



## EVENT STREAM: REAL TIME WEB BASED EVENT MANAGEMENT

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### ABSTRACT

The College Event Management System is a comprehensive platform designed to streamline event planning and execution processes within academic institutions. The system centralizes event management, optimizing workflows to reduce administrative burdens and enhance collaboration among students, faculty, and administrators. Integrated modules within the system facilitate event creation, scheduling, user management, registration, promotion, feedback collection, and payment processing. Through automation of routine tasks, such as notification dispatches, the system minimizes manual effort and increases operational efficiency. The user-friendly interface allows efficient setup of events, role and access management, registration tracking, and logistics management. Additionally, the admin panel offers robust oversight capabilities, enabling administrators to monitor progress, allocate resources, and manage operations effectively. Secure payment processing and feedback collection tools further enhance the platform's utility. Developed using front-end technologies like HTML, CSS, and JavaScript, with MySQL and PHP handling the backend and database, this system provides a reliable and efficient solution for event management in colleges.

### Keywords:

Event Management, Centralized Platform, Scheduling, User Management, Admin Panel, Feedback Collection, Payment Processing, User-friendly Interface, Automation

### I. Introduction

Event management within academic institutions is a complex and multifaceted process that requires meticulous planning, coordination, and execution. The College Event Management System is designed to meet these needs by providing a centralized, automated platform to simplify the organization of events within educational settings. From student gatherings and academic conferences to workshops and cultural fests, colleges host numerous events that demand careful attention to logistics, resource allocation, and participant engagement. However, traditional methods of managing events, often involving fragmented systems and high manual effort, can lead to inefficiencies and communication issues. This project presents a web-based event management solution tailored to the specific requirements of college events, integrating essential functionalities such as user management, scheduling, promotion, registration, feedback collection, and secure payment processing into one unified system. By leveraging automation and a user-friendly interface, the College Event Management System empowers event organizers, administrators, and attendees to collaborate more effectively, making the event management process more seamless and efficient.

#### 1.2 Major challenges in the current literature in line with your proposed work

The existing literature on event management systems reveals several challenges that institutions face, particularly when organizing events in academic environments. Some of the main issues include:

- 1. Fragmentation of Tools:** Many institutions rely on disparate tools for different aspects of event management. For example, registration might be handled through a simple online form, while payments are processed through another platform. This fragmentation leads to a lack of cohesion and makes it difficult for organizers to have a complete view of the event planning and execution process.
- 2. Lack of Automation:** Routine tasks, such as sending reminders, tracking registrations, and managing attendance, are often done manually. The absence of automation for these repetitive tasks



increases the workload for organizers, leading to potential errors and delays. Automation can free up valuable time and allow organizers to focus on strategic aspects of event planning.

**3. Poor User Interface and Experience:** Many available event management tools have complex, unintuitive interfaces that are challenging for students, faculty, and administrators to use effectively. This poor user experience reduces engagement and satisfaction, making it harder to coordinate efficiently

**4. Limited Communication and Feedback Mechanisms:** Effective event management requires clear communication with attendees and gathering feedback post-event. Current tools often lack integrated feedback and communication channels, which are essential for understanding participants' experiences and making improvements for future events.

**5. Inefficient Payment Processing and Resource Management:** Handling financial transactions, resource allocation, and logistics is a core part of event management. Without a streamlined payment gateway and resource tracking, institutions struggle to manage budgets, allocate resources effectively, and avoid operational bottlenecks.

These challenges underscore the need for a more comprehensive, streamlined solution that can provide end-to-end support for managing events within academic institutions. Our proposed system aims to address these pain points by integrating all necessary functions into a single platform and incorporating automation to improve efficiency.

### **1.3 Solutions to those challenges which are present in the current working Web platform**

The College Event Management System addresses the aforementioned challenges by providing a centralized platform equipped with several advanced features designed to streamline the event management process. Below are the key solutions offered by the system:

**1. Centralized Platform with Integrated Modules:** The system combines essential event management functions, including user management, event scheduling, registration, feedback collection, and payment processing, into a single platform. This integration allows organizers to have a comprehensive view of all event-related activities in one place, eliminating the need to juggle between multiple tools.

**2. Automation of Routine Tasks:** Automation features are built into the system to handle repetitive tasks, such as sending notifications and reminders, managing registrations, and tracking attendance. By automating these processes, the system reduces the manual effort required by organizers, minimizes the risk of human error, and accelerates the overall event management workflow.

**3. User-Friendly Interface:** The platform is designed with an intuitive, user-friendly interface that makes it easy for users with varying technical skills to navigate. The system is accessible to students, faculty, and administrators, enabling them to collaborate effectively without the need for extensive training.

**4. Effective Communication and Feedback Collection:** The platform includes built-in communication channels that allow organizers to send announcements, reminders, and updates to participants directly. After each event, the system also enables attendees to provide feedback, allowing organizers to gather insights for future event improvements.

**5. Secure Payment Gateway and Resource Management:** The College Event Management System incorporates a secure payment processing module, allowing participants to pay for events directly through the platform. This integration streamlines financial transactions, provides transparency, and ensures security.

Additionally, the admin panel offers tools to allocate resources effectively, manage logistics, and track real-time event progress, facilitating smooth and professional event execution.

These solutions collectively aim to create a more efficient, organized, and user-friendly event management experience within academic institutions

### **1.4 Background/Motivation for the proposed work**

The need for a centralized, automated event management system in academic institutions arises from the increasing frequency and scale of events held on campuses. As colleges and universities continue



to host a diverse array of events—academic conferences, workshops, cultural festivals, and guest lectures—the demand for a more efficient and organized approach to event management has grown. Traditional methods, which often involve multiple tools and high levels of manual coordination, are no longer sufficient to meet these demands effectively.

Our project is motivated by the desire to simplify event organization and enhance collaboration among stakeholders in academic environments. With students, faculty, and administrators involved in event planning, coordination can be challenging, particularly when relying on fragmented systems. Additionally, participants have come to expect more streamlined and accessible event experiences, including easy registration, real-time updates, and secure online payment options.

The College Event Management System addresses these needs by providing a centralized platform that brings together all essential event management functions in one place. By automating routine tasks and providing a user-friendly interface, the system empowers users to organize and participate in events with minimal hassle. The motivation behind this project is to create a tool that not only meets the logistical needs of event organizers but also enhances the experience for participants, ultimately contributing to a more vibrant campus life.

