Implementation of Geolocation and e-Payment Technology in the Location Booking Process to Increase Business Potential

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Abstract. Minisoccer Kramat Jaya is one of the sports venues located in South Bandung Regency that provides field rental services in various sizes. However, the current manual reservation system causes several problems, such as time-consuming booking processes, difficulties in monitoring field availability online, scheduling errors, and potential loss of transaction data. This study aims to develop a web-based field reservation application integrated with e-payment and geolocation technology to streamline the booking process, provide real-time field availability information, and assist administrators in managing schedules and protecting data. The methods used include observation, interviews, and questionnaires, with the system developed using the Waterfall model. Based on black box testing of 23 features, as well as external evaluation through interviews and questionnaires, the application functions well and meets the specified requirements. The application has been proven to speed up the reservation process to less than 10 minutes (91%), simplify access to field availability information (94%), and reduce the risk of scheduling conflicts and data loss. Furthermore, the integration of e-payment facilitates secure and convenient transactions, while geolocation enables the system to collect and analyze user data based on their registered addresses. The testing results show that geolocation technology works perfectly and provides valuable insights for business owners, enabling them to identify regional demand and strategically plan the opening of new mini soccer branches in areas with the highest booking volumes.

Keywords: Reservation, Minisoccer, e-payment, Geolocation, Business

1. Introduction

Sports play a crucial role in maintaining health and enhancing the quality of life in society. Health-oriented sports aim to improve physical well-being and are accessible to people of all ages and abilities (Baxtiyarovich et al, 2025). One of the increasingly popular sports among communities today is minisoccer (Rohmat et al, 2024). This sport offers a fun way to stay active and healthy. Minisoccer Kramat Jaya, located in South Bandung Regency, is one such venue that provides a range of field sizes and rental prices. The venue also offers a loyalty program through membership and reward points to enhance user satisfaction.

Despite its popularity, Minisoccer Kramat Jaya still faces operational challenges that affect service quality. Based on an interview conducted on October 18, 2024, with the manager, Nissa Fauzziah Habibaloh, the current booking system requires customers to visit the venue in person, which is time-consuming and inefficient, especially for those living far away (Tshering et al 2024). A survey of 30 past

customers indicated that 80% found the current booking process lengthy, often taking more than 15 minutes to reach the location and make a reservation.

In addition, customers face difficulties checking field availability online. According to the same survey, 80% of respondents reported problems in obtaining real-time information on field availability, as they had to either visit the location or call the management (N Siregara et al 2025). This lack of a real-time scheduling system makes it difficult for users to plan their playing time effectively (Ardani & Sani 2024).

Furthermore, manual scheduling management presents another issue. Any changes or cancellations are recorded by hand in a notebook, which often leads to recording errors and scheduling conflicts due to poor coordination among staff (Getuz & Wondemagnegn 2022). The handwritten schedule is also prone to becoming messy and difficult to read (Arikpo & Okokon 2018).

Another major concern is the security and reliability of transaction and booking data, as all information is recorded manually (Ardani & Sani 2024).. Data loss due to damage or misplacement of the booking book has been a recurring issue. According to the October 2024 interview with the venue manager, the absence of a backup system increases the risk of losing important data, ultimately disrupting operations (bin Jafridin & Salamat 2023). Thus, a technology-based solution is essential to enhance system reliability and data protection (shihab 2020).

Another problem faced is the difficulty for management in identifying the distribution of customer origins who have made field reservations. Based on an interview with the manager, Nissa Fauzziah Habibaloh of Minisoccer Kramat Jaya on October 20, 2024, customer address recording is still done manually using books or simple spreadsheets. This manual process makes analysis difficult because the data must be counted and grouped one by one, which is time-consuming and prone to errors. Customer location distribution data is very important for management as a basis for strategic decision-making, especially for future business development (Roig-Tierno et al 2013). By knowing which areas have the highest number of reservations, management can plan to open new fields in regions with high customer potential, thus optimizing business opportunities. The implementation of geolocation technology can help address these challenges by automatically storing and mapping customer address data based on their ID card address (Chavan et al 2025). This mapping result enables management to view customer distribution quickly, accurately, and in an easy-to-understand format, serving as an important evaluation tool as well as a strategic reference for business expansion (Pavani et al 2024; Tudor et al 2025).

Minisoccer is a variation of traditional football that has been modified for smaller-scale play. It involves reduced field dimensions, fewer players, and simplified rules, making it more adaptable to limited spaces and diverse player conditions. This sport is inclusive, accessible to all age groups, and promotes both physical and social benefits (Rohmat et al, 2024). The smaller field enhances ball interaction and technical skill development and offers a more intense playing experience. Its flexibility allows it to be played both indoors and outdoors, making it highly adaptable to modern environments (Aguiar et al 2012).

