BRACT's

Vishwakarma Institute of Information Technology

PROJECT REPORT ON

WEB APPLICATION FOR DEPARTMENT SPECIFIC EVENTS

DEPARTMENT OF

COMPUTER SCIENCE AND ENGINEERING - ARTIFICIAL INTELLIGENCE

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Table of Contents

PROJECT TITLE:

Web application for Department specific Events

ABSTRACT

The goal of the ambitious Department-Specific Events Website project is to completely transform the way departmental events are planned and handled. In order to create a dynamic platform that allows users and the database to interact seamlessly, the project combines powerful backend solutions like Node.js and MongoDB with frontend technologies like HTML and CSS. This initiative was inspired by the fact that the CSE AI department did not previously have a dedicated event website. Seeing this gap, the objective is to give students an easy-to-use interface so they may register for events that interest them, investigate the activities that are offered, and expedite the payment processing procedure with a user-friendly structure. Simultaneously, an administration panel will enable authorised workers to effectively oversee events through the addition, modification, and removal of event details, in addition to gaining access to registered student data for certain events. The project seeks to improve accessibility and efficiency by streamlining departmental event management processes through the integration of these state-of-the-art technologies. The platform aims to reinvent the experience for administrators and students by seamlessly integrating cutting-edge online technologies and providing a comprehensive solution to the numerous difficulties related to event organisation. This initiative's main goal is to create a lively and interactive academic environment by allowing for flexible event planning and promoting widespread involvement, which will eventually help to create an environment where academics feel engaged and enriches themselves. Furthermore, the CSE AI department hopes to foster community building and collaboration through the Department-Specific Events Website project. The platform facilitates the creation of connections between students, faculty, and staff by centralising registration and event information. The project aims to promote interdisciplinary cooperation and dismantle silos through the sharing of experiences and involvement in various activities. The website serves as a focal point for departmental activities, which not only increases event visibility but fosters a sense of community and belonging among academic community members. In the end, this collaborative spirit contributes to a more vibrant and coherent academic ecosystem by enhancing the academic experience and laying the foundation for lasting relationships and future partnerships.

INTRODUCTION

In today's academic landscape, the orchestration of department-specific events presents a formidable task. Traditional approaches to event management typically involve labor- intensive and error-prone manual processes. These methods, rooted in paper-based systems or basic spreadsheets, often struggle to keep pace with the demands of modern education. As a result, they hinder rather than facilitate student engagement and the cultivation of a dynamic learning environment. These outdated practices manifest in various challenges. Firstly, manual event management processes are inherently time- consuming. Coordinators must dedicate significant hours to tasks such as updating event information, managing registrations, and processing payments. This inefficiency not only burdens administrative staff but also limits their capacity to focus on other crucial aspects of academic planning and development. Moreover, reliance on manual processes increases the likelihood of errors. From data entry mistakes to miscommunications, the potential for inaccuracies is considerable. These errors can have far-reaching consequences, ranging from logistical disruptions to student dissatisfaction. Furthermore, the lack of real-time visibility into event data exacerbates these challenges, making it difficult for administrators to monitor participation levels or identify emerging trends. In this context, the Department-Specific Events Website project emerges as a beacon of innovation. By harnessing the power of modern web technologies, this project aims to revolutionize event management within academic departments. Through the integration of frontend technologies like HTML and CSS, the project promises to deliver a visually appealing and user-friendly interface. This interface will empower students to effortlessly browse through event listings, access detailed information, and seamlessly register for activities—all from the comfort of their devices. Meanwhile, backend technologies such as Node.js and MongoDB will underpin the system's robust functionality. Node.js, known for its asynchronous event-driven architecture, ensures optimal performance and scalability.

MongoDB, a flexible NoSQL database, enables efficient data storage and retrieval, accommodating the dynamic nature of event-related information. Together, these technologies form the backbone of a modern event management platform that promises to streamline processes, enhance accuracy, and elevate the overall student experience. By modernizing event management practices, the Department -Specific Events Website project seeks to remove barriers to student engagement and create a more vibrant learning environment. Through automation, real-time data insights, and intuitive user interfaces, the project aims to empower administrators and students alike, facilitating seamless coordination and

participation in departmental events. In doing so, it lays the groundwork for a future where event management is not just a task but a catalyst for academic excellence and community engagement. Our solution capitalizes on modern web

technologies to revolutionize event organization. By integrating frontend technologies like HTML and CSS, we ensure a visually appealing and intuitive user interface. This interface allows students to seamlessly browse events, register for their desired activities, and securely process payments. Simultaneously, administrators benefit from backend technologies such as Node.js and MongoDB. These powerful tools enable efficient data storage, retrieval, and manipulation, empowering administrators to manage events with unprecedented ease and accuracy.

In today's fast-paced digital landscape, the adoption of such technologies is paramount. HTML and CSS provide the foundation for creating visually engaging web pages, enhancing user experience and accessibility. Node.js, renowned for its scalability and real- time capabilities, ensures robust backend functionality, while MongoDB's flexibility and scalability make it an ideal choice for handling complex data structures. For students, our solution offers unparalleled convenience and accessibility. Through an intuitive interface, they can effortlessly explore events, register for activities, and complete transactions—all within a single platform. Administrators, on the other hand, benefit from streamlined event management processes. With the ability to add, edit, or remove events at their discretion, as well as monitor student registrations in real-time, administrators can ensure the smooth execution of departmental activities. In summary, the Department-Specific Events Website project represents a paradigm shift in event management within academic departments. By harnessing the power of modern web technologies, we aim to foster student engagement, promote a vibrant learning environment, and streamline administrative processes—all while ensuring accessibility and efficiency for all stakeholders involved.

