Six Weeks Industrial Training Project Report

On

CampusConnect

Submitted for the partial fulfilment for the award of degree of

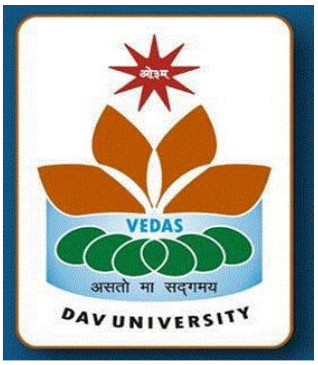
Bachelor of Technology

in

Computer Science and Engineering

Batch

(2022-2026)



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My appreciation extends to all faculty members and classmates whose suggestions and cooperation helped strengthen the quality of this work. Lastly, I am deeply grateful to my family for their constant encouragement and support, which motivated me to complete this project successfully.

DECLARATION

I, Parkash Kumar hereby declare that the work which is being presented in this project/training titled "CampusConnect" by me, in partial fulfilment of the requirements for the award of Bachelor of Technology (B.Tech) Degree in "Computer Science and Engineering" .is an authentic record of my own work carried out under the guidance of Mr.Rajinder .

To the best of my knowledge, the matter embodied in this report has not been submitted to any other University/ Institute for the award of any degree or diploma.

Parkash Kumar

12200612

Certificate

This is certified that Parkash Kumar has completed industrial training during the period from June 2025 to August 2025 in our organization Fullfilment of Degree of Bachelor of Technology In computer science Engineering .

techlive
We Understand Technology

Reg. No. TL/2MNJS/K25/7305

TECHLIVE SOLUTIONS

Certificate

this certificate accredits that Mr./Ms. PARKASH KUMAR

S/o, D/o KANHAIYA SAAH

has successfully completed 2 week/month training in NODE JS (BACKEND)

from JUNE, 2025 to AUGUST, 2025

Coordinator

Director

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Company Profile

1. Company Overview

Techlive Solutions is a technology-training and software-services company based in Mohali (Phase 8 Industrial Area), Punjab, India. It provides a blend of industrial training programmes (such as Java, Python, Android, PHP) and software development/outsourcing services.
The company is seen by many students and fresh graduates as a key stepping-stone into the IT industry.

2. Vision & Mission

- **Vision**: To become a preferred partner for up-skilling freshers and converting them into industry-ready professionals, while delivering quality software solutions.
- **Mission**: To offer practical, hands-on training programmes with industry certifications (HPE in Java, Python, Android, Kotlin) and to build a strong placement pipeline so that trainees transition into jobs.

3. Key Services & Training Offerings

- **Industrial Training**: Programs for CSE/IT/ECE students in Java (Advanced Java), Python, Android, PHP, Kotlin,
- **Software Development / Outsourcing**: Custom software applications and web development services across domains.
- **Placement Support & Certifications**: Helps students with certifications, small-group training, lifetime access to resources, and job placement assistance.

4. Location & Background

- Address: E-92, Ground Floor, Phase 8 Industrial Area, Near Seasia Building, SAS Nagar (Mohali) – 160055, Punjab.
- Year of establishment: Around 2013-2014 in the Mohali/Chandigarh region.
- Market positioning: One of the well-rated training institutes for advanced Java and web technologies in Mohali.
-

5. Achievements & Reputation

- Earned a strong reputation for hands-on training, supportive staff, and real-world project work by many students.
- Diverse program portfolio enabling freshers to choose full-stack tracks, certifications and internships.
- Active presence on social media and training marketplaces highlighting their offerings and student testimonials.

Mission

"Our mission is to deliver practical, hands-on training and modern software development services through advanced technologies, expert mentors, and real-world project exposure—ensuring every learner becomes capable, confident, and job-ready."

Vision

"To empower students and professionals with industry-ready skills and become a leading technology training and software development organization recognized for innovation, quality, and excellence."

Goals

1. **Deliver Industry-Level Training:**
2. Build a strong technical foundation in programming, full-stack development, AI/ML, DevOps, and modern tools.
3. **Enhance Employability:**
4. Prepare students with the right skill set—technical, analytical, and professional—for placement opportunities.
5. **Develop Real-World Solutions:**
   Work on live projects and software services for clients to provide practical exposure.

- **Ensure Quality & Professionalism:**
- Maintain high standards in teaching, training content, development methodologies, and student support.

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Introduction

1.1 Introduction

In modern college environments, students and faculty participate in various activities, events, and campus-related processes. However, most institutions still rely on manual announcements, offline registrations, scattered communication channels, and non-centralized information systems. This often leads to miscommunication, confusion, and difficulty in managing student participation and event coordination.