A reservation refers to the process of requesting goods or services before their actual use or delivery. It facilitates organized access to products or services, especially

in business transactions (Sarosa et al 2018). In general, a reservation is the act of pre-ordering a place, item, or service from a provider before its consumption (Rahmatya et al 2020).

A payment gateway is a service that enables secure online transactions by acting as a bridge between merchants, customers, and financial institutions, ensuring safe and efficient data exchange and payment verification through encryption and authentication mechanisms (Oo K 2019). The process begins when a customer submits payment information, which is transmitted to the gateway, then forwarded to a payment processor, and finally verified by the customer's bank before funds are transferred to the merchant's account (Veronica et al 2024; Lowry et al 2006).

Mapbox API is a cloud-based mapping platform that provides developers with flexible tools to create customizable and interactive maps for web and mobile applications. It utilizes open-source spatial data sources such as OpenStreetMap and NASA, enabling cost-effective development of geographic information systems without relying on fully paid mapping services. Mapbox offers advantages in customization, easy integration, and real-time spatial data availability, although it has limitations in advanced features such as detailed location information and routing (Hammad et al 2024; Hidayatullah et al 2024).

Midtrans API is a payment gateway solution designed to simplify online financial transactions by integrating multiple payment methods such as credit cards, bank transfers, e-wallets, and over-the-counter payments into websites or mobile applications. It acts as a secure intermediary between businesses and financial institutions, ensuring encrypted and reliable transaction processing. By providing an easy-to-use API, Midtrans enables developers to embed payment services seamlessly, improving efficiency and user experience in digital platforms. This technology has been successfully implemented in health applications such as Halodoc, supporting fast and safe payments while reducing queues and enhancing service accessibility for users (S Hasibuan et al 2024).

Geolocation refers to the process of identifying the geographic location of an Internet-connected device or user, typically through IP address mapping, network delay measurements, GPS signals, or Wi-Fi access point triangulation. It is widely applied in areas such as cybersecurity, fraud prevention, targeted content delivery, and emergency response systems. The study of geolocation databases highlights their importance in mapping IP addresses to physical locations, which is crucial for tasks like detecting cyberattacks, enabling localized advertising, and supporting location-based research. However, database accuracy varies significantly, with some systems providing city-level precision while others only achieve regional-level accuracy (Ahmad et al 2025). Active measurement techniques, such as delay-based triangulation, have been introduced to improve accuracy, but inconsistencies and database disagreements often remain, emphasizing the need for careful interpretation and cross-verification when using geolocation data (Shavitt & Zilberman 2011).

Geolocation is a technology that determines the real-time position of users through GPS data, enabling spatial coordination in digital applications. In the referenced study, this technology was implemented using Mapbox, a Geographic Information System (GIS) platform that converts GPS signals into geographic coordinates to track both

merchant and buyer locations in real-time. This allows for easier interaction and transaction facilitation between parties. Mapbox also offers routing features and demonstrated a relatively low error rate of 12.13%, making it a reliable tool for location-based services in web applications (Setiawan et al 2024).

This study implements geolocation and e-payment technologies to support the location booking process for business venues such as Minisoccer. By integrating these technologies, the system aims to streamline reservations, provide valuable regional user data, and enable seamless digital transactions. Through this implementation, the research seeks to enhance operational efficiency, improve customer experience, and contribute to increasing the business potential of sports venue services.

2. Research Method

The research methodology outlines the steps taken to address the identified problem logically and systematically. It consists of three main phases: data collection, technology analysis, and technology implementation. The applied development methodology is illustrated in Figure 1.