OBJECTIVES

The objectives of this project are as follows:

1. User-Friendly Frontend Interface: The frontend interface of the Department-Specific Events Website will be meticulously crafted using HTML and CSS to offer a seamless browsing experience for students. Students will be able to easily explore available events, view event details, and register for their desired activities with minimal effort. Attention will be paid to design elements such as color schemes, typography, and visual hierarchy to ensure a visually appealing and user-friendly interface.

2. Robust Backend System: The backend system will be built on Node.js, a powerful JavaScript runtime, and MongoDB, a scalable NoSQL database. This combination offers flexibility and scalability, making it ideal for managing event data efficiently. Node.js will handle server-side logic, routing, and API integration, while MongoDB will store and retrieve event information in a structured manner.

3. Secure Payment Processing: To facilitate seamless transactions for event registrations, secure payment processing functionality will be integrated into the website. This will involve implementing industry-standard encryption protocols and integrating with trusted payment gateways to ensure the security of sensitive financial information.

4. Intuitive Administrative Portal: An intuitive administrative portal will be developed with authentication features to grant authorized personnel access to manage events. The portal will feature a user-friendly dashboard where administrators can add, edit, and delete event details, as well as monitor student registrations in real-time.

5. Cross-Platform Compatibility and Responsive Design: Ensuring cross-platform compatibility and responsive design is crucial to enhancing accessibility for users across various devices, including desktops, laptops, tablets, and smartphones. The website will be designed and tested to adapt seamlessly to different screen sizes and resolutions, utilizing responsive design techniques such as fluid grids, flexible images, and media queries.

TECHNOLOGY USED

The following frontend and backend technologies are used in this project:

- **Frontend Technology:**

1. HTML (Hypertext Markup Language): Used for structuring the web pages and content presentation.
2. CSS (Cascading Style Sheets): Used for styling the HTML elements, defining layout, colors, fonts, etc.
3. React: React allows for the creation of reusable UI components, which can significantly streamline the development process and enhance code maintainability.

- **Backend Technology:**

1. Node.js: A JavaScript runtime environment that executes JavaScript code outside a web browser, commonly used for server-side scripting.
2. MongoDB: A NoSQL database program, used for storing and managing event- related data in a flexible and scalable manner.

ER DIAGRAM:

The below ER diagram consists of 6 tables namely, Student, Department, Registration, Organizer, Event, Group. Description about this tables is given below :

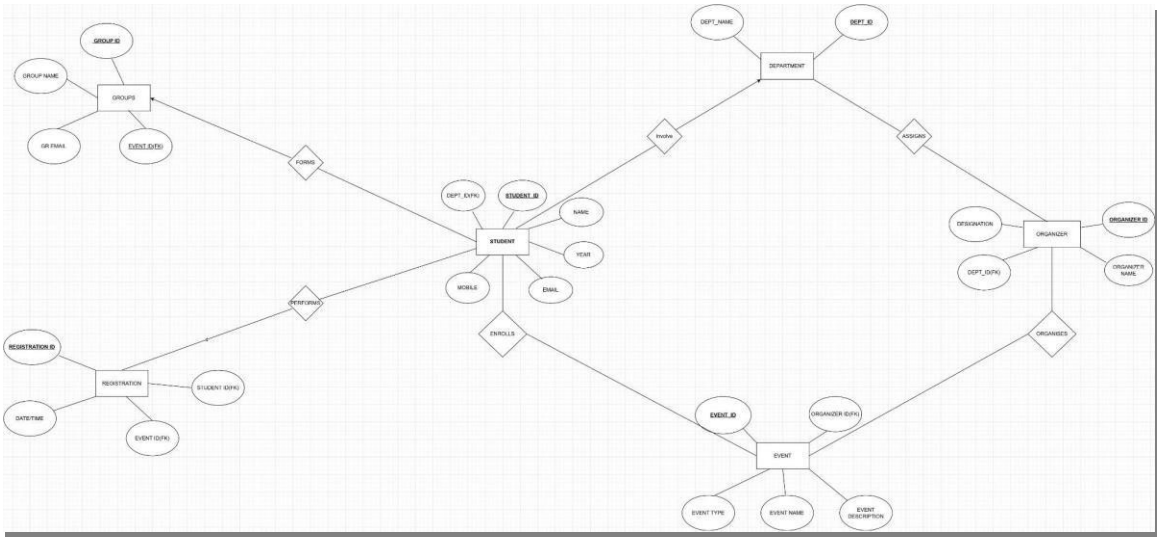


Fig 1. ER Diagram

- **Student:** This table stores information about the students interested in department events. Attributes includes student ID, name, email, year, mobile number, etc. (Primary Key: Student ID)
- **Department:** This table stores information about the department organizing the events. Attributes could include department name, department id, etc. (Primary Key: Department ID)
- **Organizer:** This table represent individuals who organizes events. Attributes include organizer ID, name, designation, etc.(Primary Key: Organizer ID)
- **Event:** This table stores information about the events themselves. Attributes could include event ID, type, description, date, time, department hosting the event, etc. (Primary Key: Event ID)
- **Groups:** This table represent student groups or organizations within the department that might host or participate in events. Attributes could include group ID, name, description, contact information, etc. (Primary Key: Group ID)
- **Registration:** This table captures registrations for events. Attributes could include registration ID, student ID (foreign key referencing Student table), event ID (foreign key referencing Event table), date of registration, additional information specific to the event, etc. (Primary Key: Registration ID)

UML DIAGRAM:

For this project, we have prepared 3 UML diagrams namely, Use case diagram, Activity diagram, Sequence diagram.

1. USE CASE DIAGRAM:

Fig 2 shows the use case diagram which illustrates the various functionalities the website offers for different user groups, namely students and admin.