### **1.5 Overview of the proposed work/scheme/model**

The College Event Management System is built using modern web development technologies, incorporating HTML, CSS, and JavaScript for the front-end, and MySQL and PHP for backend and database management. The platform is divided into multiple modules, each designed to handle a specific aspect of event management:

- 1. User Management Module:** This module allows administrators to create user roles, manage access levels, and assign responsibilities. Students, faculty, and staff members can register on the platform and participate in events based on their roles and permissions.
- 2. Event Scheduling and Promotion:** Event organizers can create and schedule events, providing details such as date, time, venue, and description. The platform also includes promotional tools to raise awareness of upcoming events through announcements and notifications.
- 3. Registration and Attendance Tracking:** Participants can register for events directly through the platform, with automated attendance tracking and check-in options to streamline event entry and monitoring.
- 4. Admin Panel for Oversight:** Administrators have access to a comprehensive admin panel, which provides real-time insights into event logistics, resource allocation, and overall progress. This panel enables administrators to monitor the status of events, make adjustments as needed, and ensure efficient resource usage.
- 5. Feedback Collection and Analytics:** After each event, participants can provide feedback through the platform, allowing organizers to gather insights on attendee satisfaction. The system also includes basic analytics tools to help organizers review event performance and make data-driven improvements for future events.
- 6. Secure Payment Gateway:** The platform includes a secure payment processing feature, allowing participants to make payments directly for ticketed events. This functionality ensures a seamless and professional financial transaction process, enhancing user trust and satisfaction.

The College Event Management System is a robust, user-friendly platform that caters to the unique needs of academic institutions, providing a streamlined, automated, and efficient approach to event management. With its comprehensive feature set and intuitive design, this system is well-suited to meet the demands of college event organizers and participants alike, ensuring successful events from start to finish.

## **II. Literature**

The web-based membership management system orchestrates an intricate, kaleidoscopic experience that seamlessly intertwines modern technologies to deliver a captivating, reimagined solution for member engagement. Built using frameworks like React or Angular for the frontend and Node.js or



Django for the backend, it delves into the labyrinth of user data, leveraging databases such as MySQL or MongoDB for efficient management. OAuth2 or JWT ensures secure, transcendent access to the system, while role-based access control (RBAC) beckons with the promise of tailored user experiences. Responsive design, powered by Bootstrap or Tailwind CSS, ensures the interface adapts beautifully across devices, like a verdant tapestry that stretches across all screens. The system incorporates REST APIs to connect with external services, enhancing functionality with real-time updates via Web Sockets, and uses caching with Redis to optimize performance at scale. Automated workflows streamline the user journey, from onboarding to renewal reminders, while detailed reporting tools allow administrators to delve deep into membership metrics, event attendance, and subscription trends. It enables the creation of rich, dynamic member profiles that capture personal information, preferences, and engagement history, alongside secure audit trails. Payment integrations with gateways like Stripe and PayPal ensure smooth financial transactions for subscriptions and donations. [1]

The online event management system reviewed by Bramhe et al. (2024) offers an in-depth exploration of contemporary approaches to managing events through web-based platforms, synthesizing various research findings and methodologies. The paper delves into the diverse techniques employed in these systems, emphasizing user-friendly design, automation, and seamless third-party service integrations. Event management platforms typically utilize web development frameworks such as React or Angular for crafting intuitive, interactive user interfaces, while backend operations such as event scheduling, registration, and tracking are powered by technologies like Node.js or Django. Databases like MySQL or MongoDB facilitate efficient storage and management of event-related data, including participant details, sponsors, and payments. Automation a key focus, with email and SMS integrations enabling timely reminders for event schedules, registration confirmations, and post-event feedback requests. [2] The article by Shah et al. (2023) provides a detailed exploration of Event Management Systems (EMS), examining the key technologies and methodologies used in their development. These systems leverage modern web frameworks such as React or Angular for the frontend, with backend technologies like Node.js and Django handling core functions such as event scheduling, registration, and tracking. Databases like MySQL or MongoDB are employed for efficient data management, including participant details, event schedules, and payment transactions. EMS platforms integrate secure user authentication, responsive design frameworks for mobile and desktop compatibility, and role-based access control (RBAC) to enhance security and user experience. They are designed for scalability, enabling them to manage both small and large events, and performance is optimized through techniques like caching and load balancing. Key benefits include centralized event management, real-time updates on participant counts, ticket availability, and session tracking, which enhance user engagement. [3]

In the article by Mishra et al. (2023), the Event Management System (EMS) leverages a variety of modern techniques to enhance both its functionality and user experience. The system employs a Single Page Application (SPA) architecture, enabling smooth and seamless navigation across pages without requiring full reloads, which greatly improves usability. To facilitate efficient data fetching and smooth communication between the front-end and back-end, the EMS integrates GraphQL and RESTful APIs, optimizing the flow of data and ensuring quick, reliable exchanges. A Content Management System (CMS) is integrated into the platform, allowing event organizers to easily manage and update event-related content such as schedules, speaker information, and promotional materials. Secure payment gateway integration, using services like Stripe or PayPal, ensures that transactions for ticket purchases are safe and secure. Automated email notifications are set up to send timely confirmations and reminders to participants, improving communication and reducing the likelihood of missed events or registrations. Additionally, the EMS incorporates data visualization tools, allowing event organizers to analyze and interpret engagement metrics, such as attendee numbers, session popularity, and feedback trends, to better tailor future events. [4]





In their article, Mohana and Anbumani (2022) discuss the design and features of an Online Event Management System that combines several web technologies such as HTML, CSS, JavaScript, PHP, and MySQL for both front-end and back-end development, offering a responsive and dynamic user interface while ensuring efficient data management. AJAX is utilized to enhance user experience by enabling partial page updates, which allows for smoother, faster interactions without full page reloads. Secure user authentication mechanisms are in place to protect participant data, ensuring that sensitive information remains safe. The system supports event registration and integrates popular payment gateways, making it easy for users to sign up and pay for events. Additionally, it includes data analytics features to monitor attendee engagement, providing event organizers with valuable insights. The system is designed with scalability in mind, allowing it to efficiently handle both small-scale and large-scale events, with real-time updates to keep organizers and participants informed. The platform offers several key advantages, including centralized event management, increased user convenience, process automation, cost-effectiveness, and powerful analytics capabilities, making it an effective solution for managing events of all sizes.[5]

In their study, Goyal, Ali, and Haider (2021) examine an Online Event Management System that incorporates various techniques to streamline the event planning and management process. The system is built using the MVC (Model-View-Controller) architecture, which separates business logic, user interface, and data management, enhancing both maintainability and scalability. On the front-end, HTML, CSS, and JavaScript are used to create a responsive and dynamic interface that adapts to various devices, while the back-end is powered by PHP and MySQL, which handle server-side operations and manage the event-related database efficiently. AJAX is employed to enable real-time interaction between users and the server, allowing for seamless updates without the need for full page reloads, improving the user experience. The system also integrates a secure payment gateway to facilitate online transactions, ensuring that users can easily and safely register for events. Role-based access control is implemented to restrict access to sensitive features based on user roles, further securing the platform. Additionally, the system integrates data analytics tools, offering valuable insights into event performance, participant engagement, and other key metrics, helping organizers optimize their events and better understand attendee behaviour. [6]

