic Objective	Technical Implementation
1	Cashless Payments	Facilitate frictionless transactions.	Integration of e-money and digital wallet APIs.
2	Real-time Availability	Mitigate uncertainty in parking discovery.	Dynamic slot management and occupancy tracking.



Rank	Feature	Strategic Objective	Technical Implementation
3	Direct Communication	Improve service coordination.	In-app messaging for user-to-owner interactions.
4	Enhanced Security	Minimize liability and increase trust.	Integration of CCTV monitoring and security sensors.

3.2 Use Case Diagram

The functional requirements of the system are encapsulated in the Use Case Diagram (Figure 2), which delineates the primary interactions between the end-user and the administrative interface. To maintain the study's focus on high-level architectural integration, the system utilizes a centralized framework to optimize the parking lifecycle. This interconnected mobile ecosystem significantly reduces reliance on manual labor, allowing facility personnel to manage reservations with greater organizational precision. Furthermore, the application mitigates the risks associated with physical ticket loss by transitioning to an immutable digital record system, ensuring enhanced security and accountability for both the provider and the consumer.

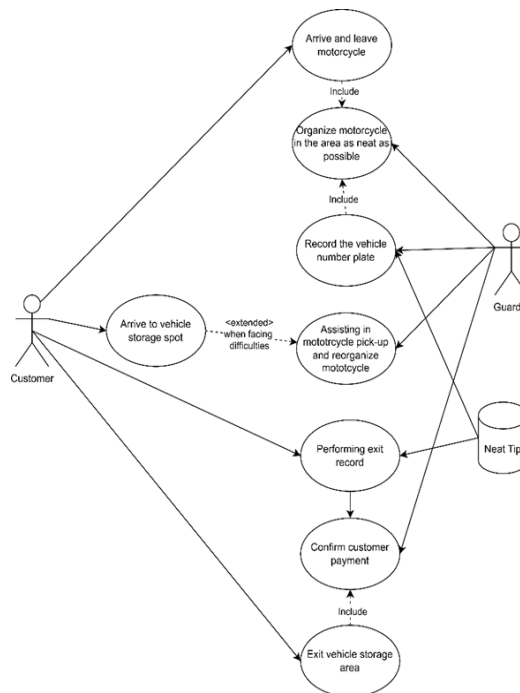


Figure 2. Use Case Diagram

Upon arrival at the transit hub, commuters may deposit their vehicles immediately, facilitating an efficient transition to public transport by eliminating the latency associated with manual ticketing. Following vehicle placement, the facility attendant utilizes the administrative interface to record the entry; this action triggers a real-time update to the centralized database. Consequently, synchronized data is concurrently accessible to both the service provider and the user, ensuring transparency and data integrity throughout the storage duration.

The retrieval process is characterized by a decoupled workflow designed to optimize throughput. While the attendant performs the physical retrieval of the motorcycle, the administrative check-out process is executed autonomously by the customer via the mobile interface. This decentralized approach minimizes administrative bottlenecks, requiring the attendant only to perform a final visual verification of the customer's digital confirmation screen before authorizing the exit.

3.3 Black-Box Testing

3.1 Customer App Test Result

The results of the customer application testing using the black-box method are presented in Table 2, which summarizes all test categories along with their success rates and statuses.

Table 2. Customer App Test Results

Test Category	Test Case	Success Rate	Status
Log in	Log in, show log in page	2/2	Success
Home	Show home page, reservation page, motorcycle page, scanning page, spot page	5/5	Success



Test Category	Test Case	Success Rate	Status
Vehicle	Vehicle informations, Vehicle registration, user registration	3/3	Success
Reservation	Active and finished registration information and details, open reservation details page, take registration, confirm reservation, review reservation summary	5/5	Success
Spot	Show maps and vehicle storage location, check maps responsivity, reload map and storage location based on user location, show storage spot information details, redirect to relevant app for further informations	5/5	Success
Scan	Direct camera through photo frame, take a picture, retake a picture, flash button	4/4	Success
Profile	Show account profile picture and name, log out/sign out	2/2	Success

3.2 Guard App Test Results

The testing results for the Guard App are presented in Table 3, including the test categories, test cases, success rates, and status.