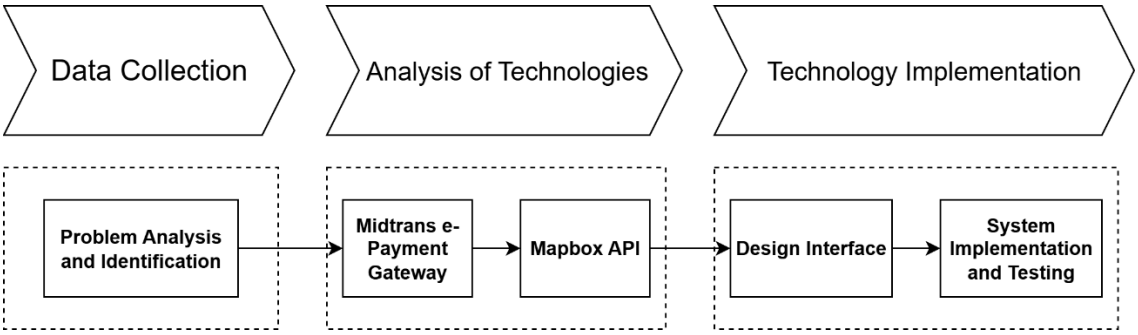

Figure 1 Methodology in Application Development

1. Data Collection: This stage focused on gathering information related to the location booking process and payment methods. Data was collected through interviews with site managers and tenants, as well as a review of relevant studies and industry best practices. The results were then analyzed to identify issues and determine tenants' needs for a more efficient booking system.
2. Analysis of Technologies: At this stage, the research evaluates suitable technologies to fulfill the identified requirements. The location detection feature uses Mapbox API Geolocation Service to accurately capture and categorize the user's address based on official identification (KTP). Meanwhile, Midtrans e-Payment Gateway is integrated to securely process digital payments for field bookings. This analysis also includes the design of the system architecture and functional requirements to ensure seamless interaction between the geolocation service and the payment gateway.
3. Technology Implementation: This phase includes the development and integration of the proposed technology into the application. Interfaces were designed to make it easier for renters to make bookings, complete payments, and for managers to see the distribution of which regions have been booked by field renters. After implementation, rigorous system testing was conducted to

verify functionality, ensure reliable data storage by region, validate secure payment processing, and confirm that the system effectively improves the booking workflow and supports opening new business premises according to the region with the most bookings.

The system architecture analysis in this study can be seen in Figure 2.

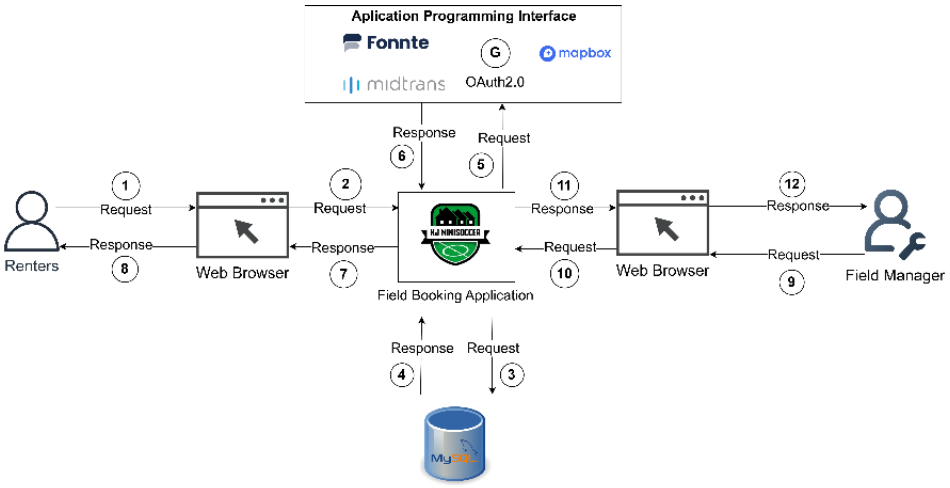

Figure 2 Architecture System

The architecture of the proposed system is illustrated in Figure 2. Below is a detailed explanation of each component:

1. Renters access the application through devices such as laptops or smartphones using a web browser. They can perform activities like viewing field schedules, making reservations, or logging into their accounts.
2. The web browser sends requests to the web-based reservation application, such as accessing pages, submitting booking forms, or retrieving specific data.
3. The application processes these requests and interacts with the MySQL database to store or retrieve relevant data, including field availability, user account information, and reservation schedules.
4. The MySQL database returns the requested data, such as schedule information or user profiles, to the application
5. The application may also communicate with various external Application Programming Interfaces (APIs), including:
   a. Midtrans, for handling digital payment transactions during down payments.
   b. Fonnte, to send WhatsApp notifications regarding remaining payments after a play session ends.
   c. OAuth 2.0, for user authentication through Google accounts.
   d. Mapbox API, to retrieve geolocation data based on renters' ID card addresses, enabling regional booking analysis that can inform potential new business location planning.
6. External APIs return responses to the application, such as payment statuses from Midtrans or notification delivery confirmations from Fonnte.