In the article by Harika, T., Ranjani, S., Kumari, M., & Sri, S. (2020), the College Event Management System is designed to simplify the planning, coordination, and execution of events within a college environment. The system utilizes a range of technologies to ensure smooth functionality and an intuitive user experience. HTML, CSS, and JavaScript are employed for creating a responsive and interactive front-end interface, while PHP handles server-side scripting to manage event logic and user interactions. MySQL is used as the database to store and manage key information, including participant details, event schedules, and registrations. AJAX is integrated to facilitate real-time data updates and asynchronous communication between the client and the server, improving system responsiveness and minimizing delays during interactions. Role-based access control (RBAC) is implemented to define specific permissions for different users, such as students, event coordinators, and administrators, ensuring secure and controlled access to the platform's features. The system also automates email notifications to keep participants and organizers informed about event updates, and utilizes cloud storage to securely store and manage event-related files, providing centralized, accessible, and reliable data management. This combination of features enhances the efficiency and organization of events, making the platform an effective solution for managing college events. [7]

In the article by May Paing Paing Zaw (2019), the Web-Based Event Management System (EMS) is designed to streamline the organization, registration, and management of events using modern web technologies. The system utilizes PHP for server-side scripting, enabling dynamic content generation and backend processing, while MySQL serves as the database for efficiently managing event details, participant registrations, schedules, and other related data. On the front end, HTML, CSS, and JavaScript are employed to create an intuitive, responsive, and user-friendly interface that enhances the overall user experience. To ensure smooth, real-time interactions between the client and server,



AJAX is implemented, enabling asynchronous communication that allows for data updates without the need for page reloads, resulting in a more seamless user experience. Additionally, the system incorporates role-based access control (RBAC), where different user roles—such as organizers, participants, and administrators—are assigned specific access privileges, ensuring that users can only access features relevant to their roles and responsibilities, further improving system security and usability.[8]

In their article "*Implementation of Event Planner*" (Mishra et al., 2020), published in the *International Journal on Recent and Innovation Trends in Computing and Communication*, the authors present the design and implementation of an Event Planner system aimed at simplifying event organization and management. The system is built using modern web technologies, including **HTML**, **CSS**, and **JavaScript** for a responsive front-end, and **PHP** for server-side scripting, with **MySQL** serving as the database for managing event details, participant registrations, and schedules. The use of **AJAX** enables real-time data updates and seamless asynchronous communication between the client and server, improving user experience by eliminating page reloads. Additionally, the system implements **role-based access control (RBAC)**, defining specific user roles such as organizers, participants, and administrators, each with appropriate access privileges. Automated email notifications ensure efficient communication with participants about event updates, while the overall system enhances efficiency, scalability, and ease of use in managing events, making it a powerful tool for organizers and attendees alike.[9]

The article "**The UPLB Express Ticketing System: A Web Application for Managing Admission to Campus Events**" by Llave, A. D. S., Monserrat, T. J. K. P., & Clarino, M. A. A. D. (2020) discusses the development and implementation of a web-based ticketing system designed to manage admissions to campus events at the University of the Philippines Los Baños (UPLB). The system aims to streamline the process of event registration, ticket distribution, and attendance management, offering a more efficient and user-friendly alternative to traditional ticketing methods. Built using modern web technologies, the system integrates features such as online ticket purchasing, event registration, and real-time ticket availability updates, ensuring a smooth user experience. It also includes backend functionalities that allow event organizers to manage ticket sales, track attendance, and generate reports on event participation. The platform supports secure payment gateways to handle transactions and incorporates user authentication for added security. Overall, the UPLB Express Ticketing System is designed to improve the efficiency of event management and provide a more accessible, digital solution for both organizers and attendees, reducing manual effort and enhancing event coordination. [10]

The article "**E-College: An ERP for Educational Institute**" by Gutte, A., Kate, N., Hulikere, A., & Kokate, S. (2014), published in the *International Journal of Computer Science and Engineering* (Vol. 2, Issue 3, pp. 134-137), presents the design and implementation of *E-College*, an Enterprise Resource Planning (ERP) system specifically developed for educational institutions. The system integrates various administrative and academic functions into a unified platform, enabling efficient management of student records, faculty details, course schedules, examinations, and other essential educational processes. By leveraging modern web technologies, *E-College* allows administrators, faculty, and students to access and manage information more effectively. The platform includes features such as automated attendance tracking, grade management, course registration, and student performance monitoring, all of which aim to streamline administrative tasks and improve operational efficiency. The system is designed to be user-friendly and scalable, allowing educational institutions of various sizes to implement it with ease. In addition, *E-College* provides real-time updates, ensuring that students and faculty have access to the latest information. Ultimately, the ERP system enhances the management of educational institutions by automating routine tasks, improving data accessibility, and fostering better communication among stakeholders.[11]

The article "**Android Application for College Events**" by Deshmukh, R., Rajbhar, V., Sankhe, M., & Kahlon, R. K. (2020), published in *International Research Journal of Engineering and Technology*



(IRJET, Vol. 7, pp. 56-72), presents the development of an Android application designed to facilitate the management and participation in college events. The app aims to streamline event registration, provide real-time event updates, and improve communication between organizers and participants. It allows students and faculty to view upcoming events, register for activities, and receive notifications about event schedules and changes. The application includes features like event categorization, event details display, and an interactive calendar for easy navigation. Additionally, the app is designed to be user-friendly and accessible, providing a platform for participants to engage with college events efficiently. By integrating real-time communication and notifications, the application helps keep participants informed about important updates, such as registration deadlines or changes in event timings. The article highlights the app's potential to improve event coordination and participation in college activities, ultimately fostering better engagement and communication within the academic community.[12]

The article "**Macma Membership Management System With QR Code**" by Yap, S. Y. S., & Aziz, R. A. (2020), published in the *International Journal of Advanced Science Computing and Engineering* (Vol. 2, Issue 1, pp. 1-13), discusses the design and implementation of a membership management system that incorporates QR code technology to streamline the process of member registration, verification, and access control. The system is designed to enhance the management of memberships for organizations, providing an efficient way to store and retrieve member data, track activities, and manage membership renewals. By integrating QR codes, the system allows members to easily access and update their profiles, register for events, and verify their membership status by scanning the QR code, thus reducing manual entry errors and improving overall convenience. The backend of the system is designed to handle member data, event registrations, and payment management securely, while the front-end interface provides a user-friendly experience for both administrators and members. Additionally, the use of QR codes improves the speed of member check-ins during events, offering a fast and contactless solution for access control. This integration of QR codes into the membership management system not only boosts efficiency but also enhances security, making it an effective solution for managing memberships in various organizations.[13]

In the article "**A Future for Event Management: The Analysis of Major Trends Impacting the Emerging Profession**" by Goldblatt, J. (2000), published in *Events Beyond 2000: Setting the Agenda* (pp. 1–9), the author explores the evolving landscape of the event management profession and identifies key trends that are shaping its future. Goldblatt discusses the rapid growth of the events industry, highlighting the increasing complexity of events and the growing demand for professional event planners who can manage large-scale and diverse events. The article analyzes factors such as technological advancements, globalization, and the rising importance of sustainability, all of which are significantly influencing event management practices. Goldblatt emphasizes the need for event professionals to adapt to these trends by adopting new tools and methodologies, such as digital technologies, to improve efficiency and enhance attendee experiences. The article also addresses the shift towards more strategic event planning, where events are seen as integral to achieving organizational goals and enhancing branding efforts. Ultimately, Goldblatt provides a forward-looking view of the event management field, suggesting that ongoing professional development, education, and innovation will be key to the future success of the profession.[14]

