Web-Based College Event Management Platform

Bhagyashree Patil[1], Shruti Rawool[2], Ayushi Sagar[3], Prof.Sudhakar Yerme[4]

[1]B.Tech Student, Dept of Computer Engineering, Usha Mittal Institute Of Technology Mumbai, India
[2]B.Tech Student, Dept of Computer Engineering, Usha Mittal Institute Of Technology Mumbai, India
[3]B.Tech Student, Dept of Computer Engineering, Usha Mittal Institute Of Technology Mumbai, India
[4]Assistant Professor, Dept of Computer Engineering, Usha Mittal Institute Of Technology Mumbai, India

---***---

Abstract - *The Web-Based College Event Management Platform (WEMP) is a powerful web-based application designed to streamline event planning and coordination in educational institutions. The WEMP leverages cutting-edge technologies like Node.js, MongoDB, and more. With WEMP, you can create, plan, and track events with minimal administrative overhead. The easy-to-use interface allows you to manage events from registration to post-event feedback. MongoDB's data model is flexible and provides scalability as your college community grows. With Node.js, you can communicate in real time, providing instant notifications and updates to event organizers and attendees. The WEMP also has strong authentication and authorization mechanisms to protect sensitive data. Combining the power of Node.js with MongoDB, the WEMP is an efficient, dependable, and easy-to-use solution for college event management.*

Key Words: web-based, event management, MongoDB, Node.js, Express.js, event notification

1.INTRODUCTION

Campus life is greatly influenced by college activities, which offer students priceless chances to grow, make friends, and have fun, all of which contribute to a more fulfilling college experience. However, there are several issues with the current college event announcement system. Event data is frequently fragmented and scattered over multiple platforms and sources. Students find it difficult to locate whole event facts as a result of this fragmentation, which causes information overload and disorientation.

The problem is heightened by the inconsistent structure, detail, and dependability of the information. Because of this, students may be unaware of important events and miss them, which emphasizes the urgent need for more efficient means of communication.

A centralized platform is necessary to get over these barriers. To address the present fragmentation and ineffectiveness of college councils, this portal will serve as an official, unified conduit via which they can all easily share and connect their activities

An online program called an event management system for college is used to organize events. Students can attend a variety of activities with the help of this application. The event organizer does not send the client/user an email confirming the cost and event date until after they have logged into the page. Remote registration for any forthcoming events is available, and the event manager concurrently keeps track of each individual's report.

It takes a consolidated platform to get over these obstacles. This portal will serve as an official, unified conduit for all college councils to interact and exchange their actions, which will solve the current fragmentation and inefficiency.

The proposed platform would address these problems with multiple primary goals in mind. It will serve as a central location for various college councils to exchange comprehensive event information, guaranteeing that students have access to accurate and comprehensive details. Additionally, it will provide improved event discovery by reminding and notifying students, which will lower the possibility that events will be missed. Opportunities for collaboration with other universities might be advantageous to event planners, resulting in larger and more varied events. Active engagement will be facilitated via interactive engagement tools like comment sections and discussion forums. Easy navigation and seamless integration with current college systems will facilitate the introduction of this technology into campus life.

Additionally, the platform will incorporate user feedback and data analytics to promote ongoing enhancements.

The purpose of integrating these elements is to improve event participation rates, increase student engagement, and eventually improve the campus experience in general. Students will gain from having access to an extensive database of event details, and event planners will get the resources they need to produce interesting and effective events.

The motivation behind this initiative stems from an understanding of the past difficulties in collegiate event planning. It aims to solve these problems by centralizing and innovating, building a more cohesive and robust campus community that appreciates and fully enjoys its events.

2. PROBLEM STATEMENT

Our college's existing event announcement system is beset by several issues, such as disorganized data, inadequate avenues for contact, and lost chances to engage students. Our college lacks an official and efficient avenue to communicate and share their activities because of this decentralized strategy that depends on apps like Instagram and WhatsApp. Because of this, students frequently fail to notice when an event is happening, which results in low participation and lost chances for engagement and teamwork. In addition, event organizers find it difficult and time-consuming to manage numerous social media accounts for various events. A comfortable and easy-touse solution is required to combine event details into a single platform, facilitating students' access to and participation in the events that most interest them.