7. The application compiles data from the database and APIs and delivers it to the user's browser as a web interface. This interface includes confirmation pages, real-time schedules, and reservation histories.
8. Renters view and interact with the application interface via their browser.
9. Field managers also access the system through web browsers on computers or laptops. They have administrative privileges to manage bookings, confirm payments, and access financial reports.
10. The manager's web browser sends requests to the application, such as viewing user data, adjusting schedules, or generating financial reports.
11. The application processes these administrative requests, retrieves relevant data from the database, and prepares a response.
12. The web browser displays the results to the field manager, including booking lists, financial summaries, or refund requests submitted by renters.

3. Results and Discussion

The implementation of electronic payment technology in the location booking application was successfully integrated with the Midtrans payment gateway. Figure 3 shows the electronic payment interface generated by the Midtrans Snap service. Once a renter fills out the booking form in the app, they will be given the option to pay via QRIS. This allows the app to display a QR code that can be scanned and paid directly by the renter, thus providing flexibility and convenience in transactions.

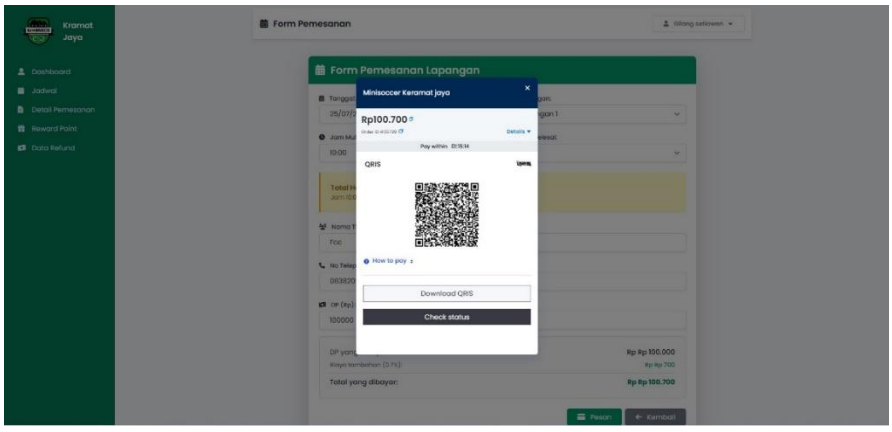

Figure 3 Midtrans Snap Payment Interface Display

Figure 4 shows the implementation of the confirmation page that appears after the renter has completed the payment process. This page confirms that the transaction has been successfully processed, displaying the payment amount and order ID as proof of payment. This ensures transparency and builds the renter's trust in the payment process.

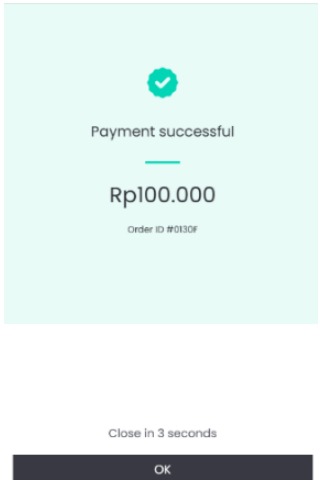

Figure 4 Successful Payment Confirmation

Figure 5 displays the booking details stored in the application database after the payment is completed. The information includes booking codes, team names, booking dates, session times, and payment status. This confirms that the system not only processes payments securely but also records all transaction data accurately, supporting operational efficiency and traceability.

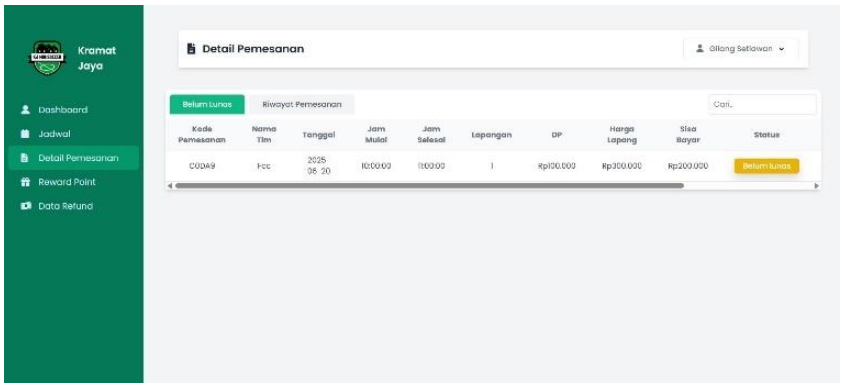

Figure 5 Booking Details Successfully Stored in the System

The initial implementation of geolocation technology using the Mapbox API is shown at this stage, where the map interface is successfully rendered in the system. At this stage, the map displays the general area without marking the specific coordinates of the user. This stage is crucial to ensure that the Mapbox API is well integrated and visually functional before retrieving the exact location of the user. This serves as the basis for enabling real-time location tracking of customers, which will later allow business owners to analyze the geographical distribution of their customers for decision-making to open a minisoccer business in a new place. The initial view of geolocation integration with the Mapbox API can be seen in Figure 6.

