

A MODERN WEB-BASED SERVICE PLATFORM FOR HANDYMAN BOOKING USING REACT JS

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ABSTRACT

This study aims to develop a modern web-based platform that facilitates handyman service booking using React JS. The lack of integrated digital systems for handyman services often causes difficulties for customers in finding reliable workers and for service providers in promoting their services effectively. This research focuses on designing and implementing a web-based application that connects customers and handyman service providers through an interactive and efficient platform. The research method used includes problem identification, data collection through observation and literature study, system requirement analysis, system design, implementation using React JS, and functional testing. The developed system provides features such as user registration, service listing, handyman profiles, online booking, and administrative data management. The results of system implementation and testing indicate that all features function properly and support efficient service booking and information management. The platform improves accessibility, simplifies the booking process, and enhances communication between customers and service providers. The study concludes that the use of React JS in developing a web-based handyman booking platform can effectively support digital service transformation and improve service efficiency.

Keywords: *Application development, handyman booking, react js, web-based platform.*

1. Introduction

The availability of handyman services such as carpentry, electrical work, masonry, and general construction plays an important role in supporting community infrastructure and daily needs (Saundariya et al., 2021). However, access to reliable handyman services in many local areas remains limited due to the absence of an integrated digital platform that connects service providers with customers (Chinaei et al., 2023; Saundariya et al., 2021; Vidhya et al., 2025). Most communities still rely on conventional methods, such as personal networks and word-of-mouth communication, to find available workers. This manual approach often results in delays, limited service options, and difficulties in verifying the quality and availability of service providers.

In addition, many skilled workers face challenges in promoting their services and reaching a broader market. Without a structured platform, new or independent handyman workers struggle to compete and showcase their expertise. Customers, on the other hand, encounter difficulties in comparing service providers, booking services efficiently, and obtaining transparent information regarding pricing and availability. These issues indicate the need for a modern web-based service platform that can facilitate communication, service discovery, and booking processes in a more efficient and accessible manner.

A web-based application offers an effective solution for integrating service information, enabling real-time booking, and improving user experience (Cahyani & Yaqin, 2024; Yaqin, 2023). By utilizing modern web technologies, a digital platform can provide a centralized system that benefits both customers and service providers. React JS is one of the most widely used JavaScript libraries for building interactive and dynamic user interfaces. Its component-based architecture, reusable components, and efficient rendering through the virtual DOM make it suitable for developing scalable and responsive web applications. The use of React JS allows developers to create modern service platforms with improved performance, maintainability, and user interaction.

Several previous studies have highlighted the importance of web-based service systems in improving accessibility and operational efficiency. Research on web-based information systems demonstrates that digital platforms can streamline communication and improve service

management. Other studies focusing on React JS development show that the framework supports rapid development, efficient data handling, and better user interface design. Despite these advancements, the implementation of a specialized platform for handyman service booking remains limited, particularly in local community contexts.

To clarify the existing problems and proposed solutions, the following table presents the comparison between current conditions and the proposed web-based platform.

Table 1. Current Problems and Proposed Solutions

No	Current Condition	Problems Identified	Proposed Solution
1	Manual search for handyman services	Limited information and slow service discovery	Develop centralized web-based platform
2	Word-of-mouth promotion	Difficult for new workers to reach customers	Provide digital profiles for service providers
3	No integrated booking system	Inefficient communication and scheduling	Implement online booking feature
4	Lack of service transparency	Difficult to compare services and prices	Provide detailed service information
5	Limited technology utilization	Inefficient service management	Use React JS for modern web application

Table 1 illustrates several key problems that occur in the current handyman service system along with the proposed solutions offered through a web-based platform. The first problem is that customers still search for handyman services manually, resulting in limited information and slow service discovery. To address this issue, a centralized web-based platform is proposed to provide comprehensive and easily accessible information about available services. The second problem involves the reliance on word-of-mouth promotion, which makes it difficult for new or independent workers to reach potential customers. This can be solved by providing digital profiles for service providers so they can showcase their skills, experience, and service categories more effectively.

Furthermore, the absence of an integrated booking system creates inefficiencies in communication and scheduling between customers and service providers. The proposed platform introduces an online booking feature that allows users to schedule services more quickly and accurately. Another issue is the lack of service transparency, which makes it difficult for customers to compare services, prices, and availability. By providing detailed service information on the platform, customers can make better decisions based on their needs. Finally, the limited use of technology in managing handyman services contributes to inefficient service operations. The implementation of a modern web application using React JS is expected to improve system performance, enhance user experience, and support more efficient service management. Based on these considerations, this study aims to develop **“A Modern Web-Based Service Platform for Handyman Booking Using React JS.”** The objective of this research is to design and implement a modern web-based application that connects customers with handyman service providers through an interactive and efficient digital platform. The system is expected to improve accessibility, streamline booking processes, and support the digital transformation of local service industries through the utilization of React JS technology.