Table 3. Guard App Test Results

Test Category	Test Case	Success Rate	Status
Log in	Log in, show log in page	2/2	Success
Home	Show home page, reservation page, active reservation button, scanning page, spot page	5/5	Success
Edit Spot	Change spot picture, take a picture, form filling, extract point from the app map, prev button, yes (save) button	6/6	Success
Reservation	Active and finished registration information and details, open reservation details page, confirm reservation, review reservation summary	4/4	Success
Scan	Direct camera through photo frame, confirm button, deactivate check-in status, ask guard to scan number plate, take number plate picture, retake number plate picture, redirect to confirm reservation page, flash button	7/7	Success
Profile	Show account profile picture and name, log out/sign out	2/2	Success

3.4 Discussion

Based on the research findings and system development process, the implementation of the Agile Scrum method in the Neat Tip motorcycle parking application proved to support gradual and structured system development. System requirements were gathered through literature studies, questionnaires distributed to customers, and direct interviews with parking attendants to obtain a balanced understanding of problems from both user perspectives. Customers emphasized service convenience, payment flexibility, vehicle security, and parking availability information, while parking attendants focused on operational efficiency, vehicle recording, reporting, and parking area management.

The identified problems were then analyzed using the How Might We (HMW) approach to generate more solution-oriented ideas. Furthermore, feature priorities were determined using the RICE method based on Reach, Impact, Confidence, and Effort aspects. From this process, four main priorities were identified, namely cashless payment, real-time parking availability information, direct communication, and enhanced security. Real-time parking availability received the highest priority because it was considered the most relevant to user needs when searching for available parking locations. The findings revealed that customers and parking attendants experienced different yet interconnected challenges. Customers frequently faced uncertainty regarding parking availability, limitations of cash-based payments, and concerns about vehicle security. Meanwhile, parking attendants encountered issues related to parking capacity, inconsistent manual records, payment verification difficulties, and manual reporting coordination. Based on these conditions, the system was developed into two interconnected applications: Neat Tip for customers and Neat Tip Niaga for parking attendants.

The Neat Tip application was developed to support customer needs such as account login, vehicle registration, parking location discovery, reservation services, reservation tracking, map-based navigation, and OCR-based license plate scanning. Meanwhile, the Neat Tip Niaga application focused on operational needs such as parking spot management, reservation monitoring, vehicle verification, and OCR-assisted vehicle logging. Separating the applications helped reduce interface complexity and align the system with the workflow of each user group. The implementation of Google Maps API provided significant contributions in displaying parking locations, user navigation, and real-time parking spot information. This feature helped users locate nearby parking areas and reduced the need for manual parking searches. In addition, the use of Google ML Kit for OCR accelerated the process of recording vehicles during entry and exit, thereby reducing the risk of manual recording errors. The Agile Scrum process was carried out through several sprints that enabled gradual feature development. In the customer application, early sprints focused on login pages, parking spot exploration, and reservation details. Subsequent sprints continued the development of license plate scanning, vehicle registration,



parking spot details, reservation lists, and confirmation pages after OCR processing. Meanwhile, the parking attendant application focused on parking spot management, reservation monitoring, and vehicle scanning features. This process demonstrated that development was performed iteratively with continuous backlog refinement in every sprint.

The sprint backlog results for the customer application showed that development was completed gradually over seven sprints. In Sprint 1, the login page was successfully completed, while the Explore Spot and reservation detail features were still under development due to integration with Google Maps API. Sprint 2 and Sprint 3 focused on developing license plate scanning, home pages, vehicle lists, and vehicle addition features. OCR became one of the most technically demanding features because it required device camera integration and Google ML Kit configuration.

During Sprint 4 to Sprint 6, most backlogs were successfully completed, including vehicle lists, parking spot details, reservation lists, and reservation confirmation features. Finally, in Sprint 7, all customer application backlogs were completed, including post-detection information pages, user profiles, and login pages. These results indicate that the Scrum method effectively supported the development team in completing application features gradually until all primary system requirements were fulfilled.

Based on the black-box testing results, all major features in both customer and parking attendant applications functioned as intended. The testing covered login functionality, navigation, reservations, vehicle management, location services, OCR, parking spot management, and reservation monitoring. This indicates that the system fulfilled its functional requirements and operated according to the designed workflow. However, the study still had limitations, including the absence of cashless payment implementation, the lack of long-term field testing, and OCR performance dependence on lighting conditions and camera quality. Overall, this study demonstrates that the implementation of Agile Scrum and the integration of technologies such as Google Maps API and OCR can improve motorcycle parking service efficiency for both customers and parking operators. The developed system successfully provided solutions for parking discovery, vehicle recording, and reservation management in a more structured and modern manner. For future development, the system is recommended to include cashless payment integration, a parking owner dashboard, CCTV-based security enhancements, and long-term real-world testing.