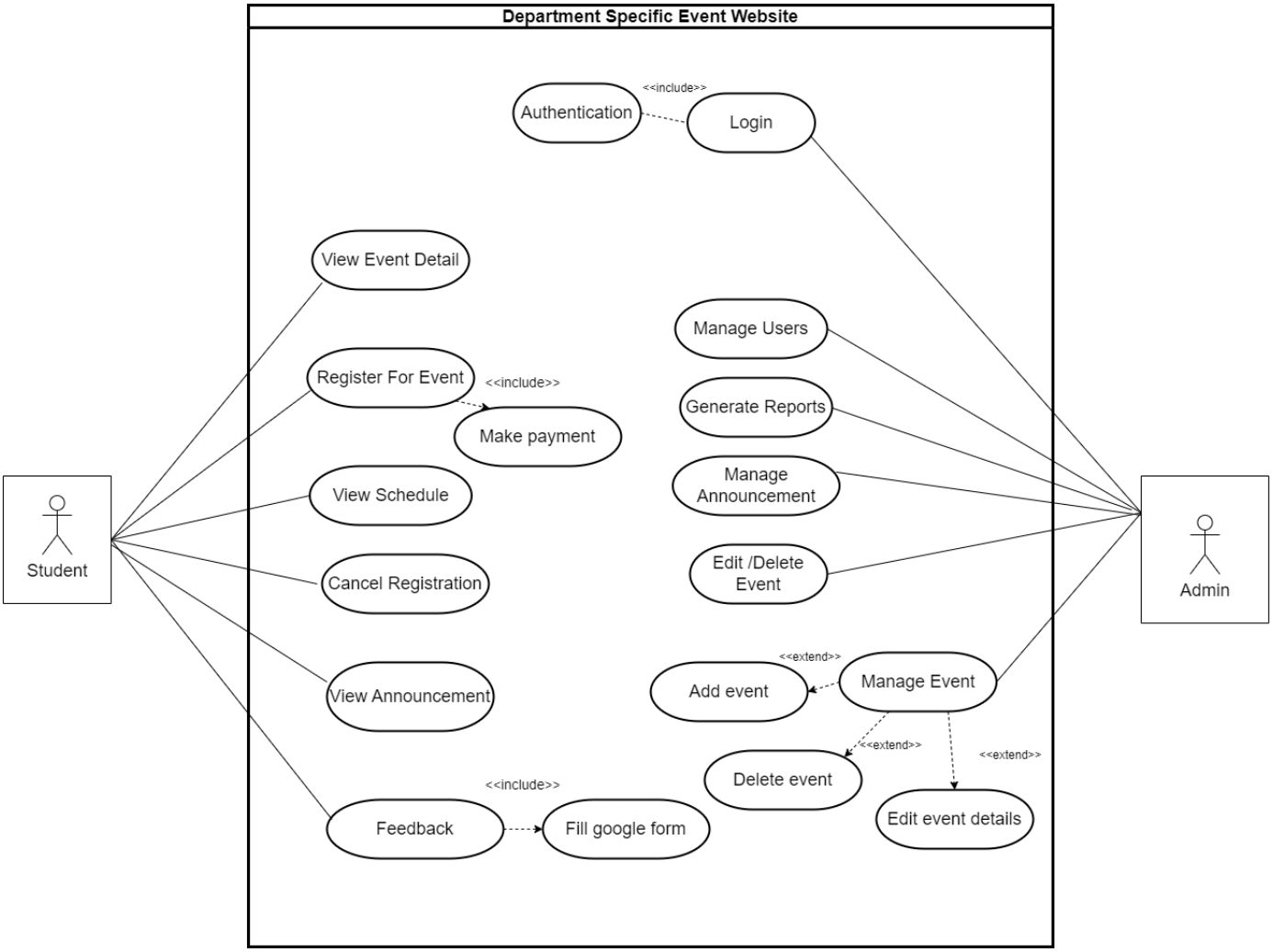


Fig 2. Use Case Diagram

Here,

- **Students** can view event details, register for events, view the event schedule, and view announcements. They can also provide feedback and cancel their event registrations.
- **Admins** can manage events, manage users, generate reports, view announcements, and edit or delete announcements.

2. ACTIVITY DIAGRAM:

- For User (Student):

