iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 12 **Issue:** III **Month of publication:** March 2024

DOI: https://doi.org/10.22214/ijraset.2024.59527

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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 12 Issue III Mar 2024- Available at www.ijraset.com

The Synergy of Events and Technology: MERN Stack Solutions for Seamless Event Rentals

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Abstract: ***The combination of technology with events in the modern day has drastically changed the way that event management is done. This paper explores how the technologies of Express.js, React.js, Node.js, and MongoDB (MERN stack) are integrated into event rental solutions, and how this allows for smooth and effective event planning and execution. Through a comprehensive analysis of several aspects, including development processes, user experience design, scalability, and integration options, this study clarifies the benefits and drawbacks of utilizing the MERN stack for event rental platforms.***
Keywords: Event management, event rental platforms, mern stack, web development, javascript, innovation,case studies.

I. INTRODUCTION

Setting the scene for understanding the importance of integrating technology, namely the MERN stack, into event management. It begins by contextualizing technology's tremendous impact on current event planning and execution, emphasizing how digital solutions have transformed traditional ways. From online ticketing systems to virtual event platforms, technology has not only simplified logistical processes but also improved guest experiences.

Within this context, the MERN stack, which includes MongoDB, Express.js, React.js, and Node.js, represents a significant advancement. The introduction attempts to highlight the crucial role that MERN stack technologies play in defining modern event rental solutions. By providing a brief introduction of each component inside the stack, readers obtain an idea of the holistic approach it takes to web development. MongoDB is a flexible and scalable database solution, Express.js's minimalist framework makes server-side development easier, React.js' component-based architecture transforms front-end development, and Node.js' event-driven, non-blocking I/O model allows for efficient server-side operations.

II. LITERATURE REVIEW

Event management has a long history that ranges from manual techniques to sophisticated digital systems. Recent research stresses the relevance of technology in dealing with the difficulties of modern event planning, showing the MERN stack's promise in this arena. According to research, the MERN stack provides a strong and adaptable architecture for creating scalable and responsive event rental platforms, addressing the needs of today's tech-savvy users.

Event management as a field has undergone amazing alterations over time, moving from manual and paper-based methods to digital solutions powered by technological advances. Historically, event planning and execution were labor-intensive operations, marked by lengthy paperwork, manual coordination efforts, and limited access to information. However, with the emergence of digital technology, notably the internet and mobile devices, the event management scene has changed dramatically.

Contemporary literature emphasizes the importance of technology in tackling the complexities and challenges of modern event planning and execution. Scholars and practitioners have stressed the transformative power of incorporating technology into all aspects of event management, from guest registration and ticketing to venue selection, marketing, and post-event analysis.

In terms of technology frameworks, the MERN stack has emerged as a popular option for designing online applications, such as event leasing sites. MongoDB, a NoSQL database, offers a versatile and scalable data storage solution, while Express.js' simple architecture simplifies server-side development. React.js, known for its component-based architecture and virtual DOM rendering, allows you to create dynamic and interactive user interfaces. Node.js is a server-side JavaScript runtime that supports event-driven, non-blocking I/O operations, making it ideal for developing scalable and real-time applications.

III. LIFECYCLE MODEL

The model that is basically being followed is the WATER FALL MODEL, which states that the phases are organized in a linear order. First of all the feasibility study is done.

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Once that part is over the requirement analysis and project planning begins. If system is existing one then modification and addition of new module is needed. The design starts after the requirement analysis is complete and the coding begins after the design is complete. Once the programming is completed, the testing is done. In this model the sequence of activities performed in a software development project are: -

1) Requirement Analysis
2) Project Planning
3) System design
4) Detail design
5) Coding
6) Unit testing
7) System integration & testing

Here the linear ordering of these activities is critical. End of the phase and the output of one phase is the input of other phase. The output of each phase is to be consistent with the overall
requirement of the system. Some of the qualities of spiral model also incorporated like after the people concerned with the project review completion of each of the phase the work done.

