VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A PROJECT REPORT ON

"MCE CLASHPOINT"

Submitted in partial fulfillment of
the requirements for the award of the degree of

Bachelor of Engineering in
Computer Science and Engineering

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2025-2026

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Certificate

This is to certify that project work entitled "MCE CLASHPOINT" is a bonafide work carried out by in partial fulfillment for the award of Bachelor of

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Engineering in Computer Science and Engineering of the Visvesvaraya Technological University, Belagavi during the year 2025-2026. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

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Dept. of CSE, MCE	Dept. of CSE, MCE	MCE

Examiners

Name of the Examiner	Signature of the Examiner
1.	
2.	

ABSTRACT

MCE ClashPoint is a web-based event management platform designed for Malnad College of Engineering to simplify event organization and enhance student engagement. It enables departments, clubs, and communities to host events while allowing students to register, track attendance, provide feedback, and receive automated certificates.

The system addresses challenges like manual registration, inefficient attendance tracking, and delayed certification. It integrates QR-based attendance validation, automated certificate generation, and structured feedback collection to enhance efficiency.

Developed using the MERN stack (MongoDB, Express.js, React.js, Node.js), MCE ClashPoint ensures scalability, security, and reliability for event management. By offering a centralized and user-friendly interface, it enhances accessibility and simplifies administrative tasks for students and organizers.

ACKNOWLEDGEMENTS

Salutations to our beloved and highly esteemed institute “Malnad College Of Engineering” for having well qualified staff and labs furnished with necessary equipment. The successful completion of any task would be incomplete without mentioning the people who have constantly guided and inspired for the project and the report generation.

We avail this opportunity to thank all those people who have helped us in the whole process of completion of this project and the report.

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Chapter 1

Introduction

1.1 Introduction to MCE Clashpoint

MCE ClashPoint is a web-based event management platform developed for Malnad College of Engineering. The platform aims to streamline event organization and boost student engagement within the college. It addresses the challenges faced by academic institutions in managing events, such as inefficient manual processes for registration, attendance tracking, and certification. These traditional methods often lead to administrative overhead, delays, limited engagement, and reduced student participation

1.2 About Project

1.2.1 Problem Statement

Academic institutions struggle with inefficient event management due to the absence of a centralized digital platform. Manual registration, attendance tracking, and certification processes lead to administrative burdens and delays. Limited engagement strategies and poor accessibility further reduce student participation. Without a structured system, event organization becomes cumbersome for departments, clubs, and communities, affecting transparency, increasing workload, and reducing overall event effectiveness.

1.2.2 Objective

Develop a centralized web platform for managing all types of college events (seminars, workshops, fests, etc.) at Malnad College of Engineering. Provide role-based access for:

- Students (register, attend, review, get certificates)
- Hosts (add/manage events, mark attendance, upload reports)

Enable online event registration for students with automatic data linking to their profiles. Allow students to give event feedback and ratings after participation. Maintain a history of attended and registered events on student dashboards.

Chapter 2

Literature Survey

A College Event Management System aims to provide an integrated platform where students can browse upcoming events, register online, receive notifications, and track participation. On the other hand, organizers can manage event listings, monitor registrations, communicate with attendees, and analyze participation data. The transition to digital platforms not only improves accessibility and convenience but also enhances transparency, security, and scalability.

2.1 A Comprehensive solution to college events management

MediaPipe is a framework for building machine learning pipelines for processing time-series data like video, audio, etc. This cross-platform Framework, but we are implementing for desktop. MediaPipe Hands is a high-fidelity hand and finger tracking solution. It is even scalable to multiple hands as well. Using mediapipe makes sure that our module can run with the lowest GPU possible.

2.2 Event Management System

Online event management system is an online event management system software project that serves the functionality of an event manager. The system allow only registered user login and new user are allowed to register on the application .This proposed to be a web application. The project provides most of the basic functionality required for an event type e.g. [marriage, Dance Show birthday party, etc.], the system then allows the user to select date and time of event, place and the event equipment. All the data is logged in the database and the user is given a receipt number for his booking. The data is then send to administrator (website owner) and they may interact with the client as per his requirement.

2.3 College Club activity management system

The College Club Activity Management System is a unified web-based platform designed to efficiently manage various student clubs within a college. It streamlines administrative tasks such as membership management, event scheduling, and communication, while also preventing scheduling conflicts between different clubs. The system includes user role management, a calendar for events, and a feedback module powered by an NLP-based sentiment analysis model to evaluate event responses. Built using Django, HTML, Tailwind CSS, and integrated with both SQL and NoSQL databases, the platform aims to improve coordination, enhance user experience, and provide valuable insights to club organizers.