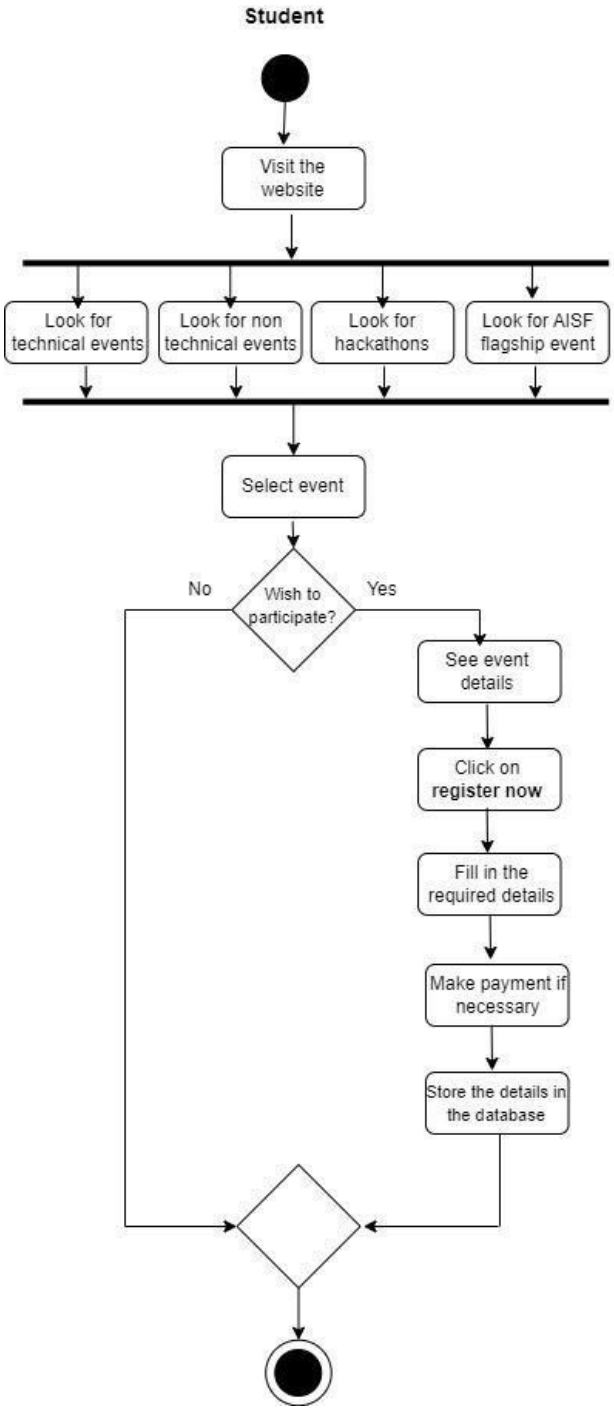


Fig 3. Activity Diagram for User

- For Admin :

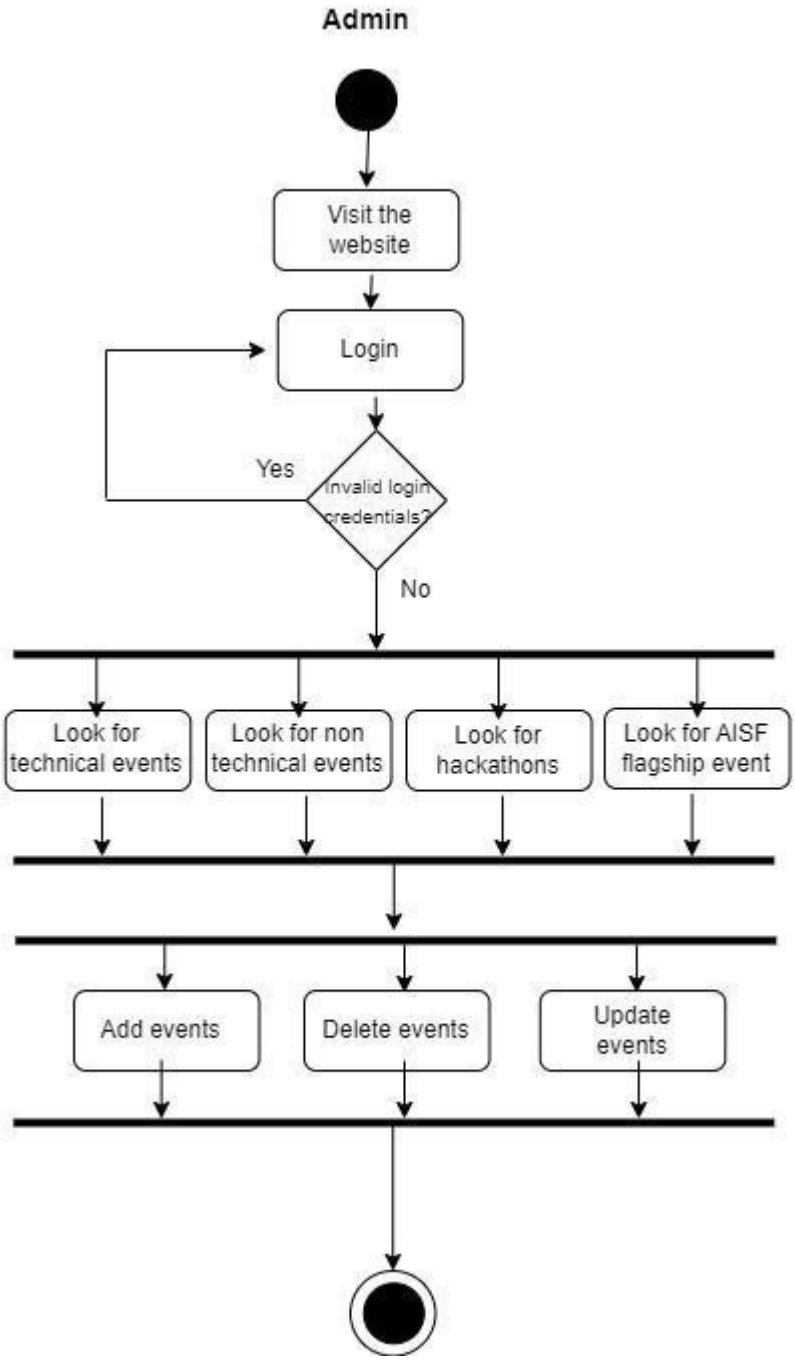


Fig 4. Activity Diagram for Admin

3. SEQUENCE DIAGRAM:

- For User:

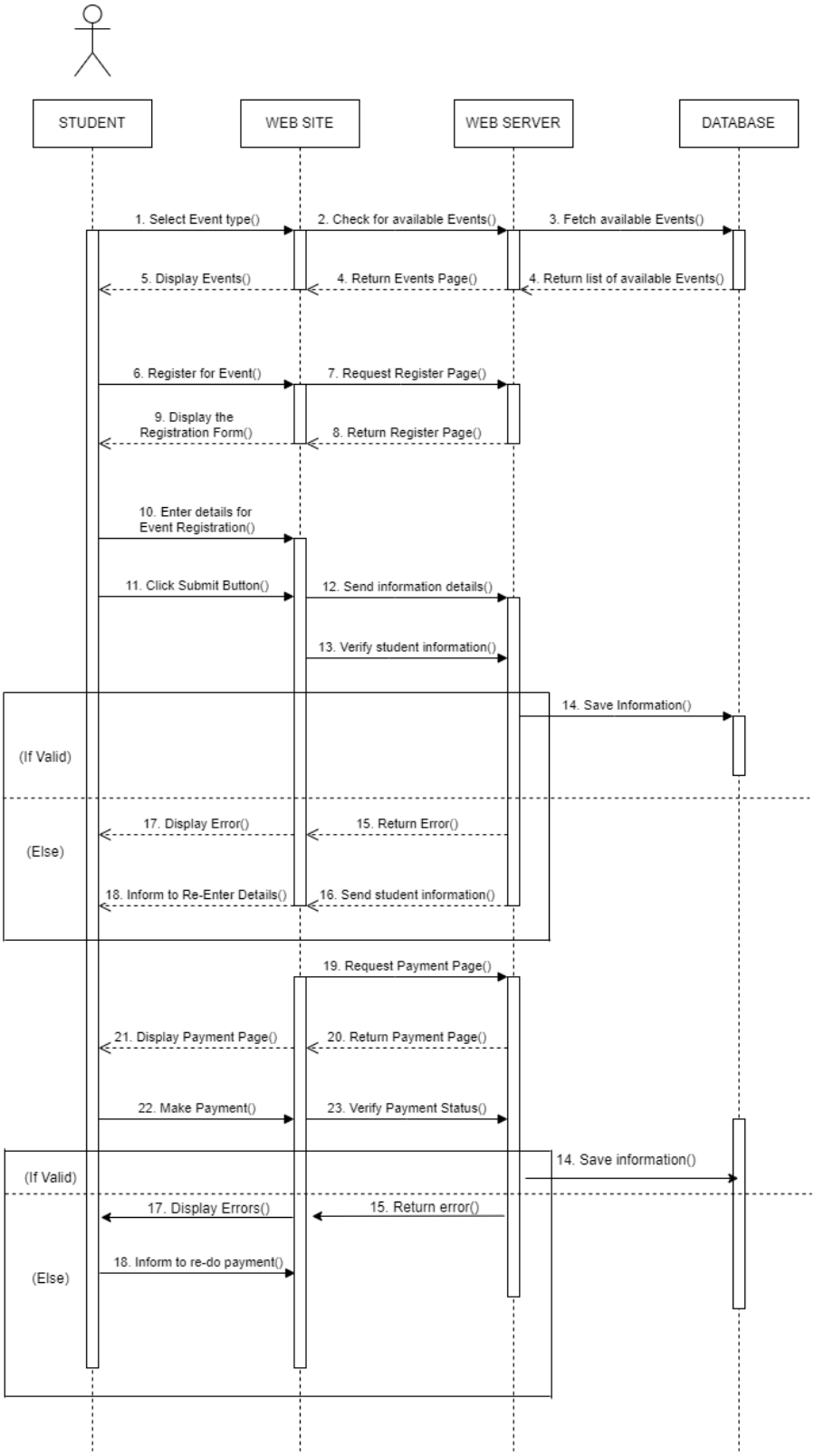


Fig 5. Sequence Diagram for Student

- For Admin

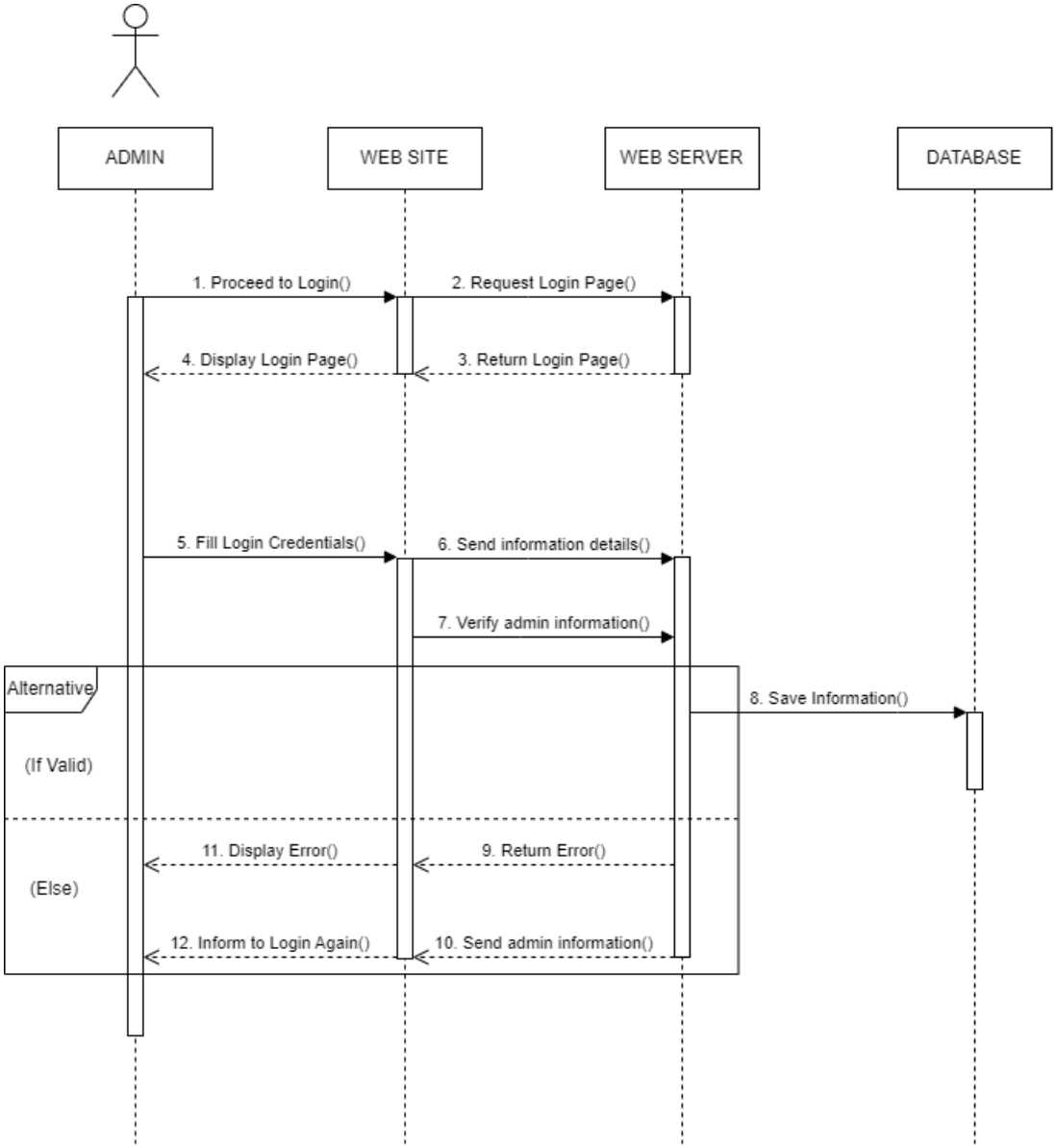


Fig 6. Sequence Diagram for Admin

Website Screenshots :

- First page of Website :