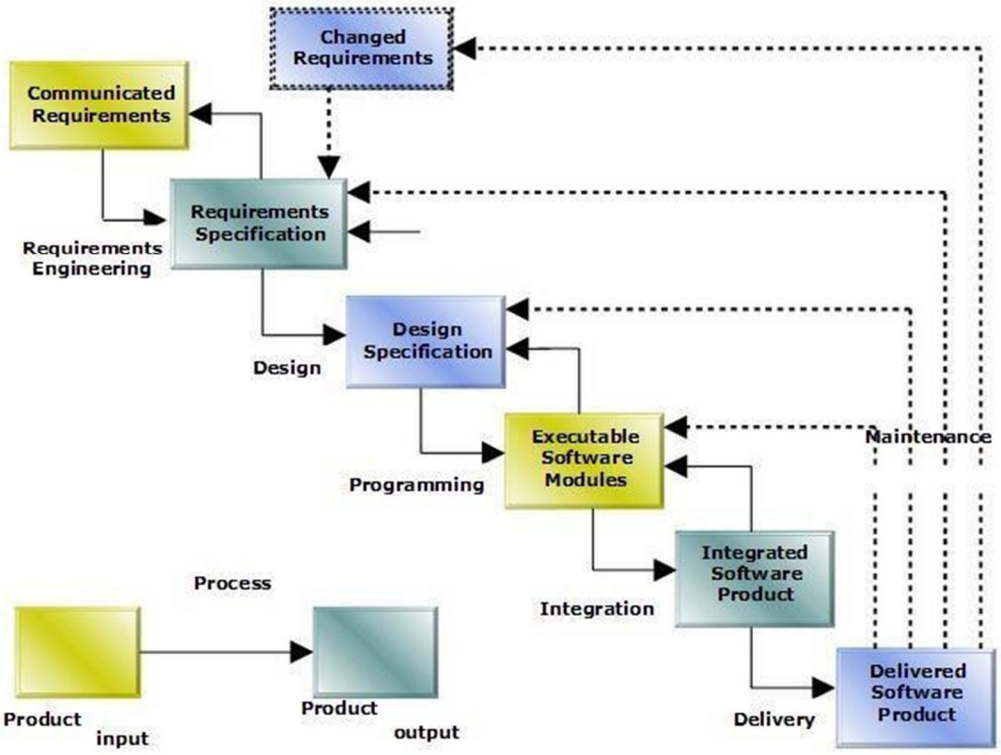


Fig: life cycle model

IV. PROPOSED METHODOLOGY

The technique used in this research article is a mixed-method approach that aims to completely evaluate the role of the MERN stack in event rental solutions. To begin, a comprehensive analysis of current literature on event management, technology integration, and MERN stack building was done. This literature study provided a framework for assessing the present environment and identifying knowledge gaps in the topic.

Following the literature study, a broad sample of event rental platforms based on the MERN stack was chosen for in-depth analysis. The selection criterion took into account platform popularity, developer difficulty, and user satisfaction indicators.

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This sample represented a diverse range of MERN stack implementations in real-world event management contexts, allowing for more nuanced insights and observations.

The flowchart of the whole process is :