2.4 Design and Development of a User-Friendly Social Media App using MERN stack

The paper discusses the development of a web application using the **MERN** stack, which includes **MongoDB, Express.js, React.js**, and **Node.js**, to create efficient, full-stack applications. It highlights the advantages of using a single language (JavaScript) across both frontend and backend, improving consistency and development speed. The paper explores the integration of these technologies to manage user interfaces, handle server-side logic, and store data in a NoSQL database. The application structure, deployment considerations, and performance benefits are also covered, showcasing the MERN stack as a powerful framework for modern web development.

Chapter 3

Project Design

The College Event Management Website is a full-stack web application designed to streamline the process of organizing and managing college events. It allows students to easily browse, register for, and receive updates about various academic and cultural events. The system also empowers organizers to create events, manage registrations, track attendance via QR codes, and issue digital participation certificates.

3.1 Working Design

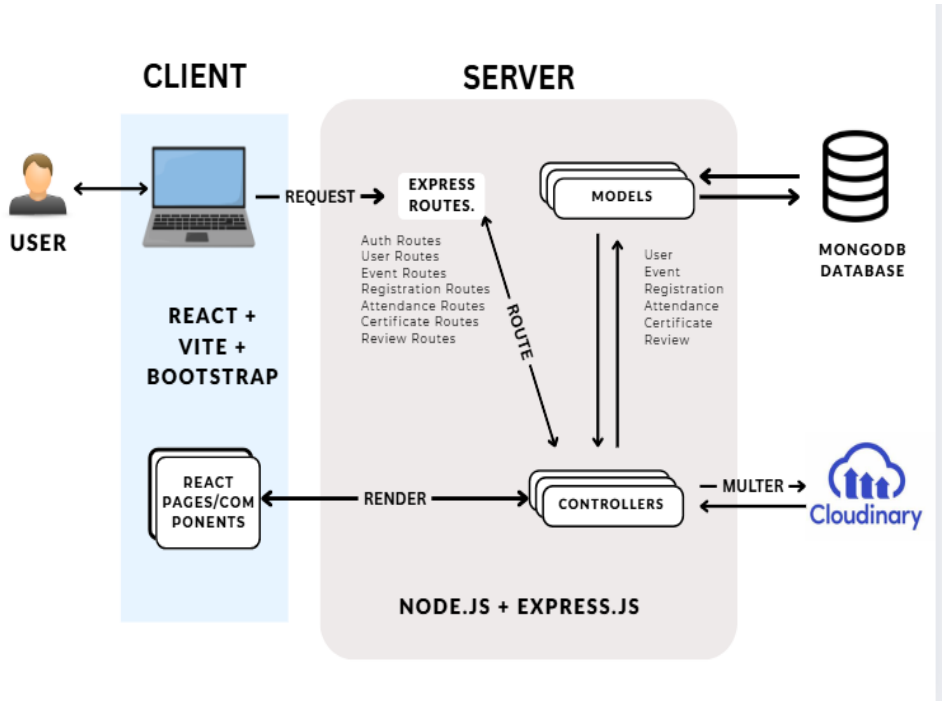


Figure 3.1: USER System design diagram

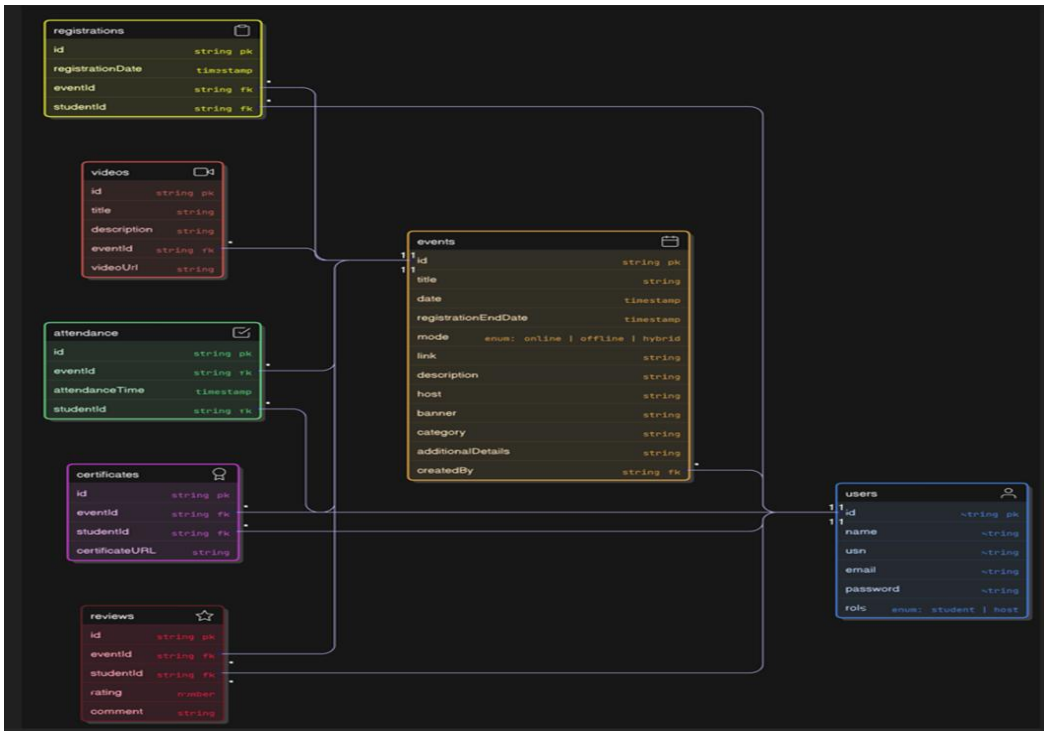


Figure 3.2: ER Diagram of database

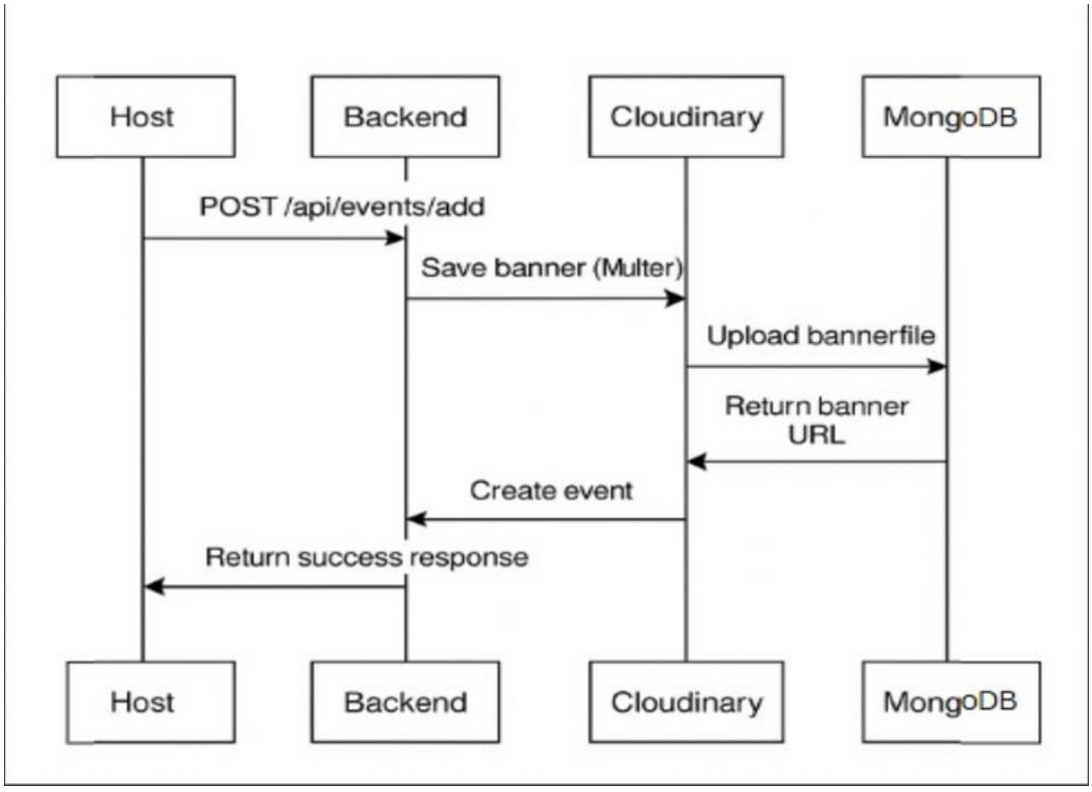


Figure 3.2: USECASE Diagram

3.1.1 CLIENT SIDE (Frontend)

Technologies Used:

- **React + Vite + Bootstrap**

Components:

- **User**: The person using the system—could be a student, organizer, or admin.
- **Laptop Interface**: Represents how the user interacts with the frontend UI.
- **React Pages/Components**: The application interface is built using React. Vite is used for fast development and build, and Bootstrap provides responsive styling.
- The frontend sends **HTTP requests** to the backend (server) and receives **responses** to render pages dynamically.