In the article "**Event Management Systems (EMS)**" by Shah, D. A., Vasudavan, H., & Razali, N. F. (2023), published in the *Journal of Applied Technology and Innovation* (Vol. 7, Issue 2, pp. 45-53), the authors explore the development and implementation of Event Management Systems (EMS), focusing on the technological advancements and methodologies that have transformed event planning and coordination. The paper discusses the various components of an EMS, including event registration, scheduling, participant management, and integration with external systems such as payment gateways and communication tools. Shah, Vasudavan, and Razali emphasize the importance of leveraging modern web technologies—such as cloud computing, mobile applications, and data analytics—alongside traditional event management functions to improve efficiency, scalability, and user



engagement. They also address the growing role of automation in EMS, highlighting how automated processes like reminders, confirmations, and ticket distribution can reduce administrative workload and enhance the overall attendee experience. The article further explores the integration of real-time data and analytics in EMS, enabling event organizers to monitor participant behavior, assess event performance, and make data-driven decisions for future events. Overall, the authors provide a comprehensive overview of EMS, highlighting their impact on the event industry and suggesting how these systems continue to evolve to meet the needs of both event organizers and attendees.[15]

In the paper "**Development of an Online-Based Management System to Facilitate School Events**" by Sama, H., Deu, I., Tjahyadi, S., Eryc, E., & Endy, E. (2024), presented at the *CoMBInES Conference on Management, Business, Innovation, Education and Social Sciences* (Vol. 4, No. 1, pp. 26-39), the authors propose an online-based system designed to improve the management of school events. The system aims to streamline various administrative and organizational tasks, including event planning, registration, scheduling, and coordination. The authors discuss the challenges schools face in managing events manually, and the paper outlines how an online management platform can help overcome these issues by automating and centralizing the event management process. Key features of the system include real-time updates, online registration for participants, automated notifications, and data analytics to track event performance. The platform also integrates tools for handling registrations, managing event schedules, and promoting events, which not only enhances efficiency but also ensures smoother communication between organizers, participants, and other stakeholders. By developing this system, the authors highlight the potential for educational institutions to improve their event management practices, increase participation, and ultimately enhance the overall experience for both organizers and attendees.[16]

In the article "**Design and Implementation of a Web-Based Information System for University Staff Union**" by Bala, M. M., Lawan, A. A., & Abdulrahman, S. M. (2024), published in the *Journal of Computational Innovation and Analytics (JCIA)* (Vol. 3, Issue 2, pp. 89-109), the authors discuss the development of a web-based information system tailored for managing the activities and operations of a university staff union. The system aims to improve the efficiency and accessibility of administrative processes within the union, such as membership registration, event coordination, internal communications, and document management. By leveraging modern web technologies, the system offers features like real-time updates, secure login and authentication, member profile management, and automated notifications. The authors highlight the advantages of moving from traditional, manual methods of operation to a digital platform, which not only streamlines operations but also enhances communication between union members and administrators. The paper details the system's architecture, including its use of **PHP** for server-side operations, **MySQL** for database management, and **HTML, CSS, and JavaScript** for the user interface, ensuring a responsive and user-friendly experience. The system also incorporates role-based access control (RBAC) to manage different user permissions, ensuring that only authorized individuals can access sensitive union data. Ultimately, the authors conclude that the web-based system enhances organizational efficiency, improves data management, and fosters better communication within the university staff union.[17]

In the paper "**Development of an Online-Based Management System to Facilitate School Events**" by Sama, H., Deu, I., Tjahyadi, S., Eryc, E., & Endy, E. (2024), presented at the *CoMBInES Conference on Management, Business, Innovation, Education, and Social Sciences* (Vol. 4, No. 1, pp. 26-39), the authors explore the creation of an online-based system designed to streamline the management of school events. The system is developed to address the challenges faced by schools in managing events manually, such as inefficiency, communication gaps, and the lack of real-time tracking. By automating various processes like event scheduling, participant registration, and task coordination, the system aims to significantly improve the efficiency and effectiveness of event management within educational institutions. Key features of the platform include automated notifications for event updates, real-time tracking of event progress, and centralized management of event-related data, allowing administrators and organizers to oversee all aspects of the event from a single interface. The system also integrates





tools for communication, allowing seamless interaction between event organizers, participants, and other stakeholders. Through this development, the authors highlight the importance of digital tools in transforming event management, making it more accessible, efficient, and responsive, ultimately enhancing the experience for both school administrators and event attendees.[18]

In the paper "**Web Application of College Event Management**" by Bhulakshmi, D., Naveen, U., Suresh, V., Atmakuri, L., & Reddy, T. R. (2024, February), published in *AIP Conference Proceedings* (Vol. 2742, No. 1), the authors discuss the development and implementation of a web-based application aimed at simplifying the management of college events. The system is designed to automate and streamline various aspects of event organization, including event scheduling, participant registration, and event promotion. The paper highlights the challenges colleges face in coordinating multiple events and emphasizes the need for a centralized platform that can improve efficiency and reduce manual errors. The application leverages modern web technologies such as **HTML**, **CSS**, **JavaScript**, and **PHP**, along with **MySQL** for database management, to create a user-friendly interface and ensure smooth backend functionality. Features of the web application include real-time updates, automated notifications for participants, and the ability to track registration and attendance. Additionally, the system supports role-based access, allowing administrators, event organizers, and participants to access different features based on their roles. The authors demonstrate how the system enhances communication and coordination among stakeholders, ultimately leading to more successful and organized college events. The paper concludes by emphasizing the potential of web applications to transform college event management, improving both the efficiency of the planning process and the overall event experience.[19]

In the article "**Designing a Web-Based Activity Management System for Enhanced Data Analytics Performance**" by Hartatik, H., Alfiana, F., & Wulandari, S. (2023), published in the *International Journal of Multidisciplinary Research and Literature* (Vol. 2, Issue 3, pp. 306-315), the authors present the design and implementation of a web-based activity management system focused on improving data analytics performance. The system is developed to streamline the management of various activities, facilitating the tracking, organizing, and analyzing of event-related data in a centralized platform. The paper highlights the importance of leveraging web technologies to improve data handling, with features such as real-time updates, user-friendly dashboards, and data visualization tools that enable administrators and stakeholders to make data-driven decisions. The authors emphasize the role of data analytics in optimizing event planning and operations, pointing out how the system can provide valuable insights into participant behavior, resource allocation, and event performance. The application utilizes technologies like **HTML**, **CSS**, **JavaScript**, and **PHP** for front-end and back-end development, along with **MySQL** for database management, ensuring both ease of use and scalability. The system's ability to analyze and present data in an accessible format is central to its design, offering users powerful tools for monitoring activity progress, evaluating outcomes, and improving overall event management strategies. The paper concludes by emphasizing the significant potential of web-based systems in enhancing operational efficiency and decision-making through advanced data analytics capabilities.[20]