3. LITERATURE REVIEW

The authors of research suggested a web application to facilitate organizing and attending events. Included in this paper is the event management module, which integrates social media for local promotion and permits remote access with a chosen login [1]. Event managers are notified of user behavior and have access to registration details. Event specifics including the date, time, place, and gear can be customized by users. The major advantages of paper include: Remote registration and report maintenance benefits; Centralized data access facilitates historical monitoring; Email confirmations save time over phone calls. However, the disadvantages are that Node.js's unified JavaScript simplifies development and encourages code reuse, while MongoDB can replace MySQL for scalability and flexibility[3].

The study demonstrates how the MEAN stack improved communication and security for students and institutions by developing the "Event Organization" web app. It highlights how Angular's front-end is user-friendly and how using Node.js and Express.js streamlines server-side activities. MongoDB offers flexible database features, and JWT authentication guarantees safe access. Overall, the study demonstrates the useful benefits of the MEAN stack for developing educational web applications. Examines the MEAN stack for instructional web applications is one of the paper's primary features. The "Event Organisation" app, which uses Angular, Node.js, Express.js, MongoDB, and MEAN stack, demonstrates how useful it is in the field of education.However, the disadvantages include: insufficient understanding of implementation challenges; failure to properly compare the MEAN stack with alternatives; and a lack of discussion on scalability strategies[2].

Users can create, search for, and join events on this research paper's user-friendly and intuitive platform. Many other features, such as a recommender system, parameter optimization, and spam detection modules, have emerged as this application has developed. These enhancements made the project more user-friendly and appealing[4]. The paper's salient characteristics comprise The Firebase real-time database makes it simple to create real-time applications, while responsive web design (RWD) uses CSS to adjust to different screen sizes. The disadvantages, however, are that concentrating on sophisticated technologies like as spam filtering and artificial neural networks (ANN) strays from the decentralization objective and that data integrity requires backups due to single database repository risk[5].

4. METHODOLOGY

The project involves developing a comprehensive platform with distinct user roles, MongoDB database design, Node.js and Express.js server backend, Angular frontend, user registration and login using JWT, event management, notifications, feedback and polls, security and access control, testing and quality assurance, deployment and scaling, and documentation and training. This multifaceted approach ensures a userfriendly interface, efficient data management, secure authentication, and scalable deployment, catering to both students and admins with role-specific functionalities.

4.1 Technical Overview

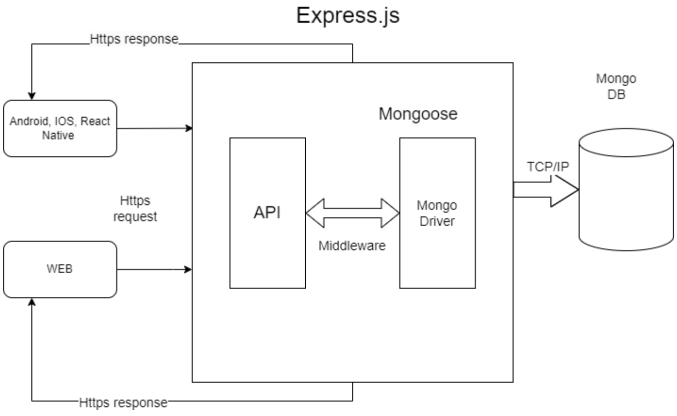


Fig -1: Technical Architecture

The web browser sends an HTTPS request to the server. Express.js listens for incoming requests and directs them to the appropriate API endpoint. Middleware functions may intercept the request to perform tasks like authentication or data validation. If the request involves interacting with the database, Mongoose helps define the data structure and performs operations on the MongoDB database using the MongoDB driver. The MongoDB driver communicates with the MongoDB database to retrieve or manipulate data as needed. Finally, the server processes the request, generates a response (In our case in JSON format), and sends it back to the web browser.