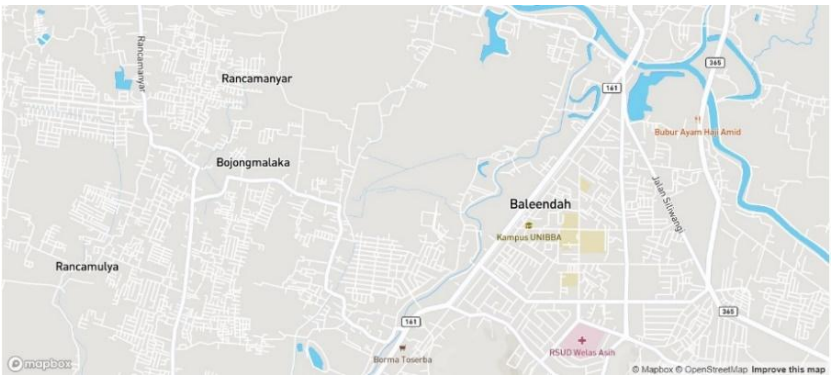

Figure 6 Initial Display of Google Mapbox API Integration

The following table presents the coordinate points collected from several renters who have made reservations at Minisoccer Kramat Jaya. The geolocation data was obtained based on the address information filled in through the application by each tenant. For clarity and analysis purposes, the data have been grouped by neighborhood, allowing managers to understand the regional distribution of tenants more effectively. Each entry includes the name of the neighborhood along with its latitude and longitude, as shown in Table 1.

Table 1 Geolocation Data of Renters by Neighborhood

No	Neighborhood	Latitude	Longitude
1	Bojongkunci	-7.01472080	107.57122660
2	Cipagalo	-6.97030540	107.65408770
3	Ciluncat	-7.04658490	107.54755660
4	Gandasari	-7.02459930	107.54903590
5	Kamasan	-7.04667780	107.57862380
6	Manggahang	-7.02230120	107.64224880
7	Mekarsari	-7.02894450	107.73697380
8	Sukapura	-6.96998110	107.62893070
9	Sukamenak	-6.97167800	107.58454180

This map visualizes the distribution of location points of each renter who has made a booking at Minisoccer Kramat Jaya. The red markers represent the geographic coordinates of each kelurahan, based on address data submitted by the renter through the application. Additionally, cluster markers are used to display the total number of renters grouped by area, providing a clearer view of customer density per kelurahan. This implementation allows administrators to easily analyze which regions have the highest number of bookings. The result of this geolocation-based visualization using Mapbox API is shown in Figure 7.

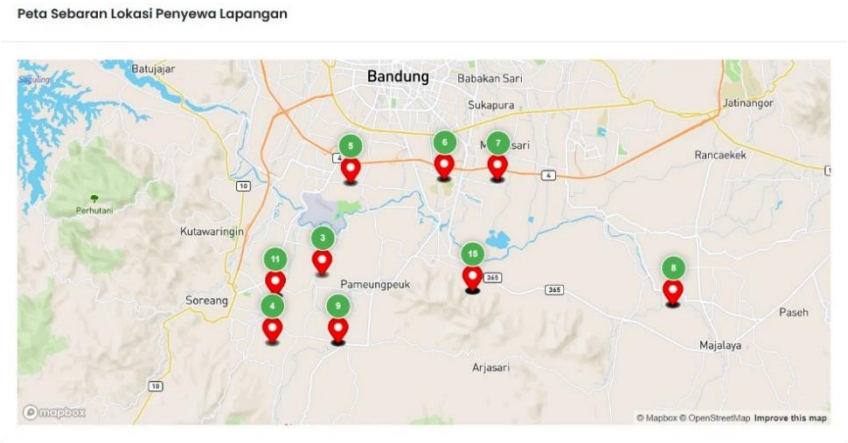

Figure 7 Location points of the minisoccer field tenants

The table in Figure 8 displays the total number of field bookings made by tenants, grouped by neighborhood. This data comes from the address information entered by users during the booking process and is used to summarize how many bookings came from each area. By displaying this data, managers can easily identify which areas have the highest demand and use this insight to support future business strategies, such as targeted promotions or determining suitable areas for expansion. The implementation of displaying order data from each neighborhood can be seen in Figure 8.