3.4.1 System Architecture Analysis

The system architecture was designed to support modular interaction between customer-side services and operator-side management tools. This modularity improves maintainability and allows future feature expansion without significantly affecting the existing workflow. The architecture also supports centralized synchronization of reservation records, parking availability information, and OCR-based verification results. By utilizing a shared backend structure, both applications can exchange information in near real time, improving operational coordination and reducing the likelihood of inconsistent records during busy operational periods.

3.4.2 User Experience Evaluation

From a usability perspective, the implementation of map-based visualization and simplified reservation flows contributed to a more intuitive customer experience. Users can identify nearby parking locations before arrival, reducing uncertainty and unnecessary circulation around transit hubs. Meanwhile, parking guards benefit from simplified monitoring interfaces that consolidate reservation and vehicle verification processes into a single operational workflow. This reduction in fragmented administrative tasks contributes to improved service consistency and reduced manual workload.

3.4.3 Operational Impact

The implementation of the Neat Tip system demonstrates the potential of digital transformation in small and medium-scale parking operations. Conventional parking services often experience inefficiencies caused by manual record keeping, communication delays, and limited transparency regarding parking occupancy. Through the integration of reservation systems, OCR-supported plate scanning, and synchronized reservation tracking, the proposed application establishes a more accountable operational environment. This contributes not only to service efficiency but also to greater customer trust and improved operational reporting.

3.4.4 Technology Integration Challenges

Despite the benefits introduced by the application, several technical challenges emerged during development and testing. OCR performance was influenced by camera angle, environmental lighting, and motion blur during plate capture. Similarly, map responsiveness depended on network stability and device performance. These challenges required iterative refinement throughout multiple Agile Scrum sprints, reinforcing the importance of adaptive development methodologies in mobile application projects involving external APIs and machine learning components.

4. CONCLUSION

A mobile-based motorcycle storage application with location services and Optical Character Recognition (OCR) has been created using the agile scrum method. In the formulation of the problem there are several points of how might we that have not been applied in this development, one of which is non-cash payments. The implementation of location services technology and OCR detectors using Google ML Kit can be implemented even though it has moderate difficulties due to



the limitations of documentation that supports development. The backend services of Firebase can be implemented as expected and can be integrated with Flutter applications. The result of the development is in the form of two applications that are used for both users, namely for a customer named Neat Tip, and for a guard named Neat Tip Niaga. The Agile Scrum method used ran for approximately two months to develop the two applications. After testing, the main features that support both applications to function have run as expected. Starting from each user logging in, scanning the motorcycle plate, viewing the list and reservation details, finding a place to store it, to exiting the application. However, the application may not address the solution outside of the sprint that has been designed.

