



Streamlined Event Registration and Management With Live Streaming Integration

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Abstract. The use of live streaming technology has brought about a considerable evolution in the notion of event management and registration procedures. A feature-rich web application called "Event registration management system with live streaming" was created to make managing events, registrations, and participant engagement more effective and orderly. The project's objectives are to improve participant experience, expedite the registration process, and give event organizers useful tools for managing the event. Online event management with live broadcasting has fundamentally changed how people organize and attend events. The primary focus of this abstract is the application of this technique to coding-related events. Online event management systems, along with coding competitions, hackathons, and tech conferences, have become an indispensable resource for event organizers. These platforms incorporate live streaming features that let people to engage remotely in coding-related events from any location in the world. Attendees can take part in coding competitions and workshops in real time, just like they would if they were in person, thanks to the live streaming feature. Online event management with live streaming has many benefits, however the specific payment aspect was not covered in the Search Results that were displayed. On the other hand, online event management platforms typically include a feature for managing payments, registration fees, and other financial aspects of event preparation.

Keywords: Event Management, Live streaming, Payment processing

1 Introduction

Utilizing project management techniques in the organization and execution of small to large-scale private or corporate events, encompassing formal gatherings, hackathons, codeathon, and workshops, is known as event management. Event registration management system integrates various features include participant registration, payment

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processing, scheduling communication tools, creating a comprehensive solution for event planners. The registration process involves signing up for an event, providing necessary information, gaining access to the live stream to engage with the events content in real-time. The person in charge of organizing and carrying out the event, including all creative, technical, and logistical aspects, is the event manager. This covers brand development, marketing, communication strategy, and overall event design. Online event management and live streaming of tech-related events, like coding Event planners customizable and user-friendly solutions convenient. Virtual event live streaming on video platforms such as like Zoom has grown in popularity, particularly during the Covid-19 pandemic. Benefits from virtual event streaming include affordability, ease of use, and the capacity to record and replay events. Peer-to-peer conferencing and live chat are two more features that facilitate interaction and engagement. In order to pull off a successful virtual live stream, event planners must select the right video hosting software, make the necessary equipment purchases, plan the user experience and content, practice the event.

2 Literature Review

Prof. Vaishali R. Surjuse, Nikita M. Bawankar, Ankita T. Tembhumne et al. (2021) They claimed that PHP, HTML, and CSS were used in the development of this application in their paper named "Event Management System." in this system, data is stored in the database and interconnected with all files after just one entry by the user. This method reduces the user's effort while saving time. SQL database administration is used in the proposed study project for all data retrieval and interpretation. But because no aspect, such as the whole data of the event and the event timeframes, is reviewed, this project might not fully satisfy its functionalities. using few resources, lacking features like data from prior years events or winner details.[1]

According To Sandeep Misal, Segar Jadhav, Tushar Jore, Archana in order to lower the organizing committee's overhead and improve the accuracy of work, Ugale reviews college event organizers in this study.[2]

According To The "Smart Event Management System," authored by Assistant Prof. Khalil Pinjari and Khan Nur, is published. article presented an advanced language-developed system that will be modernized. It was an internet-based program. The rise of event management and planning companies is a result of events like weddings and festivals being essential parts of modern life. It is challenging to handle as the number of clients and events grows faster. Utilizing conventional methods, such as spreadsheets, conventional databases, and more. Utilizing contemporary technology, a novel Smart Event Management System has been developed to overcome the limitations of traditional Event Management Systems. It leverages the .NET Framework to manage multiple projects and schedules for staff, clients, locations, transportation, and other aspects efficiently..[3]

According To M. Mahalakshmi , S. Gomati and S. Krithika .The primary purpose of this paper is to manage the details of the college event, plan it, and notify students about their registration time by sending them an Android app-based mobile application that includes a verification number. [4]