2. Literature Review

Web-based service platforms have become an important component in improving accessibility and efficiency in various service sectors. A literature review is necessary to identify relevant theories, concepts, and previous studies related to the development of web-based applications and the implementation of modern frameworks such as React JS. This section presents a review of

scholarly sources including books, journal articles, and previous research that support the development of a web-based handyman booking platform.

Web-Based Service Information Systems

Web-based information systems are designed to facilitate data processing, service delivery, and communication through internet technology. According to Pressman (2019), web applications enable real-time interaction between users and systems, allowing information to be accessed efficiently without geographical limitations. Similarly, Sommerville (2016) explains that modern information systems must provide accessibility, usability, and scalability to meet user needs in dynamic environments. These characteristics make web-based platforms suitable for service-oriented applications, including handyman service booking systems.

Previous studies have shown that web-based service platforms can significantly improve service accessibility and operational efficiency. Research conducted by Sari et al. (2022) demonstrated that web-based information systems help users obtain accurate information quickly and support better data management. Another study by Rahman and Putra (2021) highlighted that digital service platforms improve communication between service providers and customers while reducing manual processes. These findings indicate that implementing a web-based system can enhance service quality and user satisfaction.

React JS in Modern Web Development

React JS is a JavaScript library widely used for building user interfaces, particularly for single-page applications (SPA). According to the official React documentation (React.dev, 2023), React enables developers to create reusable UI components that simplify development and maintenance processes. Its virtual DOM technology improves performance by updating only the necessary parts of the user interface rather than reloading the entire page.

Research conducted by Yaqin, (2023) found that React JS improves application performance and development efficiency through its component-based architecture. Another study by Yaqin, (2023) concluded that React JS supports faster rendering and better user experience compared to traditional web development methods. These advantages make React JS suitable for developing modern service platforms that require dynamic interaction and real-time data updates.

Digital Service Platforms and Booking Systems

Digital booking systems have been widely implemented in various sectors such as transportation, healthcare, and home services. According to Abusalma et al (2024), digital platforms enhance service quality by providing convenience, transparency, and efficiency in service transactions. Online booking systems allow users to access service information, compare options, and make reservations quickly.

A study by Yaqin (2023) on online service booking systems revealed that integrating booking features into web applications improves operational efficiency and customer satisfaction. Similarly, research by Vo et al (2024) showed that web-based booking systems help service providers manage schedules, monitor service requests, and improve service delivery. These studies support the importance of integrating booking features into a handyman service platform.

Summary of Previous Studies

To provide a clearer overview of related research, Table 1 summarizes several previous studies relevant to web-based service platforms and React JS implementation.

Table 2. Summary of Related Studies

No	Author(s)	Research Focus	Method/Technology	Key Findings
1	Balolot et al.(2024)	Web-based information system	Web technology	Improves information accessibility and data management
2	Vo et al (2024)	Digital service platform	Web application	Enhances communication and service efficiency

3	Wibowo et al. (2021)	React JS implementation	React JS framework	Improves performance and development efficiency
4	Bhatt et al (2024)	UI development with React JS	Component-based design	Provides better user experience
5	Yaqin (2023)	Online booking system	Web-based booking	Increases operational efficiency and customer satisfaction

Based on the reviewed literature, it can be concluded that web-based service platforms and React JS technology play a significant role in improving service accessibility, efficiency, and user experience. However, the development of a specialized web-based platform for handyman service booking remains limited. Therefore, this study focuses on designing and implementing a modern web-based handyman booking platform using React JS to address these gaps and contribute to the advancement of digital service systems.

3. Research Methods

This section describes the research steps undertaken in designing and developing **A Modern Web-Based Service Platform for Handyman Booking Using React JS**. The research method focuses on system development processes, including requirement analysis, system design, implementation, and testing (“Flawless Execution,” 2024; Tian & Gao, 2024). The methodology applied in this research follows a systematic software development approach to ensure that the developed system meets user needs and functions effectively.

Research Approach

This study uses a **system development research approach**, which aims to design and implement a web-based application that facilitates handyman service booking (Gupta et al., 2026; Riti et al., 2024). The research focuses on developing a functional system using modern web technology, particularly React JS, to provide an interactive and user-friendly interface.

The development process involves several stages, including problem identification, data collection, system analysis, system design, implementation, and testing. Each stage is carried out systematically to ensure that the resulting application meets functional and technical requirements.

Data Collection Methods

Data collection in this study was conducted using the following methods:

1. Observation

Observation was carried out to identify how handyman services are currently accessed by the community. This method helps in understanding existing problems, such as manual booking processes and limited information availability.