REFERENCES

- [1] Jakarta Investment Forum, "Investing in Resilience: Jabodetabek Public Transportation Sector Report." Accessed: Mar. 15, 2023. [Online]. Available: <https://jakarta-investment-forum.com>
- [2] A. Amilia and I. Setiawan, "Usulan Strategi Pemasaran Untuk Fitur Baru Pengguna Mobil Pada Aplikasi Parkir – Studi Kasus Aplikasi Cariparkir," *J. DARMA AGUNG*, vol. 30, no. 3, pp. 25–35, 2022.
- [3] M. R. Arfianto, "Analisis Desain User Interface pada Aplikasi Pencari Parkir Mobil," *J. Desain Prod. dan Desain Komun. Vis.*, vol. 1, no. April, pp. 29–33, 2022, doi: <https://doi.org/10.36262/dpj.v1i1.589>.
- [4] I. Rinata and M. Ilmi, "Implementasi Layanan Payment Gateway Pada Sistem Informasi Sewa Kendaraan Cv. Berkah Rental Batam," *J. Teknol. Digit. DAN Sist. Inf.*, vol. 1, no. 1, pp. 1–11, 2025.
- [5] T. Monageng and B. M. Esiefarienrhe, "Analysis of Risk Assessment Framework Using Agile Methodology and Computer-Aided Software Engineering Tools," *Indones. J. Inf. Syst.*, vol. 8, no. 2, pp. 157–174, 2026.
- [6] Scrum.org, "What is Scrum?," [scrum.org](https://www.scrum.org/resources/what-is-scrum). Accessed: Mar. 15, 2024. [Online]. Available: <https://www.scrum.org/resources/what-is-scrum>
- [7] S. Khan and S. Mahadik, "A Comparative Study of Agile and Waterfall Software Development Methodologies," *Int. J. Adv. Res. Sci. Commun. Technol.*, vol. 2, no. 1, pp. 399–402, 2022, doi: 10.48175/IJARSC-5696.
- [8] M. Z. Abdullah and I. G. S. Pranata, "Analisis Dan Perancangan Sistem Informasi Manajemen Gereja Menggunakan Uml (Unified Modelling Language)," *J. Inform. Dan Tek. Elektro Terap.*, vol. 12, no. 3, p. 4831, 2024.
- [9] M. S. Pebriadi, P. Salman, and T. K. Fattah, "Implementasi Use Case Diagram Dan Activity Diagram Dalam Perancangan Aplikasi Kalkulator Pajak Bagi Umkm," *Multitek Indones. J. Ilm.*, vol. 6223, no. 1, pp. 44–58, 2023.
- [10] V. T. Huong, N. T. Chuong, and V. T. Tich, "Analysis Of Factors Affecting Vehicle Choice," *Transp. Commun. Sci. J.*, vol. 75, no. 01, pp. 1125–1139, 2024.
- [11] M. Alymani, L. A. Almoqhem, D. A. Alabdulwahab, A. A. Alghamdi, H. Alshahrani, and K. Raza, "Enabling smart parking for smart cities using Internet of Things (IoT) and machine learning," *PeerJ Comput. Sci.*, vol. 11, pp. 1–27, 2025, doi: 10.7717/PEERJ-CS.2544.
- [12] A. Mufflihah, B. Nugraha, and A. A. Ridha, "Perancangan User Interfacedan User Experienceaplikasi Toko Kue Berbasis Mobilemenggunakan Metode Design Thinking," *JIPI (Jurnal Ilm. Penelit. dan Pembelajaran Inform. Mhs. Tek. Inform.)*, vol. 6, no. 1, pp. 41–48, 2024, doi: 10.36423/index.v6i1.1698.
- [13] K. Al Mhairi *et al.*, "Agile Transformation on Capital Substation Projects," *Saudi J. Eng. Technol.*, vol. 10, no. 03, pp. 60–67, 2025, doi: 10.36348/sjet.2025.v10i03.003.
- [14] P. Prasetyawan, M. A. C. Aulia, N. S. Utami, and U. A. Ramadhani, "Automatic License Plate Recognition (ALPRON) Using Optical Character Recognition Method," *J. Appl. Informatics Comput.*, vol. 9, no. 3, pp. 1082–1087, 2025, doi: 10.30871/jaic.v9i3.9903.
- [15] ProductPlan, "RICE Scoring Model," [ProductPlan.com](https://www.productplan.com/glossary/rice-scoring-model/). Accessed: Jan. 30, 2026. [Online]. Available: <https://www.productplan.com/glossary/rice-scoring-model/>
- [16] Roadmunk, "What is the RICE Scoring Model?," [Roadmunk.com](https://roadmunk.com/guides/rice-scoring-prioritization-framework/). Accessed: Jan. 30, 2026. [Online]. Available: <https://roadmunk.com/guides/rice-scoring-prioritization-framework/>
- [17] G. F. Fitriana, "Pengujian Aplikasi Pengenalan Tulisan Tangan menggunakan Model Behaviour Use Case," *J. Tek. Inform. dan Sist. Inf.*, vol. 7, no. 2, pp. 200–213, 2020.
- [18] Aldo, A. Haris, and Hendri, "Perancangan Sistem Informasi Penjualan Berbasis Web Pada Toko Maju Jaya Keramik," *J. Manaj. Teknol. Dan Sist. Inf.*, vol. 5, no. 1, pp. 903–911, 2025, doi: 10.33998/jms.2025.5.1.2095.
- [19] V. K. Reynaldi and N. Setiyawati, "Perancangan Ui/Ux Fitur Mentor On Demand Menggunakan Metode Design Thinking Pada Platform Pendidikan Teknologi," *JIPI (Jurnal Ilm. Penelit. dan Pembelajaran Inform.)*, vol. 07, no. September, pp. 835–849, 2022.
- [20] L. D. Putra, A. Primajaya, and P. Kamal, "Penerapan Design Thinking Pada Perancangan UI/UX Aplikasi Pembelajaran Online Untuk Mengurangi Dampak Technostress," *INTECOMS J. Inf. Technol. Comput. Sci.*, vol. 5, no. 2, 2022.