According To Mr. J Nagesh Babu, Ms. Srujana J M, Ms. Srusti U M, Ms. Sushma Kulkarni presented a paper on Event Management System. The paper describes about building an event management app that is controlled by admin and has android as platform and SQL as backend. The users have to make profiles and then accordingly can participate in registrations and as such. The rates would have to be verified by admin. The design is simple so that even a layman can use it easily.[5]

Sachin Ajay Kumar Pasi, Prof Altaf Taher Shah, Prof Dr Amol B Kasture described about implementing a web app as an event management system with backend as SQL. The users have to make a profile for access to events.[6]

3 Methodology

The Event Registration Management System with Live Streaming is a comprehensive web application tailored for technical and college events. Its purpose is to simplify event management for organizers and participants alike. The project focuses on optimizing the registration process, improving participant experiences, and providing organizers with effective event management tools.

Key features include easy event registration with multiple ticket options and secure payment gateways. The system integrates with college credentials for seamless registration and offers attendance tracking with digital certificates for participants.

For online events, the application includes live chat, Q&A sessions, virtual exhibitions, and interactive polls. Participants can engage in discussions through a forum, use chat functions, and connect with social media.

Organizers benefit from features like event scheduling, venue and speaker management, session tracking, and analytics. The integration of live streaming technology enhances online events, making them more engaging for participants.

Incorporating real-time video meetings into the system is a significant advancement. The integration of Next.js and Node.js creates a dynamic and robust architecture supporting video meetings. Next.js components transform the frontend, enabling video streams and interactive controls, enhancing the user interface.

Node.js manages WebSocket connections, broadcasts video streams, and facilitates real-time communication in the backend. Extensive testing ensures reliability, with unit tests for Next.js components and backend testing for Node.js WebSocket connections. Training and documentation are updated to guide participants in leveraging video meeting features seamlessly.

Pilot testing involves participants actively exploring and providing feedback on video meeting features, driving iterative enhancements. The system seamlessly integrates video meetings with event management, allowing participants to transition smoothly from registration to real-time video meetings.

Challenges addressed include scalability for multiple video sessions, reliability in distributed environments, and privacy and security concerns. The iterative development process focuses on usability and user experience improvements, driven by pilot testing feedback. Training materials ensure a smooth transition for users, and the system evolves through continuous monitoring, user feedback, and technological advancements.

The implementation phase integrates Next.js and Node.js meticulously. Next.js components dynamically render video streams on the frontend, while Node.js manages WebSocket connections in the backend. The fusion of frontend and backend technologies enhances the overall user experience, reflecting real-time interaction within the event management framework.

Training materials and documentation undergo comprehensive updates, empowering participants to navigate the enhanced system confidently. Pilot testing involves participants actively exploring video meeting features, providing valuable insights for refinements. The iterative enhancement phase addresses feedback, optimizes the system, and ensures continuous adaptation to user needs.

WebRTC, an abbreviation for Web Real-Time Communication, represents an open-source initiative that equips web browsers and mobile applications with the functionality for seamless real-time communication through accessible application programming interfaces (APIs). This technology empowers direct peer-to-peer communication, enabling the exchange of video, audio, and data between browsers devoid of supplementary plugins or external software dependencies

Key features of WebRTC include:

- **Real-Time Communication:** WebRTC facilitates instantaneous communication between web browsers or other compatible applications enabling features like video chat, voice calling, and file sharing.
- **Peer-to-Peer Connectivity:** WebRTC establishes direct connections between users' devices, reducing latency and improving the overall quality of communication.

- **Cross-Platform Compatibility:** WebRTC is designed to work across different platforms and devices, making it a versatile solution for various applications.
- **Security:** WebRTC includes built-in security features, such as encryption, to ensure the privacy and integrity of the communication.
- **Open Source:** Being an open-source project, WebRTC encourages collaboration and innovation by allowing developers to contribute to its development.