Data Lokasi Penyewa Lapangan per Kelurahan

NO	KELURAHAN	JUMLAH PESANAN
1	Manggahang	15
2	Gandasari	11
3	Kamasan	9
4	Mekarsari	8
5	Cipagalo	7
6	Sukapura	6
7	Sukamenak	5
8	Ciluncat	4
9	Bojongkunci	3

Figure 8 Distribution of Renters' Locations by Neighborhood with Cluster Markers

The testing phase in this study aims to evaluate whether the developed system functions according to the predefined objectives. This step is essential to determine if the system operates properly or if any deficiencies need improvement, ensuring the final application meets expectations. An alpha testing plan using the black-box method was applied to assess system functionality, as shown in Table 2.

Table 2 Functionality Testing Plan

No	Testing Menu	Detail Testing	Conclusion
1	User Registration	Renters can fill in the registration form with both valid and invalid data.	Success
2	User Login	Renters and Admins can log in using valid and invalid email-password combinations.	Success
4	User Logout	Renters and Admins can log out and end their session.	Success
5	View Schedule	Renters and Admins can view real-time field availability.	Success
6	Make Reservation	Renters can reserve fields based on available and unavailable time slots.	Success
7	View Booking Details	Renters can access the details of their reservations.	Success
8	View Booking History	Renters can view their booking history based on their account.	Success
9	Modify Booking Schedule	Renters can request changes to their reservation schedule.	Success
10	Submit Refund Request	Renters can fill out a refund form with a reason and submit the request.	Success
11	View Refund Status	Renters can check the status of submitted refund requests.	Success
12	View All Bookings	Admins can view booking data from all renters.	
13	Modify Renter Booking Schedule	Admins can adjust booking schedules as requested by renters.	Success
14	Manually Add Booking Data	Admins can manually input booking data.	Success
15	Delete Booking Data	Admins can delete specific bookings from the system.	Success
16	View All Reward Points	Admins can view the accumulated reward points of all renters.	Success
17	Confirm Payment Completion	Admins can verify and confirm full payment transactions.	Success
18	View Refund Submissions	Admins can see all refund requests submitted by renters.	Success
19	Confirm Booking Cancellation	Admins can approve cancellation requests from renters.	Success
20	View Financial Data	Admins can view all income generated from field rental transactions.	Success
21	Print Financial Reports (PDF)	Admins can export financial reports in PDF format.	Success

No	Testing Menu	Detail Testing	Conclusion
22	Send Notification	The system automatically sends WhatsApp reminders for pending payments.	Success
23	View Renter Location Distribution	Admins can view renter distribution statistics by area using geolocation mapbox api data from bookings to support business expansion decisions.	Success

To validate whether the developed field booking application effectively addresses the previously identified problems, beta testing was conducted by involving field management as primary users. The evaluation focused on determining the application's ability to improve scheduling efficiency and ensure secure data management. The summarized interview results are presented in Table 3.

Table 3 Summary of Beta Testing Interview Results with Field Management

No	Question	Yes	No	Response Summary
1	Does the application help manage the field schedule more efficiently and reduce scheduling conflicts?	✓		Yes, the system is very helpful. We no longer need to record bookings manually or handle inquiries via chat. The schedule is now clearly visible in the system, making it easier to avoid overlaps.
2	Does the application help protect transaction and booking data through the web-based system?	✓		Correct, the transaction data is now securely stored in the system. We can easily access the booking history through the dashboard, unlike before when we had to search through physical records.
3	Does the application help you identify the distribution of customer locations based on their registered ID card addresses, supporting future business expansion strategies?	✓		Yes, the feature allows us to view the geographic distribution of customers. We can now easily see which areas have the highest number of bookings, which is useful for planning new field locations.

This study used the Likert scale method to measure users' perceptions of the field booking application developed for Minisoccer Kramat Jaya. The scoring process followed these steps:

1. Rating Categories

The questionnaire provided to renters included five rating options for each question. These rating categories are presented in

Table 4 Questionnaire weighting criteria

Answer Criteria	Weight
Strongly Agree	5
Agree	4
Undecided	3
Disagree	2
Strongly Disagree	1

2. Calculating the Ideal Score

The ideal score is calculated using the formula: Ideal Score = Maximum Score × Total Respondents, where the maximum Likert score is 5 and the number of respondents is 30 (Pranatawijaya et al 2019). By applying this formula, the ideal score for this study is 5 × 30 = 150.