### III. Methodology

The Web-Based Event Management System integrates key modules to streamline the event management process, ensuring a smooth and efficient experience for organizers and participants alike. These core modules include Event Creation and Scheduling, allowing organizers to set up and manage event details; User Management for controlling access and roles of participants; Promotion and Registration to facilitate participant engagement and sign-ups; Feedback Collection for post-event insights; and a Secure Payment Gateway for financial transactions. Built with **HTML**, **CSS**, **JavaScript** for the front-end, and **SQL** and **PHP** for backend functionality, the system provides a responsive, cohesive, and secure platform. The modular approach allows each component to operate seamlessly

within the lifecycle, enhancing collaboration, reducing manual tasks through automation, and delivering a user-friendly interface that meets the demands of academic institutions

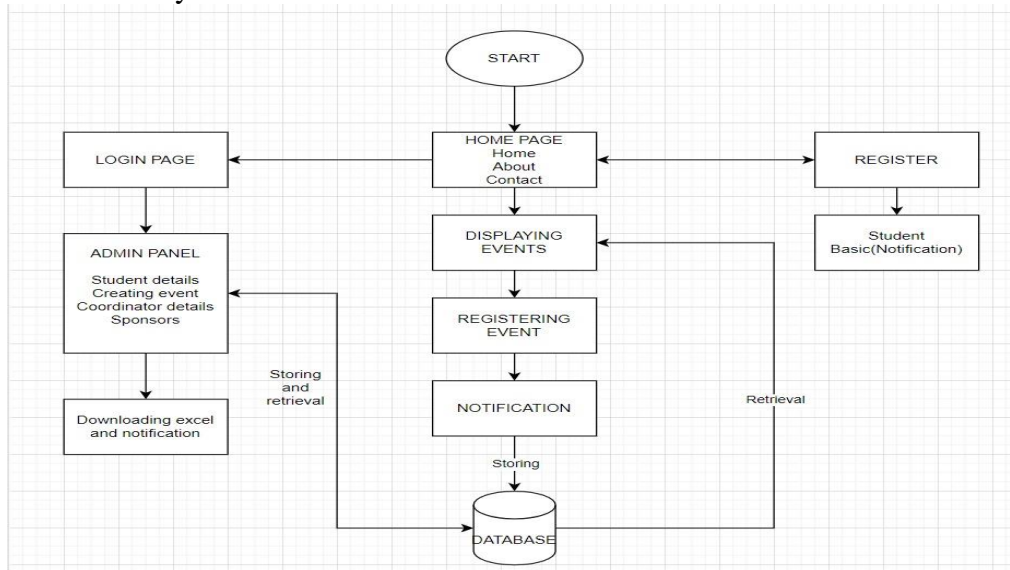


Figure 3.1: Work Flow

### 3.1: Basic and Event Registration

The Basic and Event Registration module is the initial gateway for users within the Web-Based Event Management System, allowing both students and staff to register on the platform and sign up for specific events. This module forms the backbone of user engagement and data collection, creating a seamless and structured entry point that simplifies the registration process for a variety of events. The frontend, designed with HTML and CSS, incorporates straightforward and visually appealing forms that facilitate an accessible user experience, minimizing barriers to entry. JavaScript is embedded for real-time validation of input fields, ensuring data accuracy and completeness before submission.

For instance, fields are checked for proper formatting, and mandatory fields are highlighted if left blank, which prevents users from accidentally submitting incomplete or erroneous data. On the backend, PHP scripts handle registration logic, such as user sign-ups, logins, and event enrolments. This setup securely stores user data in a MySQL database, safeguarding against unauthorized access while maintaining the integrity of each record. Additionally, the module incorporates role-based access control, assigning each user a unique identifier linked to specific permissions within the system. This identifier plays a crucial role in session management, ensuring that each user can only access information relevant to their assigned role, thereby enhancing security and privacy. SQL queries are designed to ensure efficient data handling, with user data being stored and retrieved through secure database interactions.

The focus on data protection within SQL statements, such as by using prepared statements to prevent SQL injection, is essential for managing sensitive information. Overall, the Basic and Event Registration module offers a structured, secure, and user-friendly registration experience, capturing essential user details to facilitate ongoing interactions within the platform. By enabling smooth role-based access and protecting data integrity, this module sets the foundation for a personalized user journey throughout the event lifecycle.



Figure 3.2: Basic Registration Page

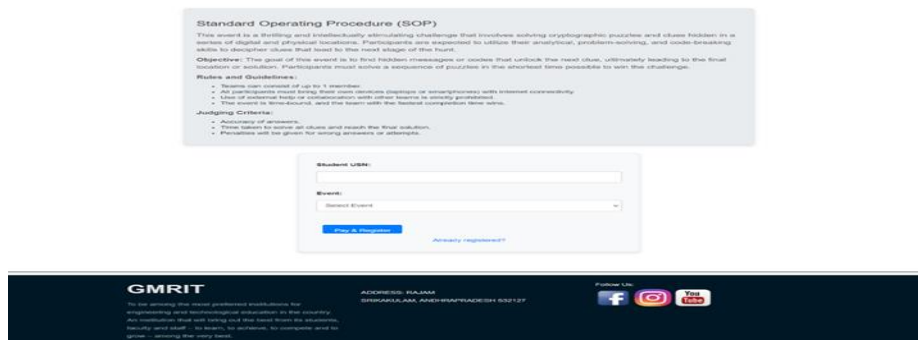


Figure 3.3: Event Registration Page

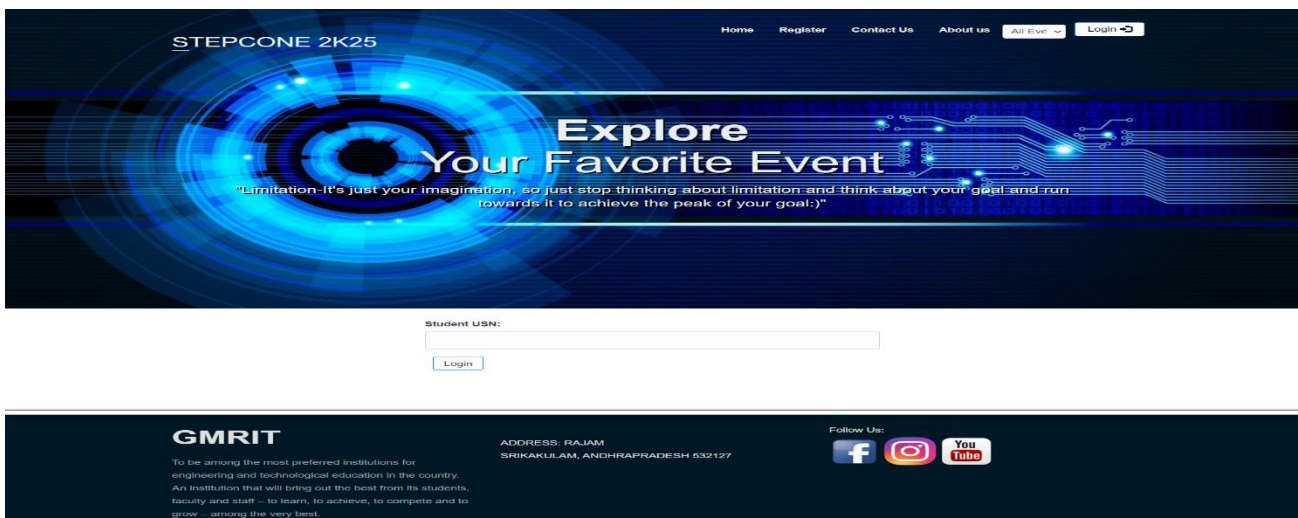


Figure 3.4: User Login

### 3.2: Admin Panel

The Admin Panel functions as the central command centre for administrators, providing a structured, accessible interface that allows for efficient management of roles, event data, and user information. Built with HTML and CSS for a visually organized frontend, the Admin Panel presents an intuitive user interface that optimizes administrative tasks. JavaScript enhances interactivity, enabling features such as dropdown menus, toggle switches, and real-time feedback, allowing administrators to access and manage various functionalities without navigation challenges. This dynamic interface allows



