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INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** II **Month of publication:** February 2026

DOI: https://doi.org/10.22214/ijraset.2026.77174

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue II Feb 2026- Available at www.ijraset.com

Multi-Vendor Event and Venue Booking Platform

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Abstract: ***In the last few years, customers have found it difficult to organize an event and book a venue on one sin- gle platform. It makes the whole process of event planning sluggish and inefficient. This paper proposes a multi-vendor event and venue booking platform that shall provide a simple and integrated solution. The system caters to different types of events, such as weddings, birthdays, and concerts. It allows the booking of various venues like hotels, function halls, restaurants, and conference centers. Being designed with three cardinal modules, namely Customer, Vendor, and Admin, the customers can securely browse, search (based on event name, location, description, etc.), and book for any event or venue. The vendor can list his venue and services within the same network and manage the bookings. It will support multiple vendors operating independently. The admin module would be responsible for over- all system monitoring, user management, and security control. The application will be developed using Java and Spring Boot for developing backend services and JWT-based authentication, whereas the frontend will be developed using HTML, CSS, and React.js. MySQL will be used for database management. It reduces time consumed in event planning and enhances overall efficiency and user experience.***
Index Terms: Event Management, Multi-Vendor Platform, Online Venue Booking, Spring Boot, MySQL, JWT Authenti- cation.

I. INTRODUCTION

Many researchers have explored software-based approaches to automate event management and related activities. Pinjari et al. [1] simplified event management through automation techniques, while Babu et al. [2] and Pasi et al. [3] focused on reducing manual coordination using online event management systems. Reviews conducted by Saleem et al. [4] and Maiske et al. [5] analyzed existing event management models and highlighted current approaches adopted in practice. Digital tools for event organization were further explored by Mishra et al. [6] and Khan et al. [7] through web-based systems aimed at improving accessibility and efficiency. Research has also extended to scheduling and booking systems, where IEEE [8], Mussawar et al. [9], Mishima et al. [10], Yu et al. [11], Shiang et al. [12], and Jonasson et al. [13] investigated meeting room scheduling, negotiation-based room booking, and usability improvements in booking systems. Domain- specific booking applications such as bakery service book- ing [14], railway reservation systems [15], and consultation scheduling platforms [16] demonstrated the effectiveness of online booking models in isolated domains. Other studies emphasized attendance tracking and monitoring using online booking or sensing technologies, including healthcare atten- dance systems [17], QR code and GPS-based tracking [18], face recognition [19], RFID [20], and barcode-based logistics management [21], which focus primarily on monitoring rather than booking-centric system design. Analytical works by Kumar et al. [22], Verma et al. [26], and Mu¨ller-Seitz et al. [27], along with conceptual and theoretical contributions from Uttarakhand Open University [25], Getz [28], Bowdin et al. [29], and Shone et al. [30], provide foundational knowledge on event management practices without addressing software implementation. More recent web-based solutions such as those proposed by Chitte et al. [23] and Khatipov et al. [24] demonstrate practical event management applications; In modern event planning, users expect simple, fast, and digital solutions for booking venues and managing events. With the growth of web technologies and online services, there is an increasing demand for platforms that provide real- time information, easy access, and reliable booking processes. An integrated digital platform can significantly improve the efficiency of event planning by reducing manual effort and improving coordination among all participants. This paper presents a multi-vendor event and venue booking platform that brings customers, vendors, and administrators together on a single system to simplify the booking process and improve overall management and user experience.

A. Problem Statement

Despite the developments that have led to an improved dig- ital framework for event management, managing and planning an event, as well as finding suitable event spaces, remains a difficult process to undertake.

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Currently, a number of processes need to be undertaken by users in a quest to access information regarding various event spaces, thereby proving to be an inefficient process. Ideally, there exists a lack of integration between various independent event spaces, making the process more difficult to manage without incorporating an approach that seeks to unite various systems, thereby facilitating a smoother process of decision-making. To a large extent, incorporating a unified approach requires a centralized platform that seeks to integrate the process of event space management.