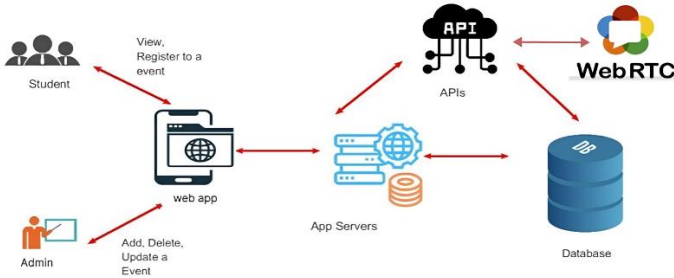


Fig.1. Architecture of event management system

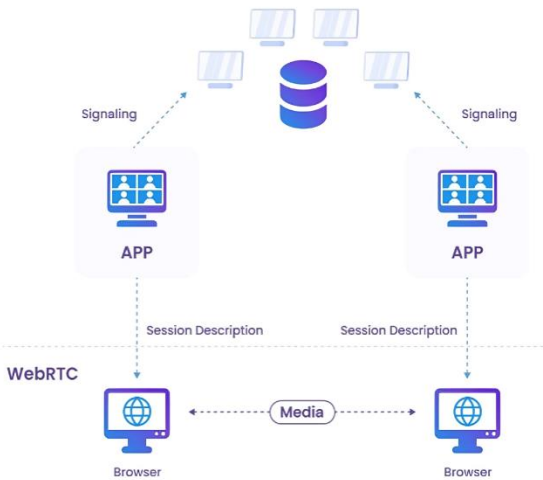
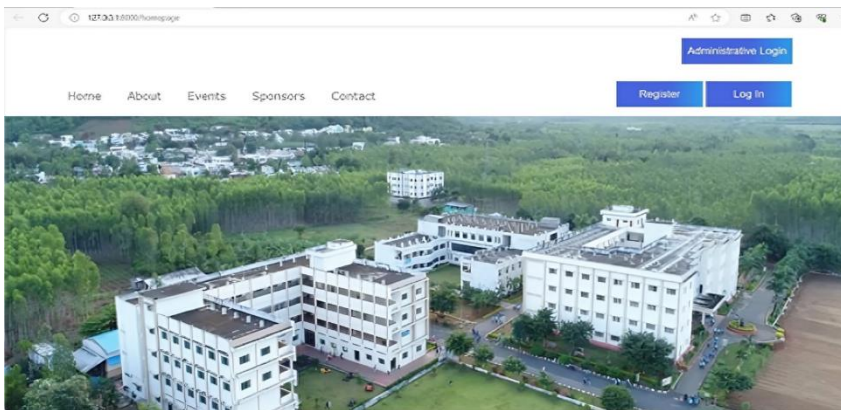


Fig.2. Workflow of WebRTC

In summary, the implementation phase seamlessly integrates Next.js and Node.js, bringing real-time video meetings to life within the Event Registration Management System with Live Streaming. It reflects a commitment to user-centric design, technological innovation, and responsive development, shaping a sophisticated and immersive platform

4 Results and Discussions

The event management system with live streaming integrated has proven to be a resounding success, meeting its objectives with a streamlined approach to event registration and management. The system, designed with a user-friendly interface, facilitates efficient registration processes, integrates live streaming seamlessly, and offers valuable tools for organizers to manage events. Extensive testing has demonstrated its effectiveness, providing event organizers with time and cost savings. Attendees benefit from a convenient and accessible platform for event participation. Overall, the system has