administrators to assign user roles, monitor event details, and oversee system data seamlessly, offering a streamlined and productive workspace. On the backend, PHP supports role-based access control, ensuring that each user has customized access permissions tailored to their role within the system. MySQL databases store, retrieve, and manage user registrations, event details, and system statistics, presenting these in real-time on the dashboard for continuous oversight. The Admin Panel enables administrators to conduct CRUD operations — Create, Read, Update, and Delete — on event data and user records, providing flexibility for adjustments, updates, or deletions as needed. SQL queries empower admins to retrieve specific information quickly, facilitating effective data management. For example, administrators can view and modify upcoming events, update user roles, and even monitor overall system performance through statistical data. This level of control is critical for efficiently allocating resources, tracking event progress, and ensuring each event’s success. With features that simplify these tasks, the Admin Panel helps centralize oversight, improve operational efficiency, and reduce manual processes, creating a smoother experience for organizers and participants alike.

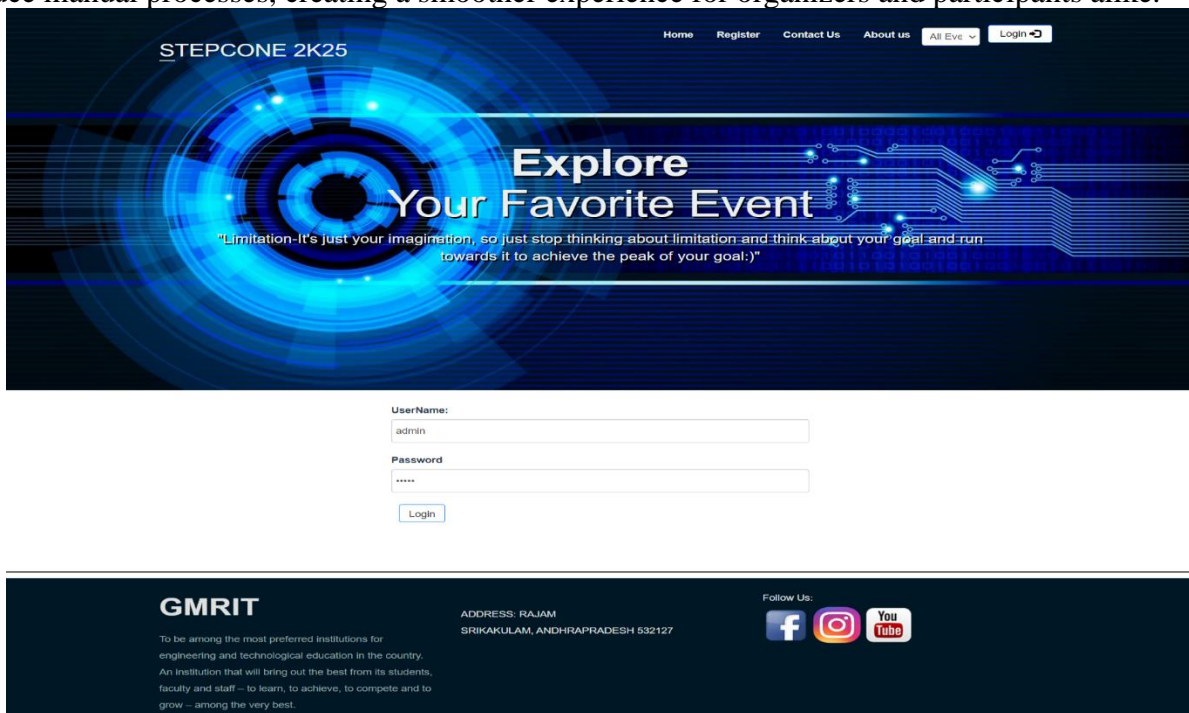


Figure 3.5: Admin Login Page



**Event Details**

Select Branch: All Events

Event Name	Internal Participants	External Participants	Total Participants	Price	Internal Amount	External Amount	Total Amount	Student Coordinator	Staff Coordinator	Date	Time	Location	Actions
Cryptohunt	1	0	1	100	100	0	100	Praywal Srinivas	Praywal Srinivas	2020-11-16	3.00pm	135 Room	Delete Update
Search-it	2	0	2	50	100	0	100	Narendra	Praywal Srinivas	2020-11-16	1.00pm	020 Lab	Delete Update
Technical-Quiz	2	0	2	50	100	0	100	Ajju.A	Suparna.A	2020-11-16	11.00am	136 Room	Delete Update
Competitive-Coding	1	0	1	50	50	0	50	Sanjana	Geetha	2020-11-16	9.30am	020 Lab	Delete Update
Pubg	2	0	2	50	100	0	100	Nikhil Bhat	Radha	2020-10-17	10.00am	121 Lab	Delete Update
Counter-Strike	1	0	1	100	100	0	100	Pruthi P	Usha.D.R	2020-10-17	11.00am	122 Lab	Delete Update
Fashion-Show	1	0	1	200	200	0	200	Anshuman.A.N	Deeksha.G	2020-10-17	9.30pm	ON Stage	Delete Update
Dance	1	0	1	100	100	0	100	Abhinandan.A	Deeksha.Palgar	2020-10-17	7.00pm	ON Stage	Delete Update
Singing	0	0	0	50	0	0	0	Suraj Upadhyay	Shubha Naik	2020-10-17	5.00pm	ON Stage	Delete Update
Svt-Idol	0	0	0	100	0	0	0	Imran Khalil Khan	Saraj Patgar	2020-10-17	6.00pm	ON Stage	Delete Update
Cooking-Without-Fire	0	0	0	50	0	0	0	Mythi	Reshma Hittalmakhi	2020-10-16	10.30am	123 Room	Delete Update
Short-Movie	0	0	0	200	0	0	0	Pratyush Mishra	Annanya.A.G	2020-10-16	10.00am	021 Lab	Delete Update
Mehandi	0	0	0	100	0	0	0	Kavya	Sushma	2020-11-12	3pm	021 Lab	Delete Update
Rangoli	0	0	0	50	0	0	0	Rishitha	Bhavya	0000-00-00	2.00pm	Quadrangle	Delete Update
Paper Presentation	0	0	0	200	0	0	0	Praywal Srinivas	K.Aravind	2022-12-22	3.00 PM	NT-LAB	Delete Update
Rambo	0	0	0	200	0	0	0	Praywal Srinivas	K.Aravind	2024-10-17	3.00 PM	NT-LAB	Delete Update
<b>Total</b>	<b>11</b>	<b>0</b>	<b>11</b>		<b>850</b>	<b>0</b>	<b>850</b>						

[Create New Event](#)

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To be among the most preferred institutions for engineering and technological education in the country. An institution that will bring out the best from its students, faculty and staff – to learn, to achieve, to compete and to grow – among the very best.