II. RELATED WORK

A. *Existing Approaches*

In current times, the process of booking a venue or organiz- ing an event requires considerable manual effort. Customers usually use phone numbers, emails, and social media accounts to get basic details. Most of the details provided would be outdated or inaccurate, leading to confusion about the booking ability, cost, and services provided. As there is no medium to compare the options together, customers end up taking quotations from the concerned vendors separately. It leads to wasted time, cost variations, event booking issues, and orally fixed events that could potentially result in double booking and subsequent charges. In addition, the absence of authentic reviews further leads to mistrust on the part of customers. Suppliers also face similar challenges when dealing with bookings and schedules. Demands come from different sources, but the system of following them in note- books or spreadsheets makes the possibility of errors easy and organization hard. The price changes, the confirmation of availability, and the transactions also require extra effort and more time. When viewed from the management side, dealing with several suppliers without an organized system makes it difficult to monitor and address issues, as well as to trace fraudulent activities.

III. PROPOSED SYSTEM

A. *System Architecture*

The proposed system architecture shall be implemented as a centralized multi-vendor event and venue booking system, allowing customers and vendors, as well as administrators, to connect through a single web interface. Customers shall use the system to browse venues and services, select the preferred ones, and place booking requests. The vendors shall use the system to manage venue details and schedules, as well as prices, while administrators shall manage user administration, service approval, and system monitoring. Every activity shall be conducted using the main application layer.

The system also has an integrated payment solution gate- way to enable safe payment when making bookings. Once a payment is made, the payment information as well as booking details is validated for storage in a common database for future use. The common database holds data related to users, bookings, and payments, as well as vendors. With this system, coordination is avoided when organizing an event, there is clarity among parties involved, and event as well as venue management is done efficiently.

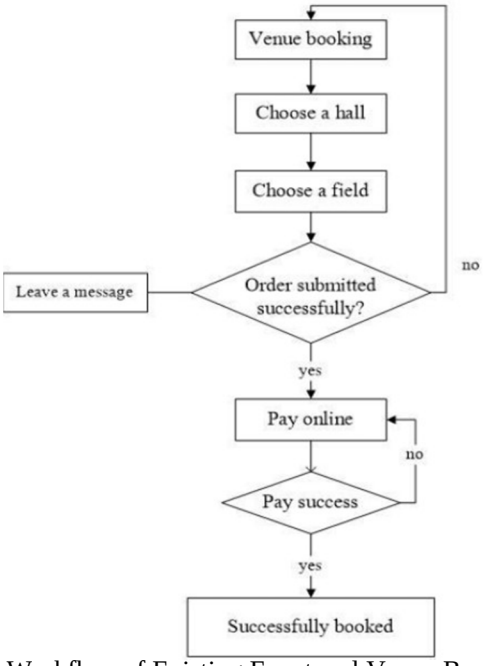

Fig. 1. Workflow of Existing Event and Venue Booking System

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Volume 14 Issue II Feb 2026- Available at www.ijraset.com

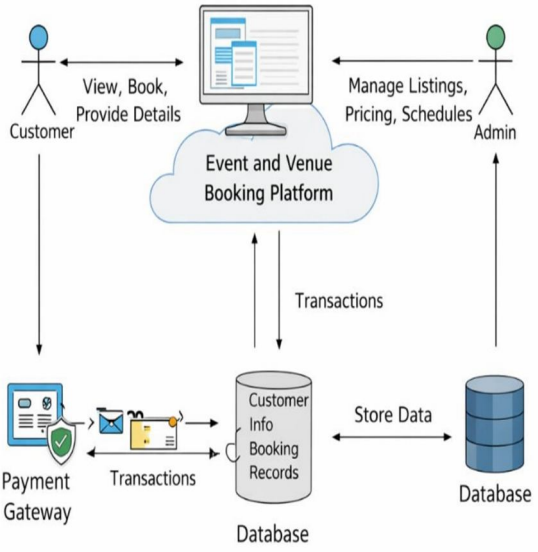

Fig. 2. Architecture of Proposed Event and Venue Booking Platform

B. Module Description

The system, as proposed, comprises a number of functional blocks that operate in concert with each other. The first module, referred to as ”Customer,” provides a feature through which a user searches a venue based on location, capacity, and dates selected. Additionally, a user would be required to make a booking request. The ”Vendor” module provides a feature through which a venue owner would be allowed to manage a venue and confirm a booking request while rejecting any booking. Of significance would be the ”Admin” module. As has already been indicated, there would be a feature in a module referred to as ”database” through which all user and venue details would be secured.