3. Calculating the Percentage Score

The percentage score (P) is calculated using the following formula:

Notes:

P is the percentage score.

Total Respondent Score is the sum of (score × frequency of each response) (Rahayu et al 2022).

The Ideal Score is s150.

These results were obtained from 30 respondents who had rented fields at Minisoccer Kramat Jaya. The assessment was conducted using a Likert scale, as explained earlier. This data aims to provide an overview of how well the developed application meets the needs of field renters. The results of several questionnaire questions for renters can be seen in Table 5.

Table 5 The results of the questionnaire survey conducted with the field renters.

Question	Percentage Value
Can this application speed up you as a tenant in the field booking process so that the booking time becomes less than 10 minutes?	91%
Can this application make it easier for you as a tenant to monitor field availability without having to come directly to the location?	94%
Can this application speed up your experience as a tenant in the field booking process without having to come directly to the location?	91%
Can this application make it easier for you as a tenant to find out the available field time without having to contact the manager?	97%

The results of the questionnaire evaluation demonstrate that the developed field booking application received highly positive responses from the users. Based on the summarized data:

1. Question 1 regarding whether the application can accelerate the booking process to less than 10 minutes obtained 91%, indicating that users strongly agree that the system effectively reduces booking time.
2. Question 2 regarding the ability of the application to allow users to monitor field availability without visiting the location reached 94%, reflecting strong user satisfaction with the remote accessibility features.
3. Question 3 concerning whether the application accelerates the booking process without the need for direct interaction at the location achieved 91%, showing that users perceive the online booking functionality as highly efficient.
4. Question 4 regarding the ability of the application to provide information about available time slots without having to contact the manager recorded 97%, the highest score, indicating exceptional acceptance and ease of information access.

Overall, the questionnaire results indicate that the field booking application successfully addresses the needs of field tenants by improving booking efficiency, providing convenient access to information, and minimizing the need for physical interaction during the booking process. These findings demonstrate that the application has been well-received and is highly effective in fulfilling its intended objectives.

4. Conclusion

Based on the results of the analysis and implementation carried out during the development of the web-based field booking system at Minisoccer Kramat Jaya, it can be concluded that the application has successfully met its objectives. The system has significantly accelerated the booking process, reducing the average booking time to under 10 minutes. It also enables users to easily check field availability in real-time, enhancing the overall booking experience. Furthermore, the application helps administrators manage field schedules more efficiently and reduces the risk of scheduling conflicts or data recording errors. Lastly, it strengthens the security and organization of transaction and booking data, supporting better operational management. In addition, the application successfully addresses the third problem by utilizing geolocation to record and analyze customer address data based on their registered ID card information. This feature allows administrators to identify customer distribution across different areas, providing valuable insights for strategic business development, such as planning the opening of new field locations in areas with the highest booking demand.

References

Aguiar, M., Botelho, G., Lago, C., Maças, V., & Sampaio, J. (2012). A review on the effects of soccer small-sided games. Journal of human kinetics, 33, 103.

Ahmad, W., Qadri, S., Majeed, M. K., Saleem, S., Hussain, I., & Umer, N. (2025). Bizprobe: A Geolocation-Driven And Scalable Framework For Local Business Intelligence And Outreach Automation. Kashf Journal of Multidisciplinary Research, 2(06), 65-80.

Ardani, R. L., & Sani, A. (2024). Designing An Android-Based Futsal Booking App Using Fcfs And Multilevel Feedback Queue Algorithms. Jurnal Pilar Nusa Mandiri, 20(2), 155-164.

Arikpo, I., & Okokon, A. (2018). An automated scheduling system for university lectures and examinations. International Journal of Scientific Engineering Research.

Baxtiyarovich, A. R., & Djurabekovich, M. F. (2025). THE ROLE OF SPORTS IN A HEALTHY LIFESTYLE. YANGI O ‘ZBEKISTON, YANGI TADQIQOTLAR JURNALI, 2(5), 380-382.

bin Jafridin, Z. N. A., & Salamat, M. A. (2023). Web-Based Management System for Pura Kencana Sports Centre. Applied Information Technology And Computer Science, 4(1), 1681-1693.

Chavan, P., Paygude, P., Rathi, S., Patil, M., Patil, T., Jamdade, S., & Patil, R. (2025). Leveraging real-time data: A location-based ambulance booking and tracking system with geofencing. Journal of Integrated Science and Technology, 13(2), 1039-1039.

Getuz, Z., & Wondemagnegn, A. (2022). A qualitative report of sport facilities management. Return: Study of Management, Economic and Bussines, 1(4), 134-138.