4.2 Data Flow Diagram

The below DFD provides a high-level overview of the data flow within the college event announcement platform.

In practice, there may be additional components, data stores, and more detailed data flows based on the specific requirements and features of the platform.

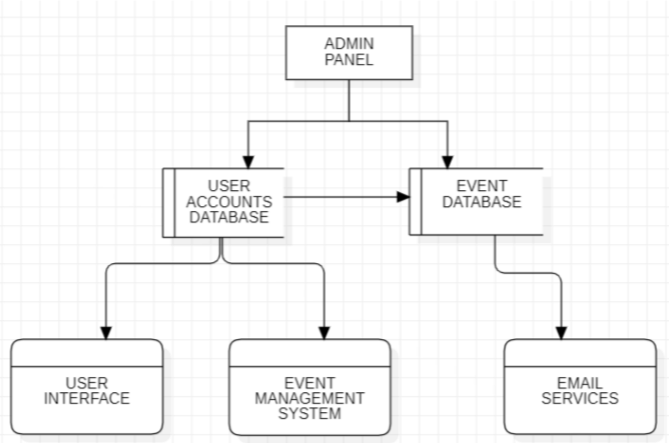


Fig -2: Data Flow Diagram

In this diagram, the main components are:

a. User Interface: This represents the interface through which users interact with the college event announcement platform. It can be a web-based interface, mobile application, or any other means of user interaction.

b. User Accounts Database: This database stores user account information, such as usernames, passwords, and personal details.

c. Admin Panel: This component provides administrative functionality to manage the event announcements. It allows authorized administrators to create, update, and delete events.

d. Event Management System: This system handles the management of events. It interacts with the user accounts database to authenticate administrators and with the event database to perform operations on events.

e. Event Database: This database stores event information, including event details, dates, locations, and associated metadata.

f. Email Service: This component is responsible for sending email notifications to users regarding event announcements. It may interact with the event management system to retrieve relevant event information.

The data flow in this example follows a typical pattern:

1. Users interact with the user interface to browse, search, and view event announcements.

2. User account-related data flows between the user interface and the user accounts database for user authentication and personalized experiences.

3. Authorized administrators access the admin panel to manage events, creating new event announcements or modifying existing ones.

4. The event management system interacts with the event database to store and retrieve event-related information.

5. The event management system may trigger notifications to users by utilizing the email service, which retrieves relevant event information from the event database and sends email announcements.

4.3 Design and Implementation

Define User Roles: Identify and define two user roles: students and admins. Determine their specific permissions and access levels within the platform.

Database Design (MongoDB): Create a MongoDB database to store user data, event details, registration information, feedback, and other relevant data. Design schemas for users, events, notifications, feedback, and polls.

Server Backend (Node.js and Express.js): Develop a Node.js server using Express.js to handle server-side logic. Implement user authentication and authorization mechanisms for both students and admins. Create API endpoints to manage user profiles, event data, registration forms, notifications, feedback, and polls. Implement email and WhatsApp notification services for users. Set up data retrieval and storage for past event details.

Frontend (Angular): Build an Angular frontend for a user-friendly and interactive interface. Create separate views and components for students and admins. Develop pages for viewing event information, registration forms, past event details, notifications, feedback submission, and poll participation. Implement user authentication and route protection. Design user dashboards for both students and admins with role specific features.

User Registration and Login: Create registration and login forms for both students and admins. Implement user authentication using JWT (JSON Web Tokens) for secure access.

Event Management: Develop admin-specific interfaces to create, edit, and manage event details. Enable event posting, including descriptions, dates, times, locations, and registration forms. Store and retrieve event data from the database.