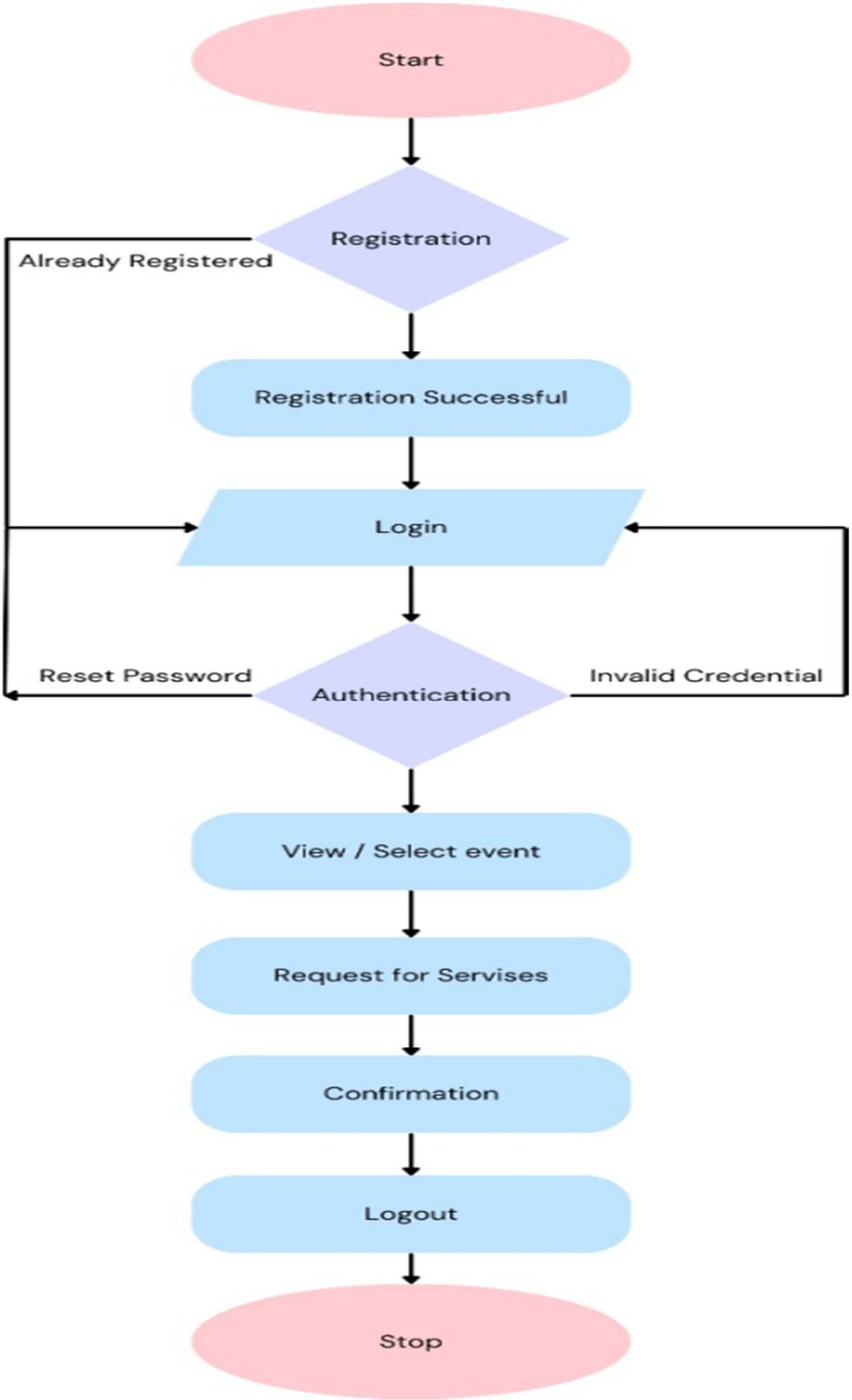


Fig: flowchart of the process

V. PROJECT GUI

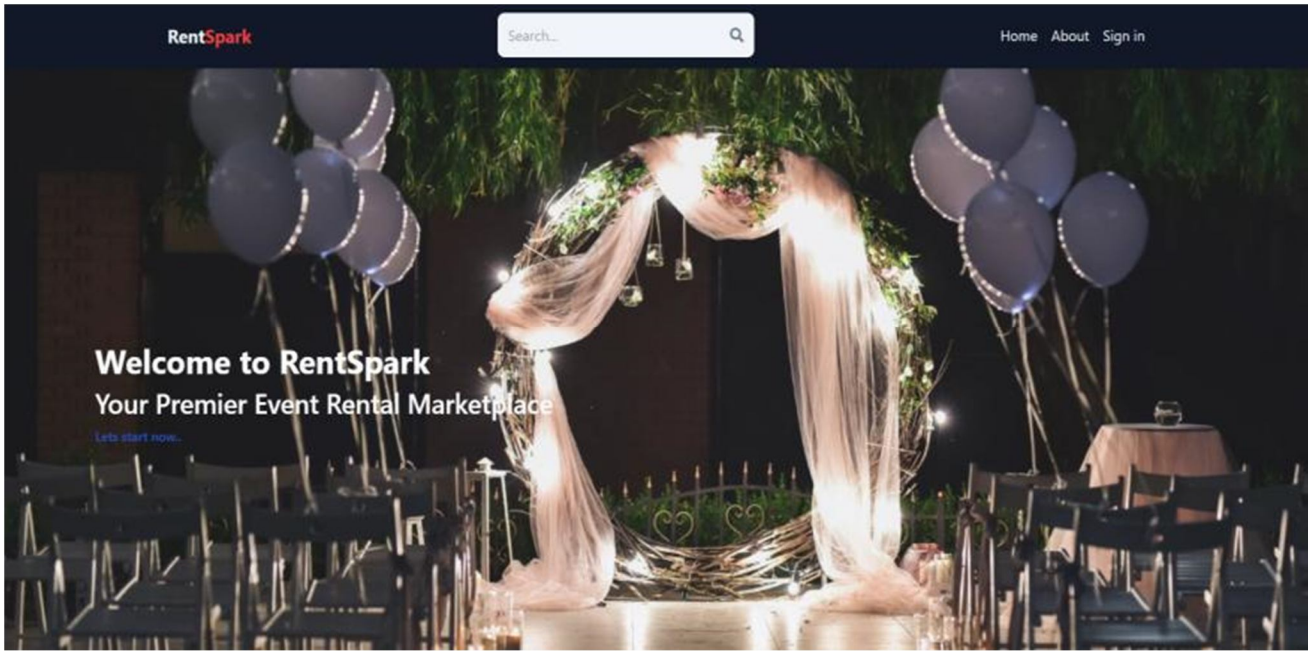


Fig: home page

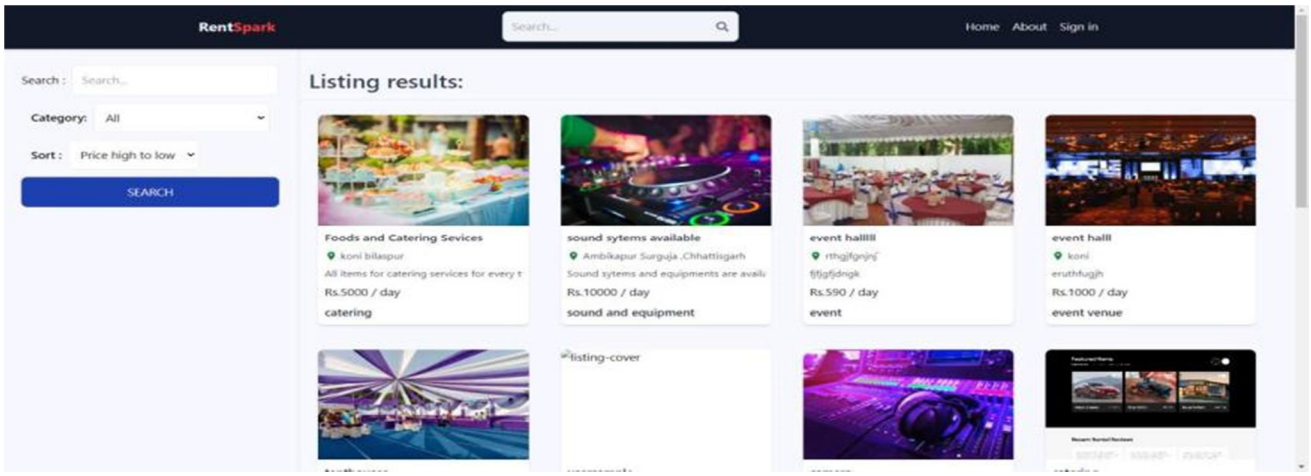


Fig: service page

VI. CONCLUSION

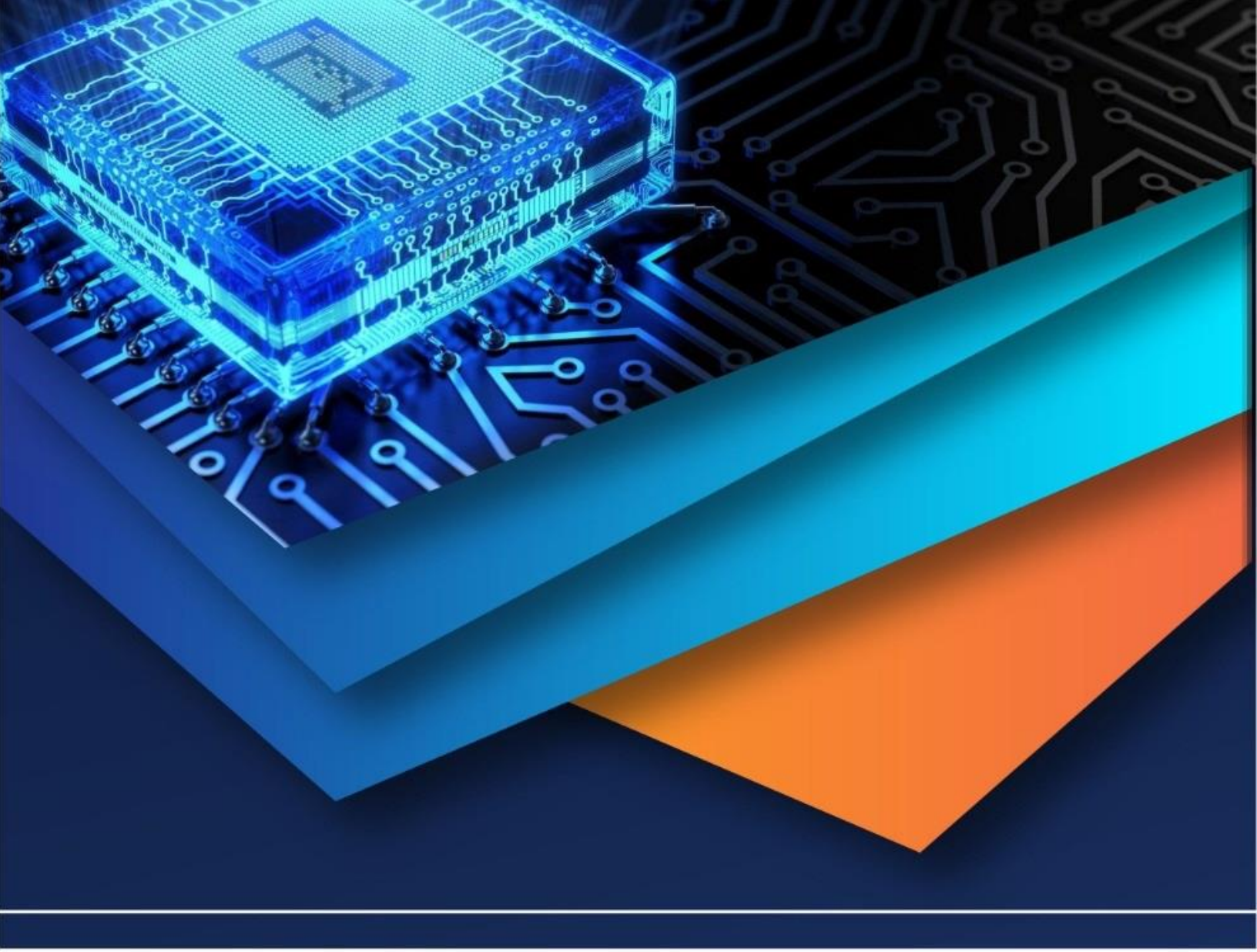
In conclusion, the development of RentSpark marks a significant milestone in the domain of event management and rental services. From the initial stages of discovery and market analysis to the iterative and agile development process, the project has evolved into a dynamic platform that addresses the challenges identified in existing systems. RentSpark stands as a testament to the power of user-centric design, collaborative development, and continuous improvement. By offering a unified ecosystem for event organizers and service providers, the platform streamlines the coordination of diverse services, promotes transparency, and enhances the overall user experience. The methodology employed, rooted in Agile principles, allowed for flexibility, adaptability, and responsiveness to user feedback. As RentSpark enters the post-launch phase, the focus shifts to continuous maintenance, monitoring, and iterative development, ensuring that the platform remains at the forefront of innovation in the ever-evolving landscape of event planning and collaborative consumption. The journey from concept to execution has been a collaborative effort, and the success of RentSpark is a testament to the dedication and expertise of the development team. Looking forward, RentSpark is poised to redefine the way events are planned and executed, fostering a community-driven approach to event management and rental services.

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