2. Literature Study

Literature studies were conducted by reviewing books, journals, and previous research related to web-based information systems, service booking platforms, and React JS development. This method provides theoretical support and references for system development.

3. Documentation

Documentation involves collecting supporting materials related to system requirements, user needs, and interface design to ensure the system aligns with expected functionality.

System Development Method

The system in this research was developed using a structured development model consisting of the following stages:

1. Problem Identification

Identifying issues in the current handyman service process, including lack of information, inefficient booking systems, and limited promotion for service providers.

2. Requirement Analysis

Determining system requirements such as user management, service listing, booking features, and admin control. Functional and non-functional requirements are analyzed to ensure system effectiveness.

3. System Design

Designing system architecture, user interface, database structure, and application workflow. This stage includes creating interface designs and modeling system processes.

4. System Implementation

The system is developed using React JS for the frontend interface. Additional tools such as JSON Server are used to simulate backend data storage and API communication. Features implemented include service listing, booking forms, user interaction, and CRUD operations.

5. System Testing

Testing is conducted to ensure that each feature functions correctly and the system runs as expected. Testing includes interface testing, functional testing, and user testing to identify and fix errors.

6. Deployment and Evaluation

After successful testing, the system is evaluated to determine its effectiveness in improving service accessibility and booking efficiency.

Research Flowchart

The research process is illustrated in the following flowchart to show the sequence of steps undertaken in this study.

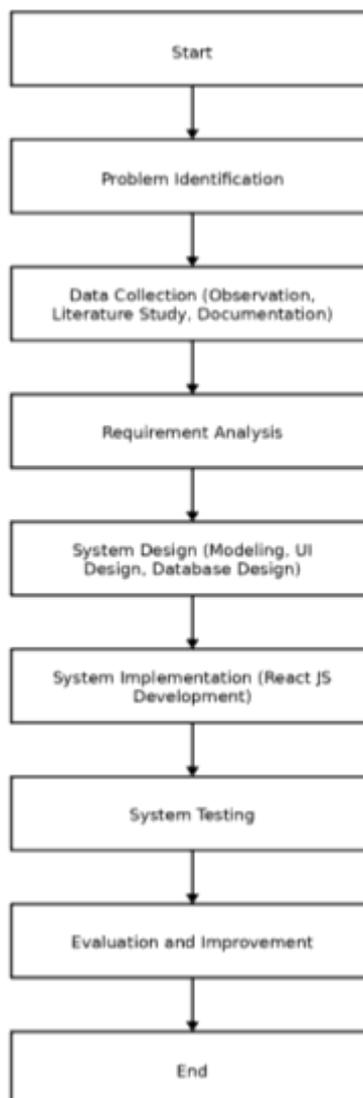


Figure 1. Research Flowchart

System Design Aspects

The system design in this study includes several important aspects:

1. **Modeling:** Designing system workflow and user interaction processes.
2. **Algorithm:** Implementing booking and data management logic within the application.
3. **Interface Design:** Creating responsive and interactive user interfaces using React JS.
4. **Database Design:** Structuring data for service providers, users, and booking information.
5. **Rules:** Defining system rules such as booking procedures, user roles (admin and user), and data validation.

Through these stages, the research produces a modern web-based handyman booking platform that is designed systematically and implemented using appropriate technologies to improve service accessibility and efficiency.

4. Results and Discussions

Results

This study produced a web-based application entitled “**A Modern Web-Based Service Platform for Handyman Booking Using React JS.**” The system was developed to facilitate interaction between customers and handyman service providers through an integrated digital platform. The results obtained from this research include system implementation outcomes, feature functionality, and system testing results.

System Implementation Results

The developed system consists of two main user roles: users (customers) and administrators. The application was built using React JS to create an interactive and responsive user interface. The system provides several main features, including service listing, handyman profiles, booking forms, and data management.

Table 3. Main Features of the Developed System

No	Feature	Description	Status
1	User Registration & Login	Allows users to access the system securely	Implemented
2	Service Listing	Displays available handyman services	Implemented
3	Handyman Profile	Provides information about service providers	Implemented
4	Booking System	Enables users to book handyman services online	Implemented
5	Admin Dashboard	Allows admin to manage data and services	Implemented
6	CRUD Data Management	Manage service and booking data	Implemented

The interface of the application was successfully developed using React JS component-based architecture. Each feature was implemented as a reusable component, allowing efficient and modular development. Navigation between pages was handled using React Router, enabling seamless transitions without reloading the page.

Functional Testing Results

Functional testing was conducted to evaluate whether each feature works according to system requirements. The testing process involved checking user interactions, data input, booking processes, and admin data management.