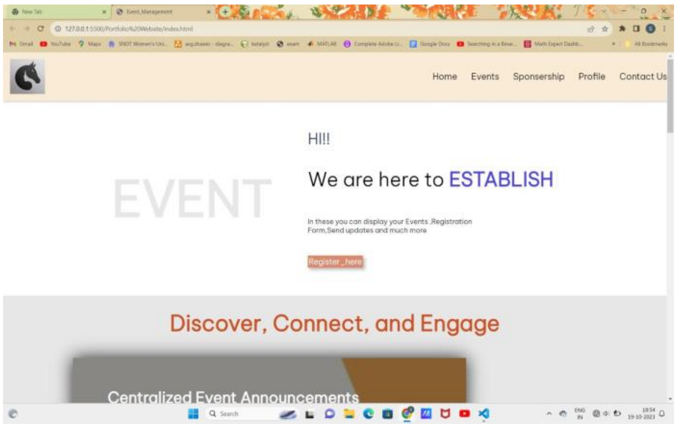
Notifications: Integrate email for sending notifications to students. Set up automated notifications for event updates, registration confirmations, and other important information. **Feedback and Polls**: Create forms for students to submit feedback on events and platform usability. Implement poll questions and capture user responses. Store feedback and poll data in the database for analysis.

Security and Access Control: Implement role-based access control to restrict actions and data access based on user roles. Ensure data security and privacy through proper authentication and authorization mechanisms. Testing and **Quality Assurance**: Perform thorough testing to validate the functionality and user experience. Test for security vulnerabilities and data integrity. Conduct user acceptance testing to gather feedback for improvements. Deployment and

Scaling: Deploy the MEAN stack application on a production server. Configure server infrastructure, hosting, and security measures. Ensure scalability to accommodate growing user numbers.

Documentation and Training: Create documentation for the platform's functionality, API endpoints, and deployment instructions. Provide training for administrators on managing events and user data.

5. RESULT



HI!!

We are here to ESTABLISH

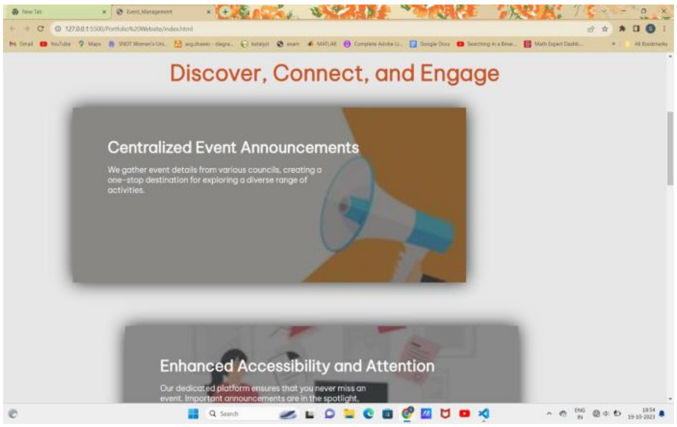
In these you can display your Events ,Registration Form,Send updates and much more

Discover, Connect, and Engage

Centralized Event Announcements

Fig -3: Home Page (a)

The Home Page is the main webpage visitors see first and serves as a landing page to capture their interest.



Discover, Connect, and Engage

Centralized Event Announcements

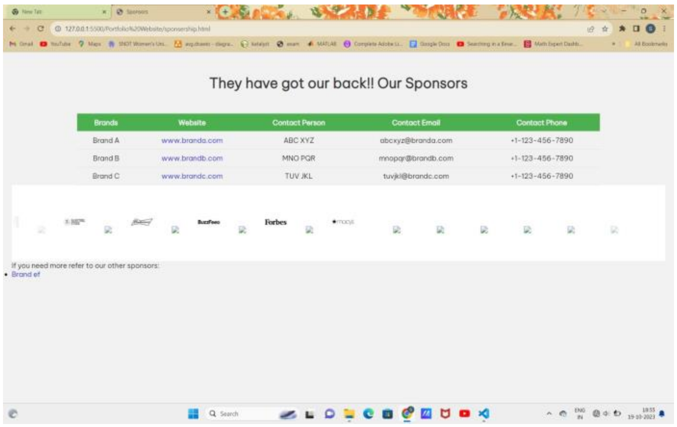
We gather event details from various councils, creating a one-stop destination for exploring a diverse range of activities.