Hidayatulloh, R., & Airlangga, P. (2022). Integration of Mapbox and Google Maps to Support Additional Features in Geographic Information Systems. SAINTEKBU, 14(02), 16-22.

Hammad, R., Irfan, P., & Mukti, M. T. P. (2024). Geolocation data incorporation in Mapbox for comprehensive mapping of tourism areas on Lombok Island. Matrix: Jurnal Manajemen Teknologi dan Informatika, 14(1), 33-42.

Lowry, P. B., Wells, T. M., Moody, G. D., Humphreys, S., & Kettles, D. (2006). Online payment gateways used to facilitate e-commerce transactions and improve risk management. Communications of the Association for Information Systems (CAIS), 17(6), 1-48.

N Siregara, N., Githaa, D. P., & Sasmitaa, G. M. A. Design and Development of the" Campoga" Sports Field Reservation System Based on a Website.

Oo, K. Z. (2019). Design and implementation of electronic payment gateway for secure online payment system. Int. J. Trend Sci. Res. Dev, 3, 1329-1334.

Pavani, P., Komatireddy, S. R., Yarasuri, V. T., Police, V. R., Tanneru, S. K., & Al-Jawahry, H. M. (2024). Geographic Information Systems Applications in Business Decision-Making. In E3S Web of Conferences (Vol. 529, p. 04006). EDP Sciences.

Pranatawijaya, V. H., Widiatry, W., Priskila, R., & Putra, P. B. A. A. (2019). Penerapan skala Likert dan skala dikotomi pada kuesioner online. Jurnal Sains Dan Informatika, 5(2), 128-137.

Rahayu, W. I., & Shafina, M. R. (2022). Aplikasi Analisis Kelayakan Sistem Untuk Pengukuran Usability Dengan Menerapkan Metode Use Questionnaire: Aplikasi Analisis Kelayakan Sistem Untuk Pengukuran Usability Dengan Menerapkan Metode Use Questionnaire. Jurnal Teknik Informatika, 14(3), 152-160.

Rahmatya, M. D., Wicaksono, M. F., Sari, D. P., & Mubarok, M. N. (2020, July). Design of Reservation Information System. In IOP Conference Series: Materials Science and Engineering (Vol. 879, No. 1, p. 012023). IOP Publishing.

Rohmat, D., Mahardika, F., & Santika, D. (2024). Website Application Design on the Bima Mini Soccer Field in Cikubang. JOCSIT.:. Journal of Collaborative Science and Informatics Technology, 1(1), 65-76.

Roig-Tierno, N., Baviera-Puig, A., & Buitrago-Vera, J. (2013). Business opportunities analysis using GIS: the retail distribution sector. Global Business Perspectives, 1(3), 226-238.

Shihab, L. A. (2020). Technological tools for data security in the treatment of data reliability in big data environments. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 11(9), 1-13.

Sarosa, M., Permana, W. I., Nurohmansah, V., & Isnomo, Y. H. P. (2018). On the design of web-based information and booking system for futsal field rental business. International Journal of Computer Applications Technology and Research, 7, 225-230.

S Hasibuan, S. H., Nasution, M. I. P., & Sundari, S. S. A. (2023). Development Of Payment Gateway Digitalization Using Midtrans In The Use Of Halodoc. Management, 1(2), 3..

Shavitt, Y., & Zilberman, N. (2011). A geolocation databases study. IEEE Journal on Selected Areas in Communications, 29(10), 2044-2056.

Setiawan, E. B., Gumilar, G. T., & Setiyadi, A. (2024). Aplikasi Pedagang Keliling Menggunakan Teknologi Geolocation dan Cloud Messaging. Jurnal Teknologi Informasi dan Ilmu Komputer, 11(3), 675-684.

Tshering, Y., Yangchan, T., Wangchuk, K. J., Bhujel, S., & Gurung, B. (2024). Empowering sports enthusiasts and facility owners: An online sports field booking system for Bhutan. Journal of Applied Engineering, Technology and Management, 4(1), 83-89.

Tudor, C., Girlovan, A., & Botoroga, C. A. (2025). Where Business Meets Location Intelligence: A Bibliometric Analysis of Geomarketing Research in Retail. ISPRS International Journal of Geo-Information, 14(8), 282.

Veronica, V., Oetama, R. S., & Ramadhan, A. (2024). Incorporating rivest-shamir-adleman algorithm and advanced encryption standard in payment gateway system. TELKOMNIKA (Telecommunication Computing Electronics and Control), 22(3), 629-644.