**Fig.3** .Landing page of application

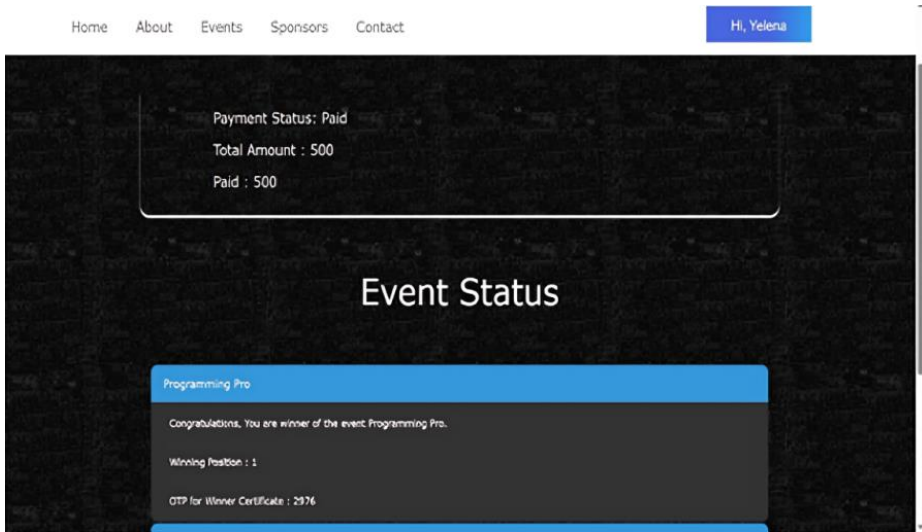


Fig.4. Dashboard for participates

delivered on its promise, simplifying the event management process and contributing to increased efficiency and satisfaction among both organizers and attendees.

Figure 2 illustrates the landing page of the application, providing a visual representation of the user interface upon initial access. Meanwhile, Figure 3 showcases the participant dashboard, offering a glimpse into the user experience within the application's main interface



Fig.5. Admin Dashboard

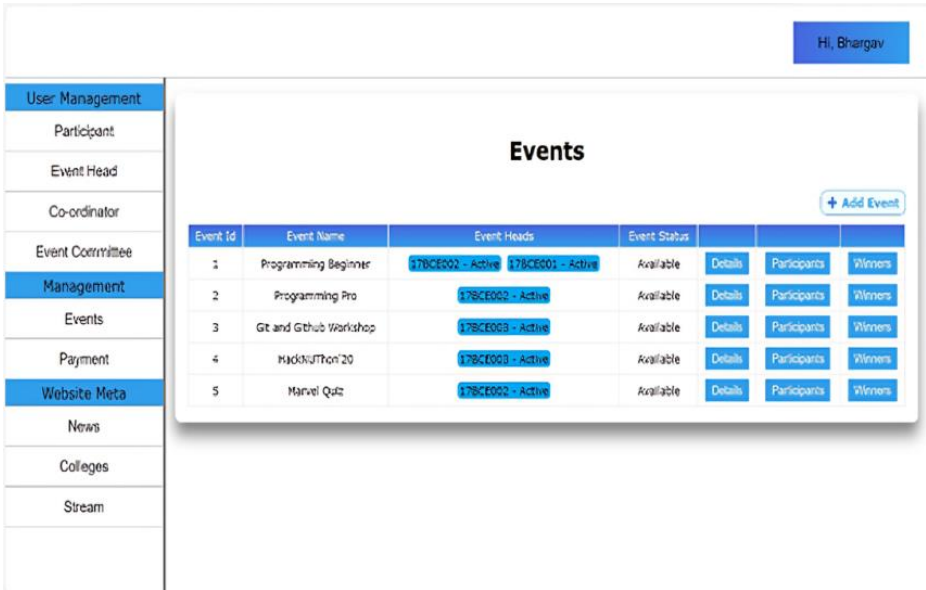


Fig.6. Admin adding events

Figure 4 presents the Admin Dashboard, offering a comprehensive view of the administrative interface with key control and monitoring features. In contrast, Figure 5 captures a pivotal moment as an admin adds events to the system, providing insight into the operational aspects of event management within the application