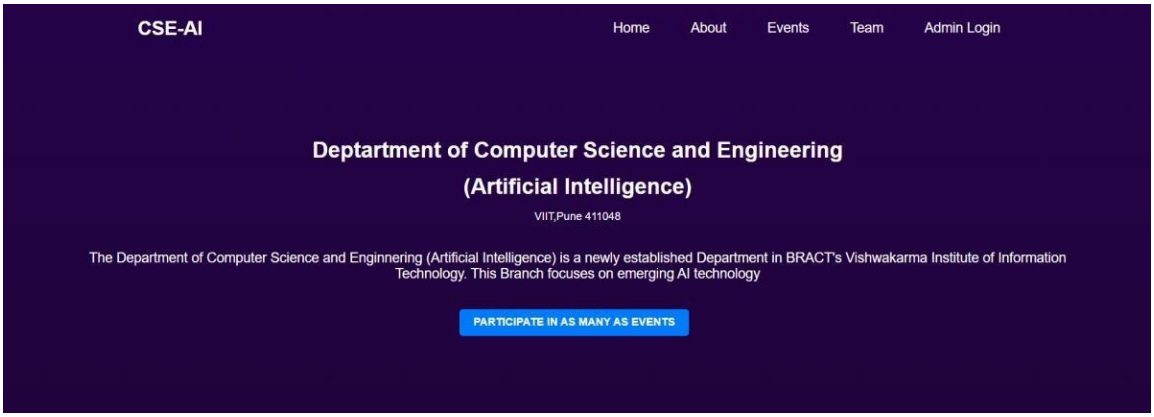


Fig 6. Dashboard

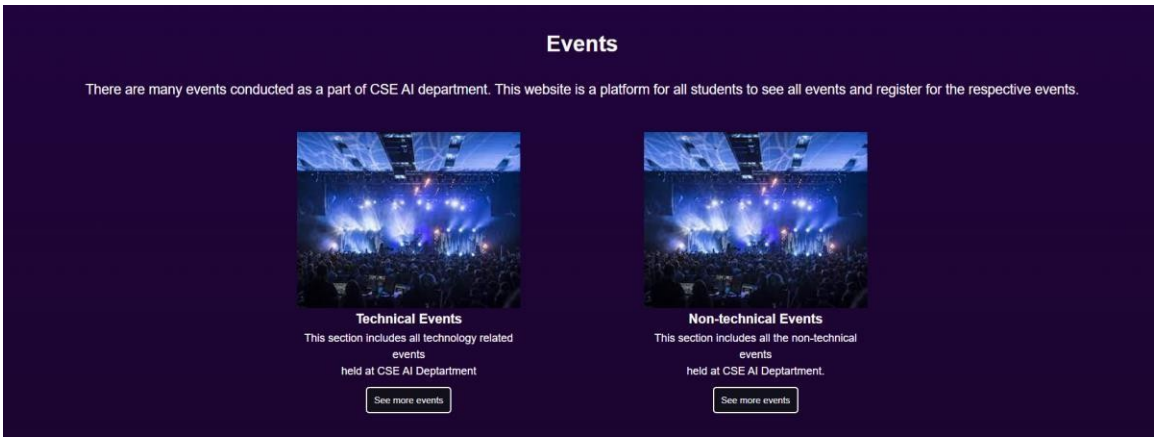


Fig 6. Events page

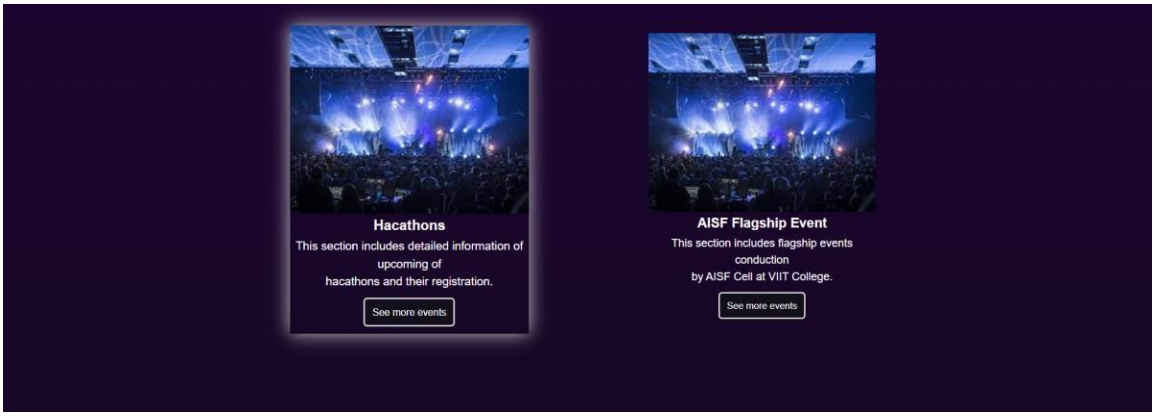
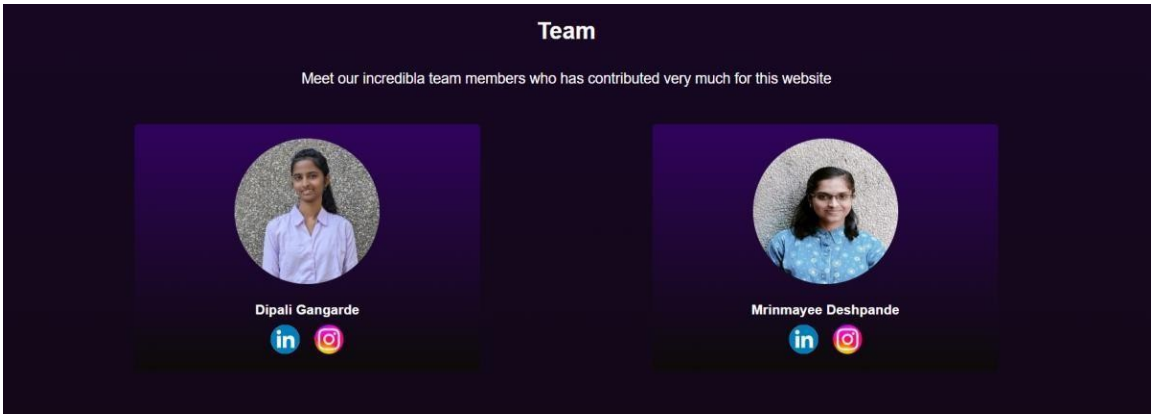


Fig 6. GUI for hackathons and other events