Enhanced Accessibility and Attention

Our dedicated platform ensures that you never miss an event. Important announcements are in the spotlight.

Fig -4: Home Page (b)

The Home Page is the main webpage visitors see first and serves as a landing page to capture their interest.



They have got our back!! Our Sponsors

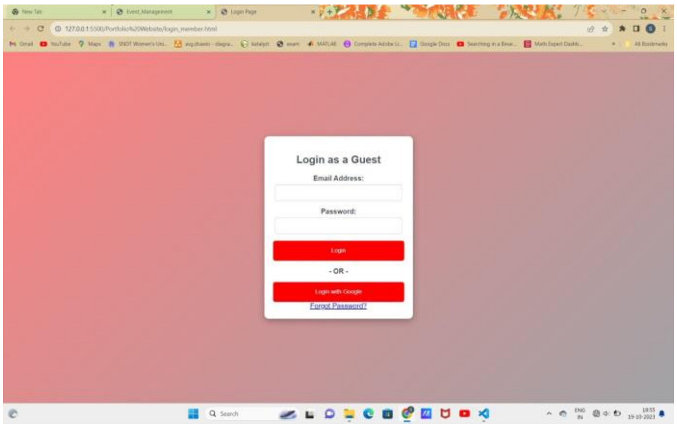
Brands	Website	Contact Person	Contact Email	Contact Phone
Brand A	www.branda.com	ABC XYZ	abcxyz@branda.com	+1-123-456-7890
Brand B	www.brandb.com	MNO PQR	mnopqr@brandb.com	+1-123-456-7890
Brand C	www.brandc.com	TUV JKL	tuvjkl@brandc.com	+1-123-456-7890

If you need more refer to our other sponsors:

- Brand ef

Fig -5: Sponsors Page

The sponsor's page showcases a creator's brand and advertising benefits.



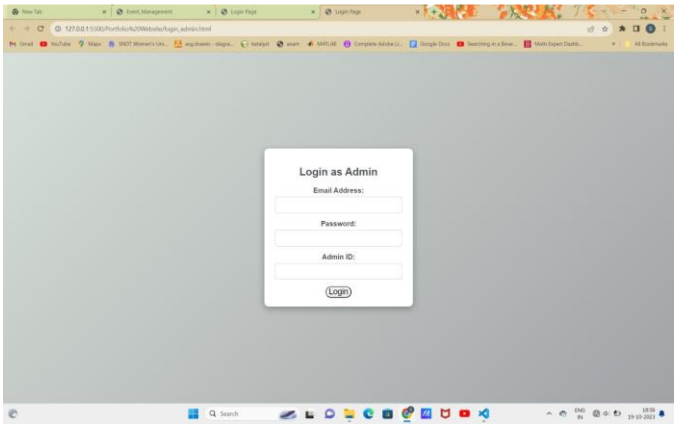
Login as a Guest

Email Address:

Password:

Fig -6: Login as Guest

This page appears for guest logins.



127.0.0.1:5500/Portfolio%20Website/login_admin.html

Login as Admin

Email Address:

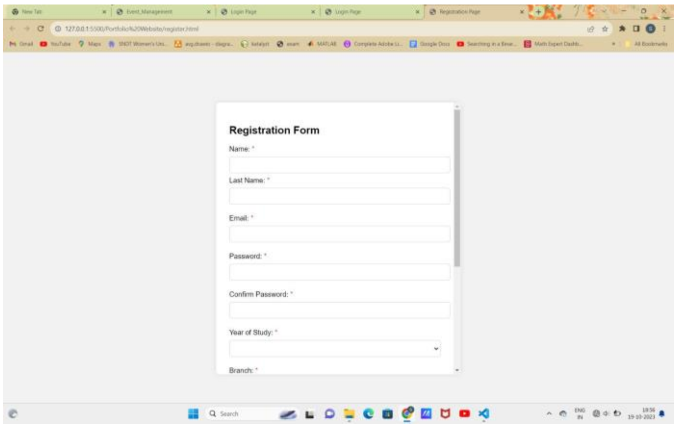
Password:

Admin ID:

Login

Fig -7: Login as Admin

While logging in as Administrator, this page appears.



register.html

Registration Form

Name: *

Last Name: *

Email: *

Password: *

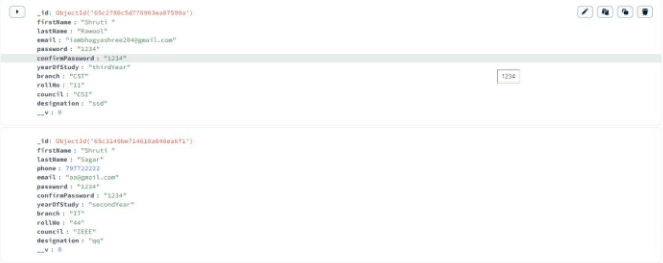
Confirm Password: *

Year of Study: *

Branch: *

Fig -8: Registration Form

Users must complete the website registration form.

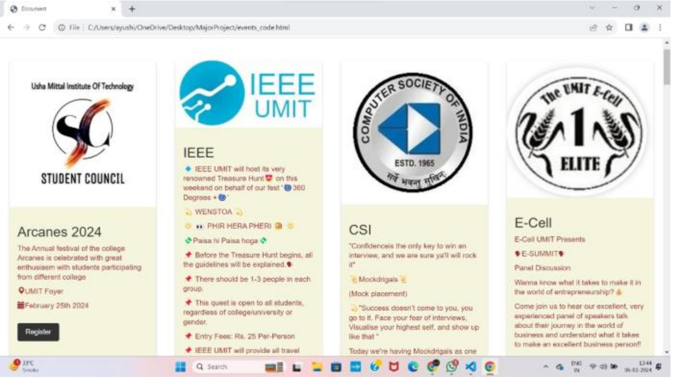


```
_id: ObjectId('65c2780c5d778983ea87599a')
firstName : "Shruti "
lastName : "Rawool"
email : "iambhagyashree204@gmail.com"
password : "1234"
confirmPassword : "1234"
yearOfStudy : "thirdYear"
branch : "CST"
rollNo : "11"
council : "CSI"
designation : "ssd"
__v : 0

_id: ObjectId('65c3149be714618a048ea6f1')
firstName : "Shruti "
lastName : "Sagar"
phone : 797722222
email : "aa@gmail.com"
password : "1234"
confirmPassword : "1234"
yearOfStudy : "secondYear"
branch : "IT"
rollNo : "44"
council : "IEEE"
designation : "qq"
__v : 0
```

Fig -9: MongoDB Database

Registered data retrieved from the registration form



C:/Users/ayushi/OneDrive/Desktop/MajorProject/events_code.html

Usha Mittal Institute Of Technology STUDENT COUNCIL

Arcanes 2024

The Annual festival of the college Arcanes is celebrated with great enthusiasm with students participating from different college

📍UMIT Foyer

📅February 25th 2024

Register

IEEE UMIT

IEEE

IEEE UMIT will host its very renowned Treasure Hunt on this weekend on behalf of our fest ' 360 Degrees '

WENSTOA

PHIR HERA PHERI

Paisa hi Paisa hoga

Before the Treasure Hunt begins, all the guidelines will be explained.

There should be 1-3 people in each group.

This quest is open to all students, regardless of college/university or gender.

Entry Fees: Rs. 25 Per-Person

IEEE UMIT will provide all travel

COMPUTER SOCIETY OF INDIA ESTD. 1965

CSI

"Confidenceis the only key to win an interview, and we are sure ya'll will rock it"

Mockdrigals

(Mock placement)

"Success doesn't come to you, you go to it. Face your fear of interviews, Visualise your highest self, and show up like that "

Today we're having Mockdrigals as one

The UMIT E-Cell ELITE

E-Cell

E-Cell UMIT Presents

E-SUMMIT

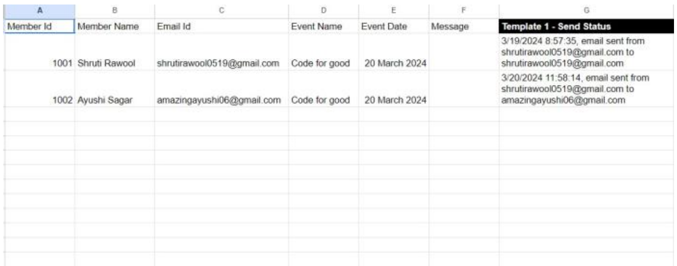
Panel Discussion

Wanna know what it takes to make it in the world of entrepreneurship?