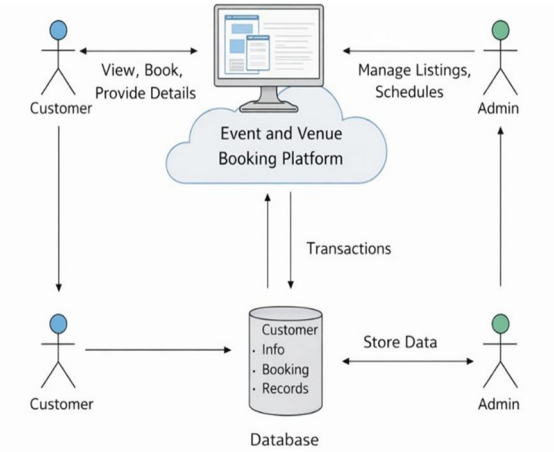

Fig. 3. Architecture of Proposed Multi-Vendor Event and Venue Booking System

C. Performance Analysis and Evaluation

The performance of the proposed Multi-Vendor Event and Venue Booking Platform was analyzed by observing how smoothly the system functions for users, vendors, and admin- istrators. The key activities of venue search, booking requests, vendor approval, and status updates were analyzed to check if the system provides correct and timely responses. The system functions properly for multiple user actions without any delay and provides correct booking and availability details. Vendor and admin tasks were handled correctly, enabling smooth venue and booking management. The system performs well and facilitates smooth interaction between users, vendors, and administrators.

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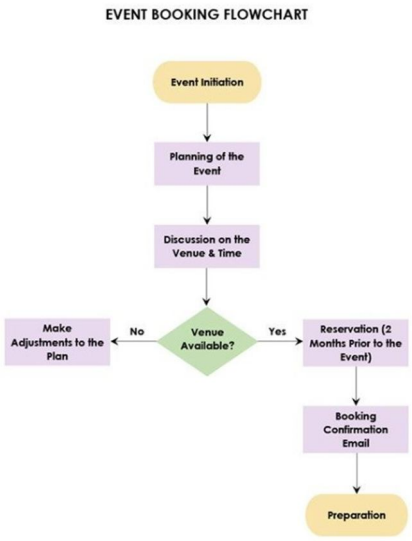

Fig. 4. Interaction Flow of the Event Booking Process

IV. RESULT AND DISCUSSION

The Multi-Vendor Event and Venue Booking Platform was successfully developed and tested. The home page provides clear navigation options such as Login, Sign Up, venue browsing, and calendar viewing, indicating smooth fron- tend–backend integration. The simple and responsive interface improves user accessibility and ease of use. These results show that the proposed system effectively overcomes the limitations of manual booking methods by offering a central- ized, real-time, and user-friendly solution. Overall, the system meets its objectives of improving efficiency, transparency, and user experience in event and venue booking.

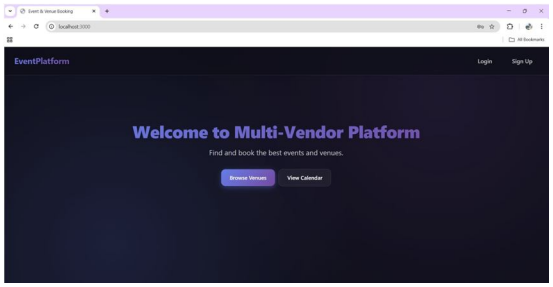

Fig. 5. Result

V. ACKNOWLEDGEMENT

The authors sincerely thank Mrs. B. Ganga Bhavani for her valuable guidance and support during the preparation of this paper. They also thank the faculty and management of Bonam Venkata Chalamayya Engineering College, Department of Computer Science and Engineering, for their cooperation.