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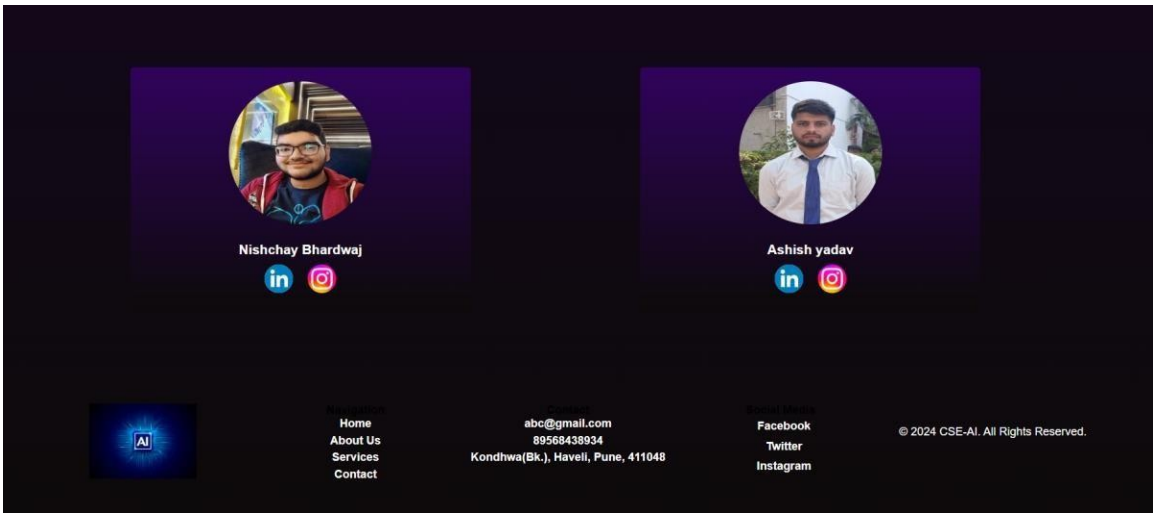

Fig 8. Our team

- After clicking on Technical Events :

Fig 9. Glimpses of the technical events

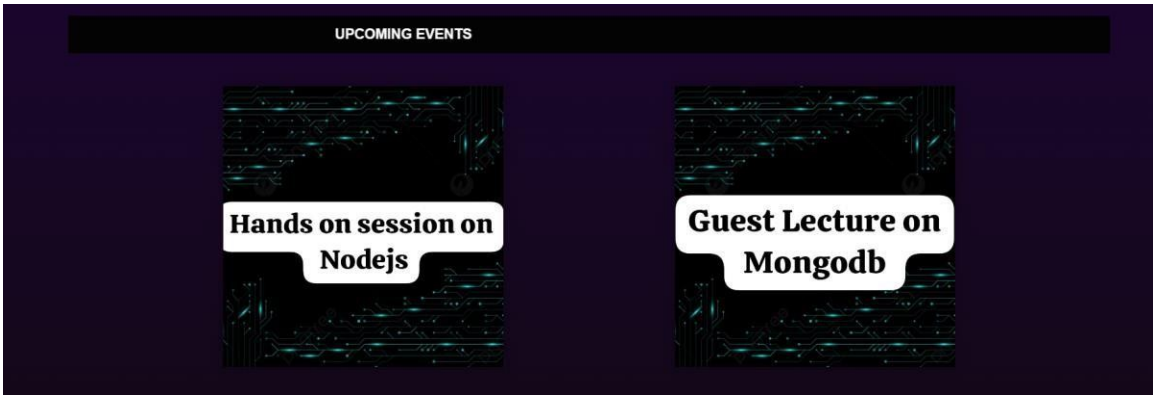

Fig 10. Upcoming events

Fig 11. Upcoming events

- After clicking on Non-technical Events:

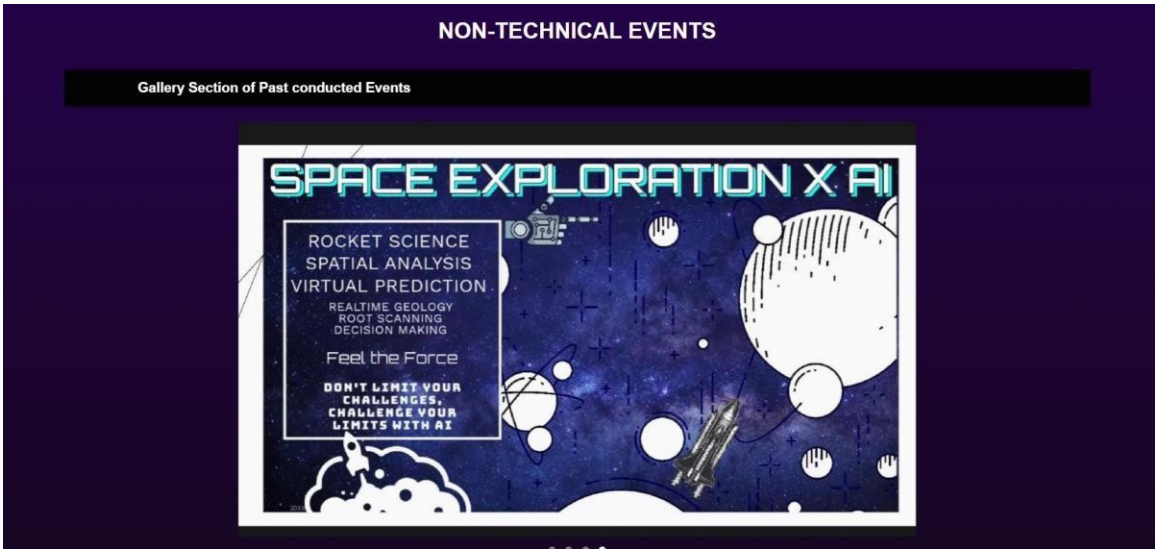

Fig 12. Carousel for glimpses of non- technical events

Fig 13. Upcoming events

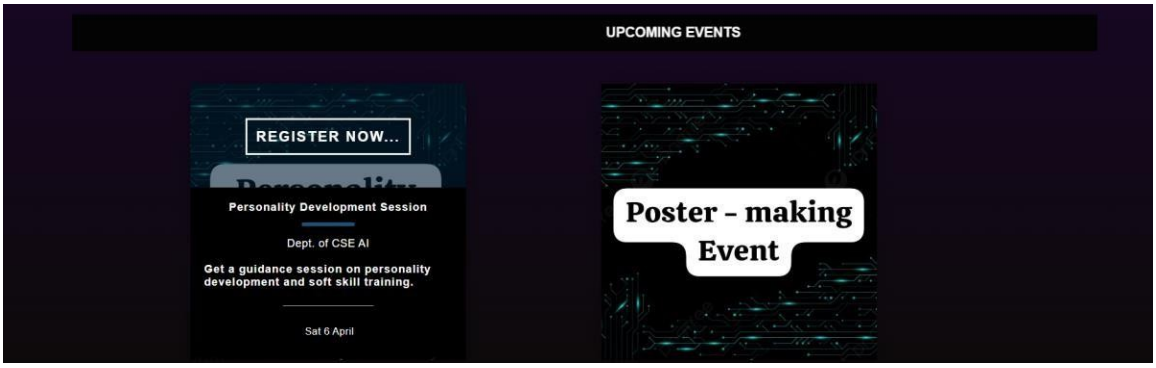

Fig 14. Upcoming events

After clicking on Personality Development Session, it will display such type of information about the event. It is same for all the events under Technical Events and Non-technical Events.

CONCLUSION:

The Department-Specific Events Website project represents a groundbreaking solution to the challenges inherent in managing academic department events. Through the harmonious integration of frontend technologies like HTML and CSS with backend systems powered by Node.js and MongoDB, the project offers a seamless user experience for both students and administrators. Students benefit from a visually appealing interface that simplifies event discovery, registration, and payment processes, while administrators gain robust tools for event oversight and management. By leveraging modern technologies and user- centric design principles, the project streamlines event management processes, enhancing efficiency and accessibility within the department. The advantages for students are numerous: they are met with an eye-catching interface that not only makes finding events easy but also expedites the registration and payment procedures to a level of simplicity never seen before. By automating manual processes and providing real-time data insights, the platform empowers both students and administrators to navigate event coordination with ease and efficiency. With its transformative approach to event management, the Department-Specific Events Website project sets a new standard for academic event organization, paving the way for enhanced collaboration, innovation, and community- building within academic departments.

REFERENCES:

For this project, we have used following references:

1.https://getbootstrap.com/docs/4.0/components/carousel/

2.https://www.w3schools.com/css/css3_shadows.asp

3.https://www.wix.com/blog/event-website

4.https://thomasdigital.com/industry/best-event-websites

5.https://www.bannerbear.com/blog/how-to-create-an-image-slider-in-html-css-and- javascript/

6.https://www.mongodb.com/docs/manual/

7.https://nodejs.org/en/learn/getting-started/introduction-to-nodejs'https://www.w3schools.com/nodejs/