3.1.2 SERVER SIDE (Backend)

Technologies Used:

- **Node.js + Express.js**: Backend runtime and framework used to handle routing, business logic, and communication with the database.

1. Express Routes

These define the different API endpoints that the client can interact with. Each type of functionality has its own route group:

- **Auth Routes**: Handles login, registration, JWT-based authentication, etc.
- **User Routes**: Fetch or update user profiles.
- **Event Routes**: Create, read, update, or delete events.
- **Registration Routes**: Manage user registration for events.
- **Attendance Routes**: Track or update attendance, often via QR code.
- **Review Routes**: Submit or view event reviews/feedback.

3.1.3 Controllers

- Controllers contain the **business logic**.
- They **receive data from the routes**, process it (e.g., validation, computations), and **interact with the database via Models**.
- After processing, they send the **final response** back to the client.
- **Multer** is used here for **file uploads** (e.g., event banners, certificates).
- **Cloudinary**: An external cloud service used to **store and serve media files** (images, certificates, etc.). Multer handles the upload and sends it to Cloudinary.

3.1.4 Models

- These define the **schema and structure** for the database using Mongoose (for MongoDB).

- Models include:
    - **User Model**
    - **Event Model**
    - **Registration Model**
    - **Attendance Model**
    - **Certificate Model**
    - **Review Model**

3.1.5 Database

MongoDB: A NoSQL database used to store application data such as users, events, registrations, attendance records, reviews, and certificate.

Chapter 4

Implementation

The implementation of ClashPoint, an event management system tailored for Modern College of Engineering (MCE), involved the integration of multiple technologies to build a secure, responsive, and user-friendly web platform. The system was designed to cater to event organizers and student participants, providing modules for event creation, media management, attendance tracking, and feedback collection.

4.0.1 Frontend Development

The frontend of ClashPoint was developed using React.js, enabling a responsive and dynamic user interface. Key components include:

- Event Dashboard: Displays a list of upcoming and past events. Supports filtering based on category, date, and club.
- Event Detail Page: Shows event-specific information including title, description, media gallery, and registration/QR attendance options.
- QR Scanner: Allows students to scan time-bound QR codes using their device camera.
- Review System: Enables users to submit and read reviews post-event.
- State management is handled using React hooks and context API. Integration with backend APIs was done using axios.

4.0.2 Backend Development

The backend was built using Node.js and Express.js, following a modular architecture. The core modules implemented are:

- Authentication Module: Implements JWT-based login and role management (admin, host, student).
- Event Management Module: Enables CRUD operations for events. Hosts can upload event photos and videos using Cloudinary.
- Review Module: Allows users to submit and retrieve reviews associated with specific events.
- QR Attendance Module:
  - Generates a time-bound JWT token every 30–60 seconds containing event ID and timestamp.
  - Encodes the token as a QR code displayed on the event screen.

- Students scan the QR code to mark attendance, which is verified and logged by the backend.

4.0.3 Backend Development

A MongoDB database was used to ensure scalability and flexibility. The main collections include:

- users: Stores user credentials, roles, and participation history.
- events: Contains event metadata, media URLs, and host details.
- reviews: Stores user-submitted reviews linked by event ID.
- attendance: Logs attendance records with timestamps and user IDs.

4.0.4 Cloud Storage Integration

Event media (images and videos) are uploaded to Cloudinary, a cloud-based media management platform. Uploaded files are associated with events and displayed on the event detail page.

4.0.5 Security Features

- JWTs are used for secure authentication and attendance token generation.
- Middleware ensures role-based access to protected routes.
- Time-limited QR codes help prevent misuse or repeated attendance logging.