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Follow Us:

Figure 3.6: Admin Page

### 3.3: Payment Gateway

The Payment Gateway module is essential for secure financial transactions within the event management system, enabling users to process registration fees and donations safely and efficiently. The frontend is crafted with HTML, CSS, and JavaScript to offer a simple yet responsive payment form, guiding users smoothly through each step of the payment process. This interface emphasizes usability, ensuring that users encounter minimal friction when submitting payment details. JavaScript’s input validation checks fields like credit card numbers and expiration dates, reducing errors and enhancing security. On the backend, PHP scripts manage interactions with a secure, external payment gateway API, ensuring that all transactions are processed according to industry-standard security protocols. The integration with an external API adds a layer of protection by encrypting sensitive information, such as credit card details, ensuring these are not stored on the platform’s servers. MySQL databases track transaction records, associating each payment with specific events and users. This data structure enables easy access to payment histories, supporting receipt generation, refunds, and confirmation emails, which users can rely on for their financial documentation. SQL queries handle data retrieval efficiently, linking each transaction to its corresponding event and user profile, which is crucial for accurate reporting and management. By simplifying the payment process while prioritizing security, the Payment Gateway module promotes user confidence, encouraging timely registrations and contributions. This module not only enhances the financial aspect of the platform but also reduces manual processing for administrators, leading to a streamlined experience that fosters higher registration rates and supports fundraising efforts.

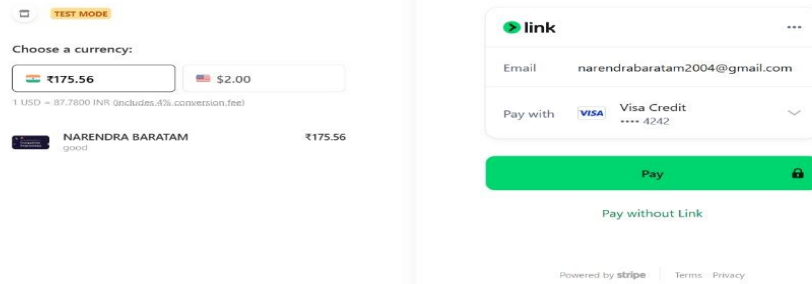


Figure 3.7: Test Module (payment gateway)

### 3. 4: Notifications via E-Mail

The Notifications via E-Mail module automates communication between organizers and participants, sending timely updates, reminders, and confirmations throughout the event lifecycle. This proactive approach to communication keeps users informed and engaged, fostering stronger connections with the event organizers. PHP's mail() function or an external email API, such as SendGrid or Mailgun, can trigger customized emails based on user actions or specific event schedules, reducing the need for manual intervention. For example, participants receive confirmation emails upon registration, as well as reminders leading up to the event date. SQL queries monitor the registration and event status within the database, automatically scheduling email triggers when users register, one week before an event, or on the day of the event. This setup ensures that participants stay informed of any changes, thereby enhancing engagement and reducing last-minute confusion. Email templates are customized for different types of notifications, such as registration confirmation, schedule changes, or post-event feedback requests. By keeping users up to date on key event details without administrative effort, this module ensures that participants remain well-informed, which is critical for a successful event experience. Additionally, the automation of email notifications reduces the workload for administrative staff, who can instead focus on other important tasks. This efficient communication strategy not only saves time but also strengthens the relationship between the platform and its users, fostering trust and increasing overall satisfaction.

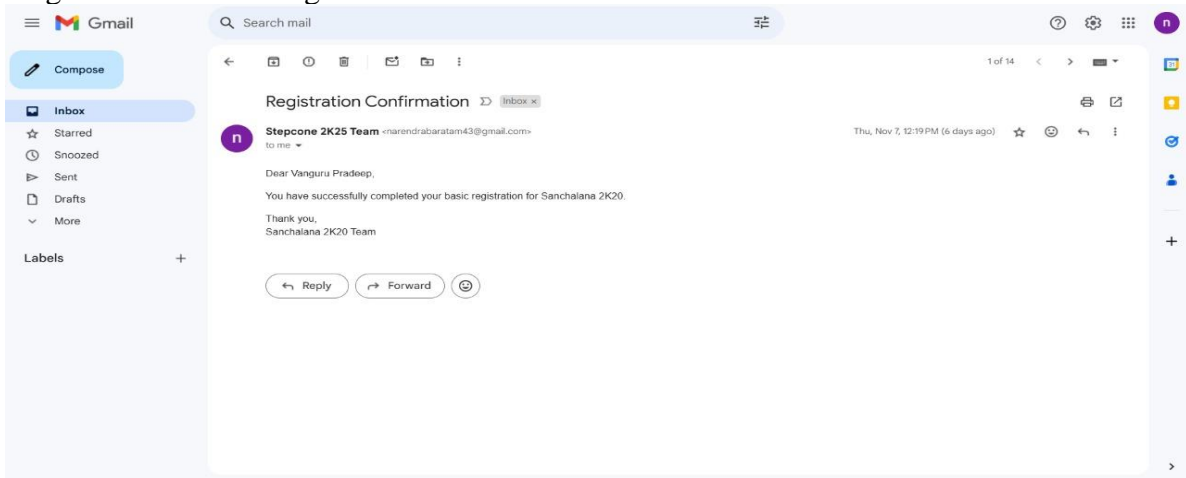


Figure 3.8: Notifications Via E-mail

### Module 5: Update and Delete (Student & Staff)

The Update and Delete module empower administrators to manage user records effectively by providing functionalities for updating or deleting data as needed. The frontend is designed with accessible HTML forms that make it easy for administrators to input modifications, complemented by

CSS for a visually cohesive design. JavaScript validates these inputs to ensure accurate updates, reducing potential errors and improving the user experience. On the backend, PHP scripts execute SQL UPDATE and DELETE statements, securely modifying user records as per the requirements. This role-based access control ensures that only authorized personnel can make modifications, which is essential for data security. MySQL databases link updates to associated user activities, such as event registrations, which maintains a consistent record across the system and prevents data discrepancies. For example, when a user’s profile is updated or deleted, all associated event histories and interactions remain correctly reflected, which ensures transparency and data accuracy throughout the system. By enabling real-time updates, the Pupation and Deletion module ensures that administrators can keep the database current, supporting accurate record-keeping. This function is crucial for maintaining data reliability, as it allows for adjustments without interrupting ongoing activities. The flexibility of this module contributes to the platform's overall robustness, ensuring that data integrity and user trust remain paramount.