Table 4. Functional Testing Results

No	Tested Component	Expected Result	Result
1	Login and Registration	User can access system	Successful

2	Service Display	Services displayed correctly	Successful
3	Booking Feature	Booking data stored correctly	Successful
4	Navigation Menu	Pages load properly	Successful
5	Admin Data Management	Admin can add/edit/delete data	Successful
6	CRUD Operations	Data updated in system	Successful

Table 3 presents the main features implemented in the developed web-based handyman booking system. The system provides a user registration and login feature that enables users to securely access the platform and utilize its services. A service listing feature is available to display various handyman services offered, allowing users to browse and select services according to their needs. The system also includes a handyman profile feature that provides detailed information about service providers, including their expertise and availability. In addition, an online booking feature has been successfully implemented to allow users to schedule handyman services efficiently through the platform. For system management purposes, an admin dashboard is provided to manage service data, user information, and booking requests. Furthermore, the system supports CRUD (Create, Read, Update, Delete) operations, enabling administrators to add, edit, and delete service-related data effectively. All features listed in Table 3 have been successfully implemented and function according to system requirements.

Table 4 describes the results of functional testing conducted to evaluate the performance of each system component. The login and registration feature was tested to ensure that users can access the system securely, and the results show that this feature operates successfully. The service display feature was tested to verify that available services are presented correctly on the platform, and the system displayed accurate information as expected. The booking feature was also tested to confirm that booking data entered by users can be stored and processed properly, and the results indicate successful operation. Navigation menu testing confirmed that all pages load correctly and navigation between pages functions smoothly without errors. In addition, admin data management testing demonstrated that administrators can add, edit, and delete service data without issues. Finally, CRUD operations were tested to ensure that all data updates are processed and stored correctly in the system. Overall, the functional testing results indicate that all components of the developed system operate effectively and meet the intended functional requirements.

The results indicate that all main system functions operate properly. Users are able to view available services, select handyman providers, and submit booking requests. The admin can manage service data and monitor booking information through the dashboard.

Interface and System Performance

The user interface was designed to be responsive and interactive. The implementation of React JS enabled faster rendering and smoother user interaction. The use of reusable components reduced code redundancy and improved system maintainability. Data management using JSON-based storage allowed quick data retrieval and update processes during system operation.

Overall, the developed system successfully demonstrates the implementation of a modern web-based handyman booking platform that supports efficient service discovery and booking processes.

Discussion

The results of this study demonstrate that the implementation of a web-based handyman booking platform using React JS can effectively address the problems identified in the initial analysis. The developed system provides a centralized platform where customers can easily find and book handyman services, while service providers can promote their skills and manage service requests more efficiently.

The successful implementation of core features such as service listing, booking systems, and admin data management indicates that the system meets functional requirements. The use of React JS contributes to improved application performance, particularly in terms of interface responsiveness and dynamic content rendering. This finding supports previous research stating that React JS enables efficient development of interactive and scalable web applications.

Compared to previous studies on web-based service systems, this research confirms that digital platforms improve accessibility and communication between service providers and customers. Similar to the findings of earlier research on online service booking systems, the developed platform simplifies service discovery and scheduling processes. However, this study specifically focuses on handyman services, which are often underrepresented in digital service platforms. Therefore, this research contributes by providing a specialized solution tailored to local service needs.

From a technological perspective, the use of component-based architecture in React JS allows modular system development and easier maintenance. This aligns with existing theories that emphasize the importance of reusable components and efficient rendering in modern web development. The integration of CRUD functionality and routing mechanisms also demonstrates how modern web technologies can support structured and user-friendly service platforms.

The findings of this study indicate that implementing a modern web-based booking platform can support the digital transformation of local service industries. The developed system not only improves accessibility and efficiency but also provides a foundation for further development, such as integration with real-time databases, payment gateways, and mobile applications. Consequently, this research contributes both practically and academically to the development of web-based service platforms and the application of React JS in modern system design.

5. Conclusion

This study successfully developed **A Modern Web-Based Service Platform for Handyman Booking Using React JS** to provide an interactive and efficient digital platform connecting customers with handyman service providers. The system includes key features such as service listings, handyman profiles, online booking, and administrative data management, all of which function effectively based on implementation and testing results. The use of React JS contributes to a responsive and user-friendly interface, improving service accessibility and simplifying the booking process. Although the system demonstrates clear advantages in enhancing service efficiency and digital accessibility, it still has limitations, particularly in the use of a simulated database and the absence of advanced features such as online payment integration and real-time notifications. Therefore, further development is recommended to integrate secure databases, payment systems, and broader user testing to enhance system effectiveness and support the continued advancement of web-based service platforms.

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