Come join us to hear our excellent, very experienced panel of speakers talk about their journey in the world of business and understand what it takes to make an excellent business person!!

Fig -10: Events

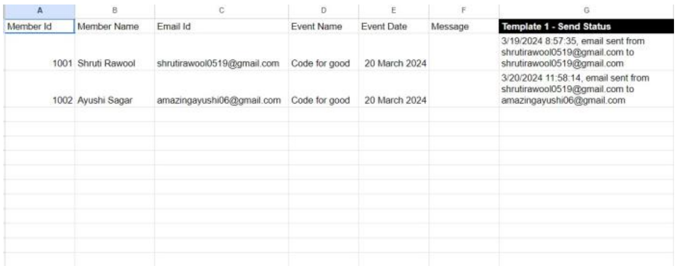
The page displays events with descriptions, locations, timing, and organizing council.



A	B	C	D	E	F	G
Member Id	Member Name	Email Id	Event Name	Event Date	Message	Template 1 - Send Status
1001	Shruti Rawool	shrutirawool0519@gmail.com	Code for good	20 March 2024		3/19/2024 8:57:35, email sent from shrutirawool0519@gmail.com to shrutirawool0519@gmail.com
1002	Ayushi Sagar	amazingayushi06@gmail.com	Code for good	20 March 2024		3/20/2024 11:58:14, email sent from shrutirawool0519@gmail.com to amazingayushi06@gmail.com

Fig -11: Event Registeration Data

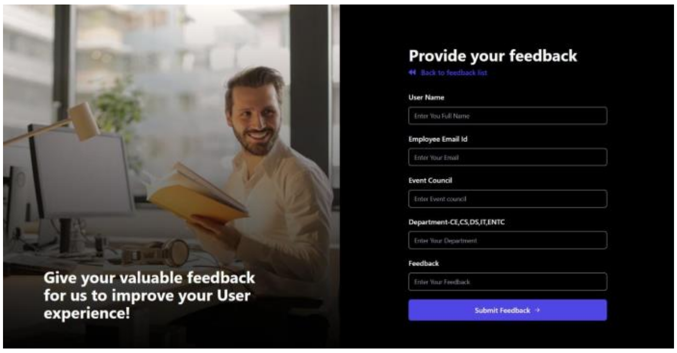
Registered event attendees' data.



A	B	C	D	E	F	G
Member Id	Member Name	Email Id	Event Name	Event Date	Message	Template 1 - Send Status
1001	Shruti Rawool	shrutirawool0519@gmail.com	Code for good	20 March 2024		3/19/2024 8:57:35, email sent from shrutirawool0519@gmail.com to shrutirawool0519@gmail.com
1002	Ayushi Sagar	amazingayushi06@gmail.com	Code for good	20 March 2024		3/20/2024 11:58:14, email sent from shrutirawool0519@gmail.com to amazingayushi06@gmail.com

Fig -12: Email Reminder

Email event reminder sent to registered candidates.



Give your valuable feedback for us to improve your User experience!