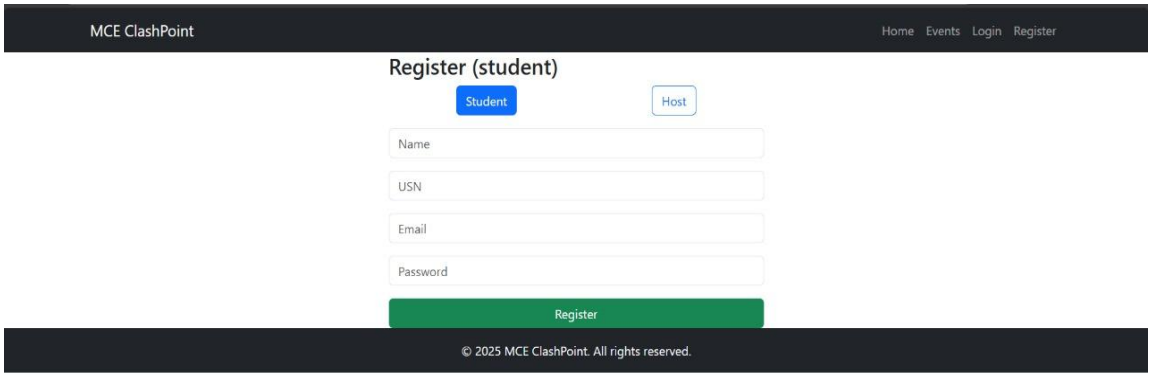
Chapter 5

Conclusion

The College Event Management Website successfully addresses the challenges of traditional event handling by providing an automated, centralized, and user-friendly digital platform. It simplifies the process of event creation, student registration, attendance tracking, and certificate distribution. By integrating modern web technologies such as React, Node.js, and MongoDB, along with cloud storage for media, the system ensures scalability, real-time interaction, and efficient data management.

This platform not only enhances the user experience for students and organizers but also reduces administrative overhead, improves event visibility, and supports better engagement in campus activities. With further enhancements, it can be extended to support mobile devices, real-time notifications, and analytics, making it a comprehensive solution for institutional event management.

OUTPUT


MCE ClashPoint
Home Events Login Register
Register (student)
Student
Host
Name
USN
Email
Password
Register
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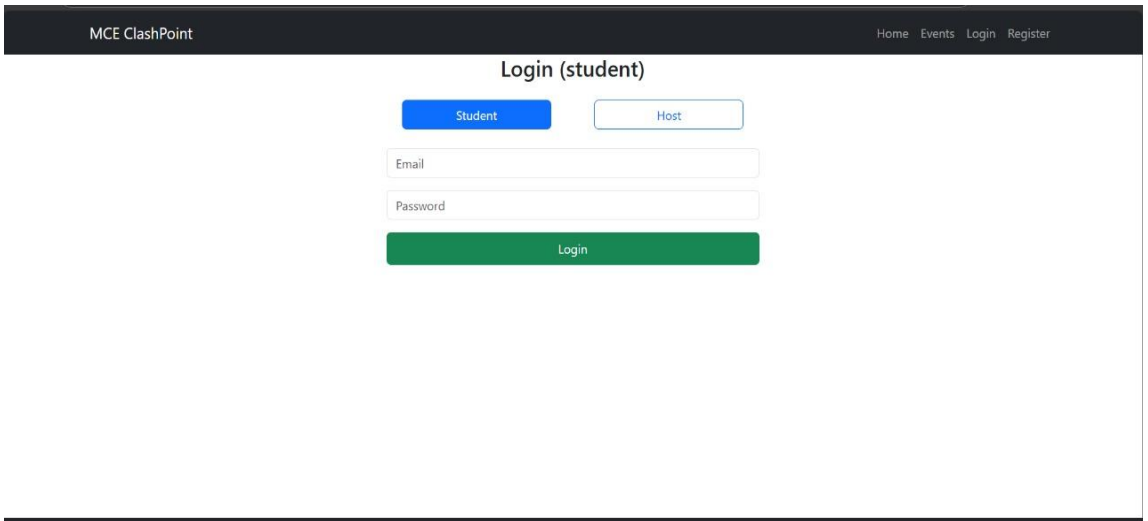
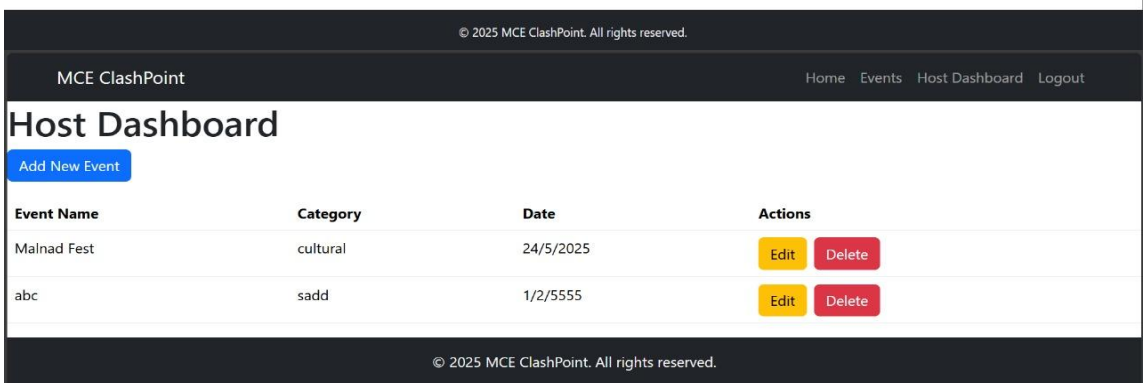