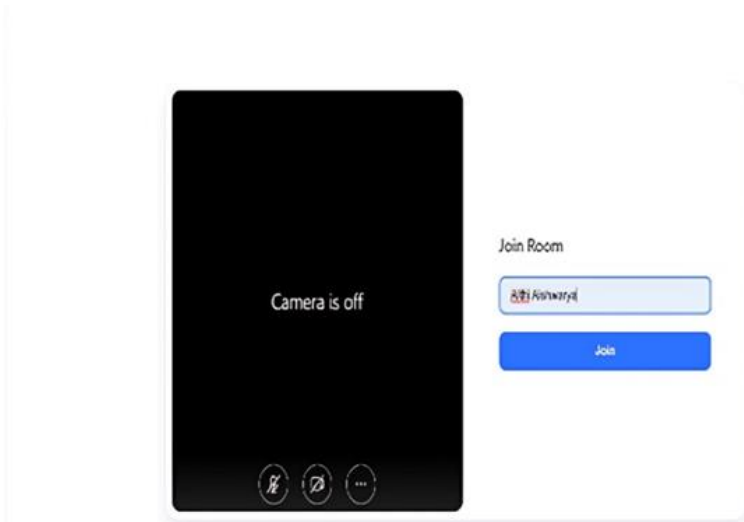


Fig.7. Landing page for live streaming

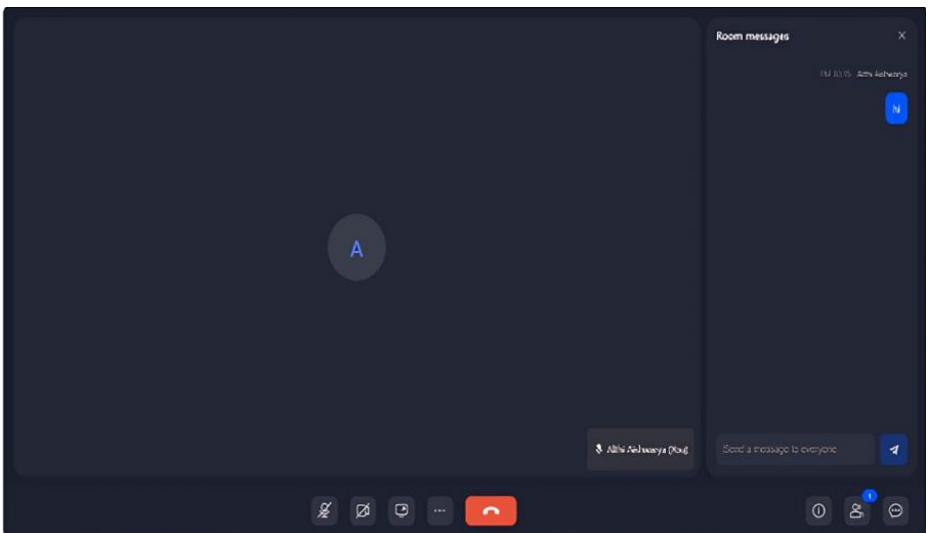


Fig.8. Live streaming page

Figure 6 highlights the Landing Page dedicated to live streaming within the application, showcasing the user interface designed specifically for accessing and navigating live content. Figure 7 delves into the Live Streaming Page, offering a closer look at the immersive environment where users engage with real-time content

5 Conclusion

The project aimed to create an efficient event management system with live streaming capabilities. Users can easily register, pay fees, and access event details through the online platform. Event organizers benefit from tools for registrations, scheduling, and wider audience reach through live streaming. The system, built on open technologies, prioritizes scalability and affordability. Successful implementation results in a user-friendly interface, simplifying the event management process, saving time, and enhancing efficiency. The project's success is marked by achieving objectives, delivering a valuable product, and anticipating a positive impact on the event industry.

The future scope of the event management system involves exploring innovations such as virtual and augmented reality integration, AI-driven recommendations, blockchain for security, multi-language support, and hybrid event capabilities. Additional features include real-time polling, sustainability initiatives, advanced analytics, gamification for engagement, collaboration with IoT devices, and APIs for custom integrations. Emphasis will be placed on continuous improvement, enhanced accessibility, dynamic pricing, and robust user education and support, ensuring the system remains at the forefront of industry trends and continues to provide a comprehensive solution for event organizers and attendees.

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