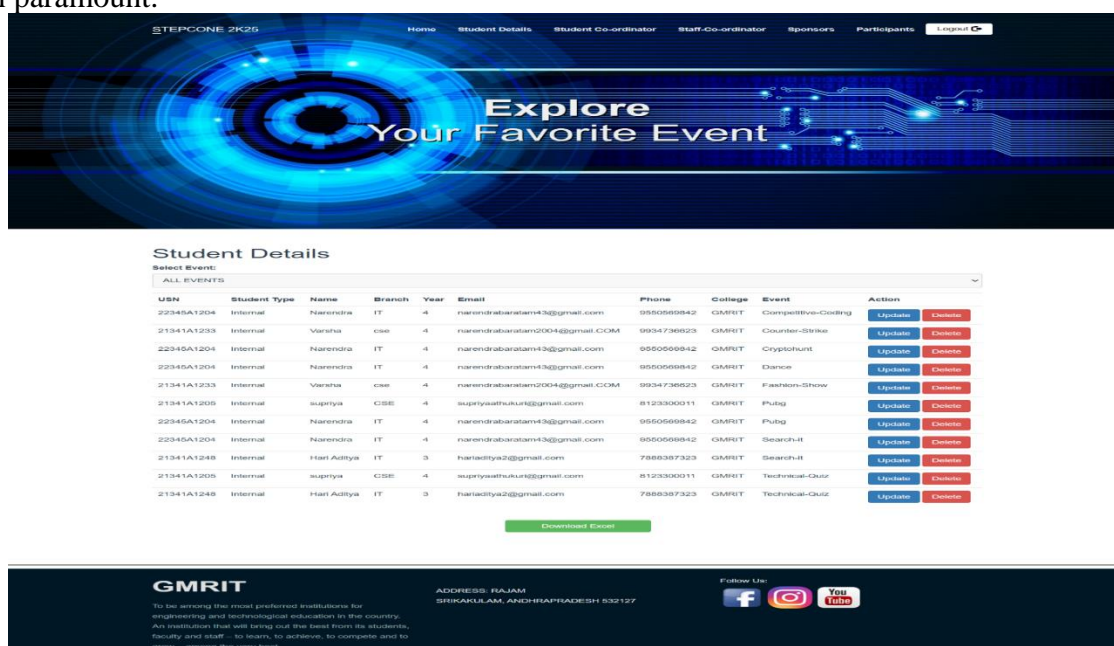


Figure 3.9: Update and Deletion

### 3. 6: Event Creation and Scheduling

The Event Creation and Scheduling module enables administrators to plan, schedule, and manage events, providing tools to define essential details like event duration, location, and specific requirements. With HTML and CSS forming the frontend, this module offers a user-friendly form where administrators can input event information in an intuitive layout. JavaScript is employed to validate fields such as date and time, ensuring proper formatting and reducing errors before submission. This streamlined frontend design facilitates efficient data entry, making it straightforward for administrators to define and modify event details. Backend PHP scripts handle data storage, working alongside MySQL to organize event records in a secure and accessible manner. This setup allows for seamless retrieval, modification, and deletion of events, ensuring that scheduling data remains current and well-structured. SQL queries are used to retrieve event information, enabling the display of upcoming events to all users while allowing administrators to update or reschedule as necessary. This level of control enables administrators to manage multiple events simultaneously, creating a structured timeline that improves operational flow and participant experience. By facilitating accurate scheduling and robust data management, the Event Creation and Scheduling module ensures that participants and organizers stay informed, allowing for smooth event operations that maximize engagement and participation.

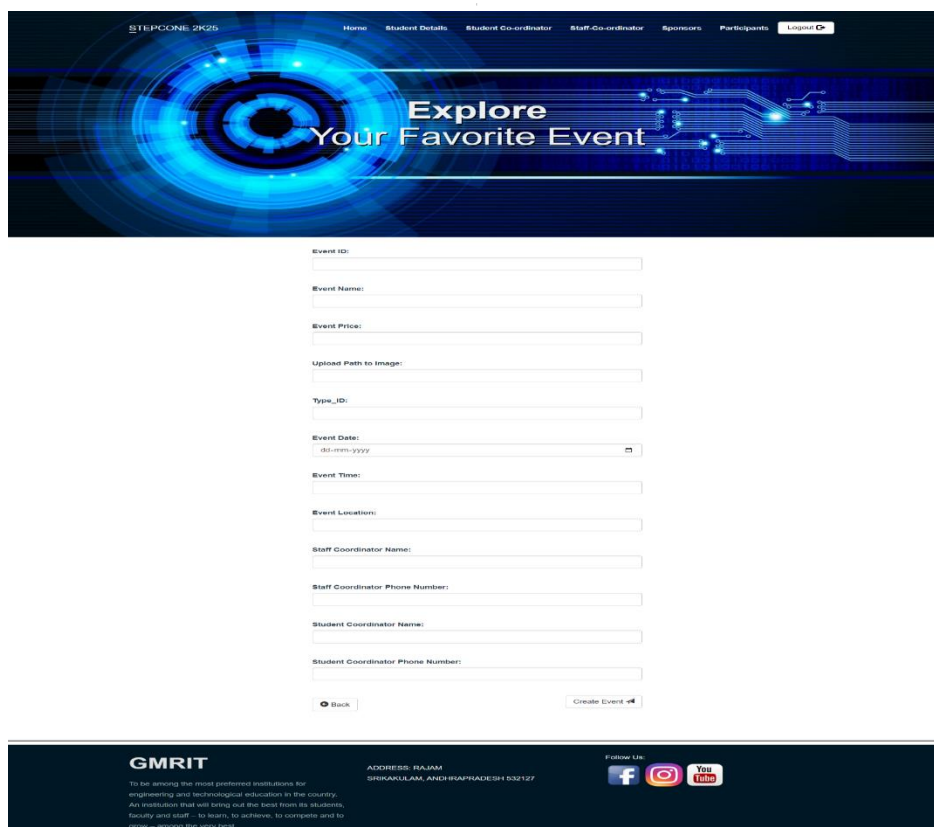


Figure 4.0: Event Creation and Scheduling

#### IV. Conclusion

The integrated event management system provides a secure, user-friendly experience that supports students, staff, and administrators through each stage of the event lifecycle. This system combines key features—user registration, administrative control, payment processing, automated notifications, data management, and event scheduling—into a cohesive framework that optimizes both user engagement and operational efficiency. With real-time data handling, automated communications, and a structured, role-based access control system, the platform minimizes manual tasks, reduces errors, and ensures strong data security, benefiting both users and administrators. The intuitive front-end design paired with robust back-end operations ensures smooth interactions, from accurate form validations to seamless payment transactions, creating an end-to-end experience that is straightforward and reliable. Additionally, the modular architecture allows for easy adjustments and scalability, making it adaptable for future needs or additional functionalities. By fostering a transparent and adaptable environment, the system effectively supports diverse user roles, maintains data integrity, and ensures reliable event operations. This approach establishes a resilient foundation for event management that not only meets current logistical needs but also builds trust and engagement among all stakeholders, contributing to the long-term success and growth of the platform.

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