Provide your feedback

Back to feedback list

User Name

Enter You Full Name

Employee Email Id

Enter Your Email

Event Council

Enter Event council

Department-CE,CS,DS,IT,ENTC

Enter Your Department

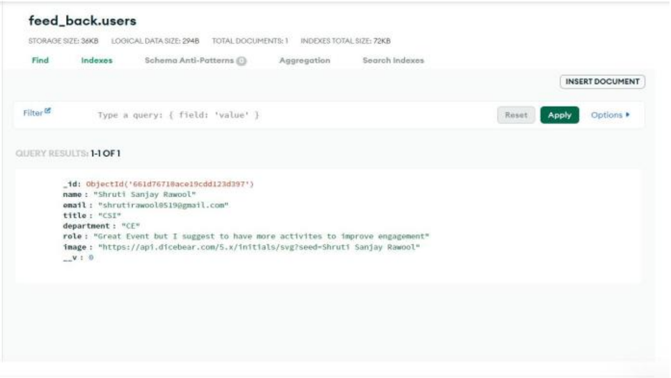
Feedback

Enter Your Feedback

Submit Feedback →

Fig -13: Feedback Form

Feedback form to analyse event management



```
_id: ObjectId('661d76718ace19cdd123d397')
name : "Shruti Sanjay Rawool"
email : "shrutirawool8519@gmail.com"
title : "CSI"
department : "CE"
role : "Great Event but I suggest to have more activites to improve engagement"
image : "https://api.dicebear.com/5.x/initials/svg?seed=Shruti Sanjay Rawool"
__v : 0
```

Fig -14: Feedback stored in MongoDB

Feedback from students in MongoDB later to be used for analysis

6. CONCLUSION

The research underscores the significance of online event management systems in facilitating seamless registration processes for seminars, thereby enhancing user accessibility and satisfaction. Leveraging modern technologies such as the MEAN stack has not only streamlined development but also preemptively addressed forthcoming challenges, rendering the system more robust and developer-friendly. The deployment of these technologies opens avenues for further exploration, particularly in enhancing scalability and functionality. By bridging the gap between institutes and students, such systems serve as vital tools for fostering engagement and communication. Overall, this study highlights the pivotal role of web applications in modernizing event organization processes and catering to the evolving needs of users, laying the groundwork for continued advancements in this domain

7. FUTURE SCOPE

Here are some potential areas of growth for WEMP:

1) Mobile App Development:

Explore the potential for developing a mobile application version of the website, enabling users to conveniently browse and register for events while on-the-go.

2) Personalized Event Recommendations:

Investigate the integration of machine learning algorithms in the app to offer personalized event recommendations tailored to users' preferences and past attendance history, enhancing the user experience.

3) Resource Library Expansion:

Expand the resource library within the app to include a comprehensive collection of event planning guides, templates, and best practices for event organizers, providing valuable resources and support.

4) Database Optimization:

Consider implementing master and slave database structures in the future to address the high overload of queries, ensuring efficient data management and improved system performance

The future of online event management system is expansive and full of promise. It will entails refining debugging techniques, global accessibility, and strengthening security measures. Additionally, integrating user-centric features such as social media integration, real-time collaboration tools will cater to evolving needs and technology advancements.

REFERENCES

[1] Rashmee Wadagave, Srushti Karoshi,Pranali Ravan, Rutuja Santikar, Rashmi Deshmukh, "Web Application based Event Organisation Portal using MEAN Stack", in IEEE Xplore Part Number: CFP22AZ5-ART; ISBN: 978-1-6654-7884-7, 2021.

[2] Dr.J.R.V. Jeny, P.Sadhana, B.Jeevan Kumar, S.Leela Abhishek and T.Sai Chander, "A Web based-College Event Management System and Notification Sender", in IEEE Xplore Part Number: CFP22N67-ART; ISBN: 978-1-6654-9707-7, 2022.

[3] Rinat Khatipov, Manuel Mazzara, Aydar Negimatzhanov, Victor Rivera, Anvar Zakirov, Ilgiz Zamaleev, "Hikester - the event management application" in 32nd International Conference on Advanced Information Networking and Applications Workshops, 2018.

[4] Mohana. S, Mr. P. Anbumani, "Online Event Management System" in International Journal of Research Publication and Reviews, Vol 3, no 7, pp 1947-1952, July 2022.

[5] May Paing Paing Zaw, "Web-Based Event Management System (EMS)" in International Journal of Trend in Scientific Research and Development (IJTSRD) Vol 3, no 4, 2019.