VI. CONCLUSION

In conclusion, the proposed system titled “Multi-Vendor Event and Venue Booking Platform” successfully fulfills the challenges of the traditional manual event booking process by offering an efficient digital solution for the problem domain. Overall, the system provides customers, vendors, and admins on the same platform by ensuring the accuracy of information for each entity and helps complete the transaction process more accurately and safely. In brief, the traditional manual event booking system has challenges that can be solved by the proposed system effectively and accurately. Therefore, the proposed system provides an efficient way for event planning in today’s modern society.

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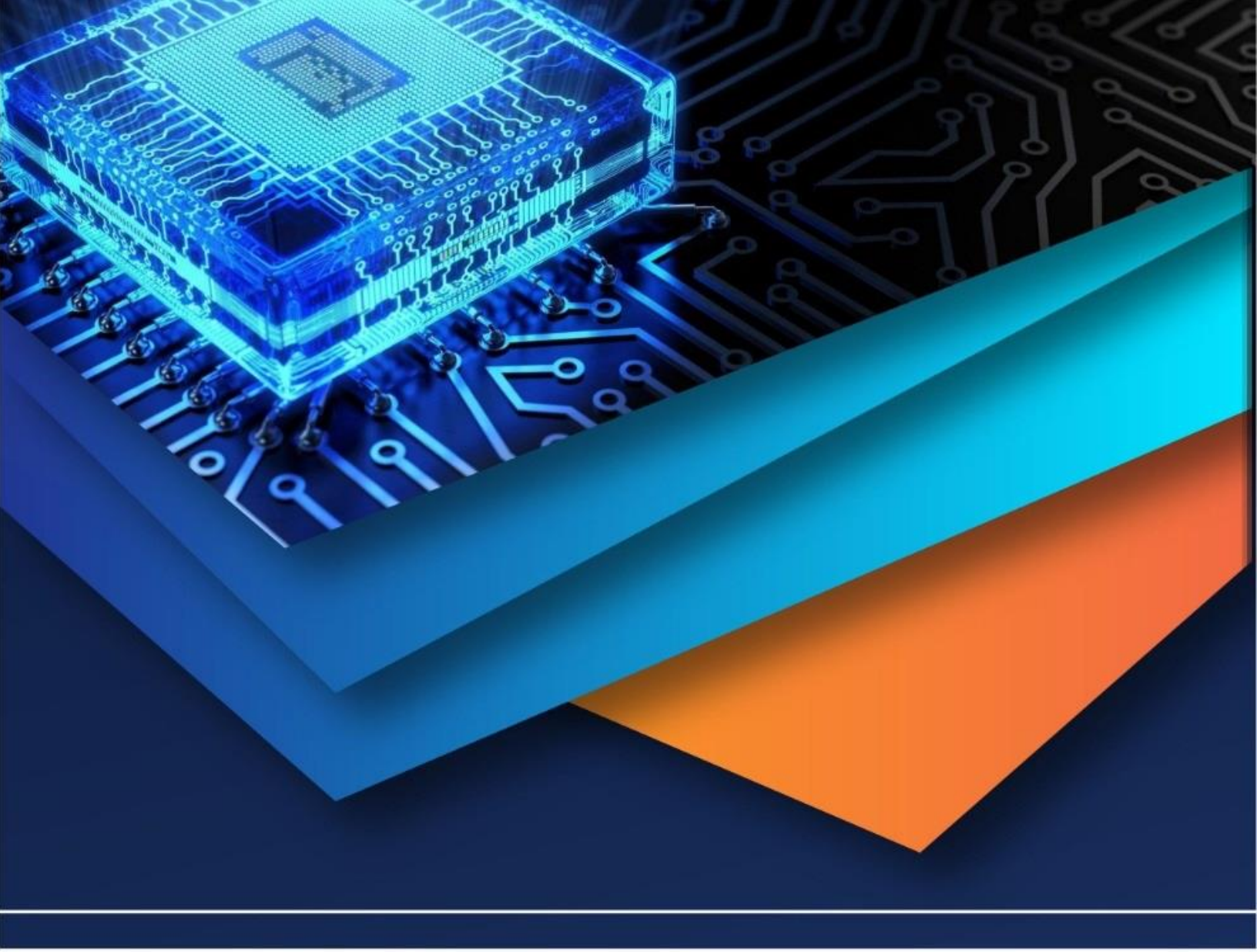

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