MCE ClashPoint
Home Events Login Register
Login (student)
Student
Host
Email
Password
Login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MCE ClashPoint
Home Events Host Dashboard Logout
Host Dashboard
Add New Event
Event Name
Category
Date
Actions
Malnad Fest
cultural
24/5/2025
Edit
Delete
abc
sadd
1/2/5555
Edit
Delete
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MCE ClashPoint
Home Events Host Dashboard Logout
MALNAD COLLEGE OF ENGINEERING HASSAN
MCE ClashPoint
Showcase your talent, compete with the best, and unlock new opportunities! Register, participate, and track your achievements—all in one place!
Event Promotion Videos
abc
By Lavanya
Malnad Fest
By Lavanya
Explore
Malnad Fest
full stack web development
abc
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MCE ClashPoint

Home Events Host Dashboard Logout

Edit Event

Event Name

Malnad Fest

Mode

Offline

Description

Malnad Fest is the flagship cultural and technical extravaganza of Malnad College of Engineering (MCE), Hassan – a vibrant celebration that brings together the energy, creativity, and talent of students across Karnataka and beyond. This annual fest is a melting pot of ideas, expressions, and cultural diversity, showcasing the

Host (Department/Club)

LIT Club

Additional Details

What to Expect at Malnad Fest?
Cultural Arena
Group & Solo Dance – Classical, freestyle, folk, Bollywood, and western performances that light up the stage.

Category

Tech

Event Date

24-05-2025

Registration End Date

10-05-2025

Banner Image

Choose File No file chosen Upload Banner

Supported formats: JPG, PNG, JPEG

Event Photos

Append to existing photos (uncheck to replace all photos)

Choose Files No file chosen Upload Photos

You can select multiple photos at once. Supported formats: JPG, PNG, JPEG

Current Photos (2)

Event Videos

Append to existing videos (uncheck to replace all videos)

Choose Files No file chosen Upload Videos

No file chosen

You can select multiple videos at once. Supported formats: MP4, MOV, WebM

Current Videos (1)

Update Event Delete Event

MCE ClashPoint

Home Events Student Dashboard Logout

Your Dashboard

Registered Events

Event Name	Date	Status	Certificate	Review
Malnad Fest	24/5/2025	Not Attended	No Certificate	Cannot review without attendance

MCE ClashPoint

Home Events Student Dashboard Logout

full stack web development

a | Hosted by computer science

8/5/2025, 5:30:00 am offline Venue Not Specified

Description:
Dive into the world of web development with our hands-on workshop on Full Stack Web Development! This workshop is designed to give participants a solid foundation in building dynamic, responsive, and fully functional web applications from scratch — covering both frontend and backend technologies. What You'll Learn: 🔹 Frontend Development HTML5, CSS3, JavaScript (ES6+) Responsive design with Flexbox & Grid UI frameworks like Bootstrap or Tailwind CSS Introduction to modern libraries like React.js 🔹 Backend Development Node.js & Express.js for server-side logic RESTful API creation and integration Authentication with JWT & bcrypt Database operations using MongoDB or SQL

Registration Deadline: 5/5/2025

Register Now

⭐ Event Reviews

Leave a Review

Rating

★★★★★

Comment

Submit Review

No reviews yet.

← Back to Dashboard ← All Events

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