To solve these issues, **CampusConnect** has been developed as a modern, digital platform aimed at streamlining campus event management and improving communication between students and administrators. The system provides a centralized portal where users can explore upcoming events, register online, view event details, and stay updated with real-time information.

CampusConnect is built using the MERN Stack (MongoDB, Express.js, React.js, Node.js) to ensure high performance, scalability, and a smooth user experience. It offers an interactive interface for students and a secure administrative panel for managing events, registrations, and users efficiently.

1.2 Modules of the project

CampusConnect consists of multiple modules, each designed to simplify a specific operational area within the campus:

1. Student/User Module

- Register & Login
- View all upcoming events
- Check event details
- Register for events
- View their registration history

- Manage personal profile

2. Admin Module

- Admin login authentication
- Add new events
- Edit / delete events
- View total registrations
- Manage users/students
- Handle event-related queries
- Send updates/announcements

1.3 Problem Definition

Colleges face several challenges in managing events and student participation:

- Lack of centralized event information
- Manual registration processes
- Miscommunication regarding event updates
- Difficulty in tracking student participation
- No digital record of events or registrations
- Administrative overload due to manual processes

CampusConnect resolves these issues using an automated and user-friendly system.

1.4 Proposed System

The proposed system provides the following solutions:

- A central platform for all campus events
- Smooth online registration for students
- Secure login for admin and users
- Fast event creation and management

- Real-time updates and data storage using MongoDB
- User-friendly UI created with React.js
- Stable and scalable backend using Node.js + Express.js

1.5 Key Features

- Modern MERN stack architecture
- Real-time event updates
- Secure authentication
- Dashboard-based admin controls
- Fully responsive UI with React & Tailwind
- Database connectivity with MongoDB Atlas
- Error-free event registration processing

Hardware & Software Requirements

2.1 Hardware Requirements

- **Processor:** Intel Core i3 (6th Gen or above) / AMD Ryzen 3
- **RAM:** 4 GB
- **Storage:** 250 GB HDD
- **Display:** 1366 × 768 resolution
- **Internet:** Basic broadband connection for API calls and DB connectivity

2.2 Software Requirements

- **Front End:** HTML, CSS, Tailwind CSS, JavaScript (ES6), React JS
- **Back End:** Node.js, Express.js
- **Database Tool:** MongoDB / MongoDB Atlas
- **Browser:** Mozilla Firefox / Google Chrome / Microsoft Edge
- **Operating System:** Windows Operating System / Linux
- **Text Editor / IDE:** Visual Studio Code

Technology Used

2.1 HTML

HTML stands for HyperText Markup Language, where:

- HyperText refers to the links between web pages.
- Markup Language refers to tags that define the structure of a webpage.

HTML is used to create the basic structure of web pages in the CampusConnect project. It defines how content is displayed and ensures a clean and organized layout for all frontend components.

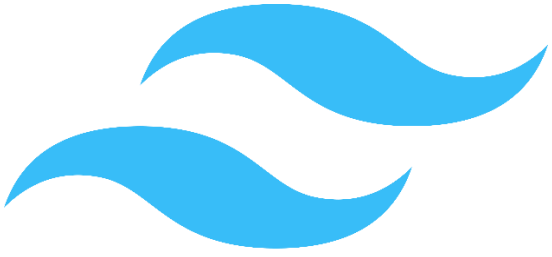
2.2 CSS / Tailwind CSS

CSS (Cascading Style Sheets) is used to style HTML elements and enhance the visual appearance of the website.

Tailwind CSS is a utility-first CSS framework used in the project for:

- Faster UI development
- Responsive design
- Ready-made utility classes
- Clean and modern layout

Using Tailwind CSS improves design consistency and speeds up development.



2.3 JavaScript (ES6)

JavaScript is a lightweight, cross-platform scripting language used for both frontend and backend of the project.

In CampusConnect, JavaScript is used to:

- Handle dynamic web content
- Implement interactive UI functionality
- Communicate with backend APIs
- Manage event operations in real time

2.4 React JS

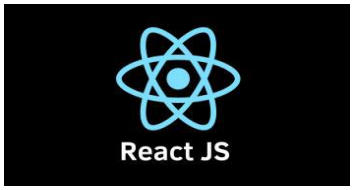
React JS is a popular JavaScript library used for building fast and interactive user interfaces.

Reasons for using React in CampusConnect:

- Component-based structure for reusable UI
- Virtual DOM for fast updates
- Smooth performance
- Easy state management with hooks
- Enhanced responsiveness

React is used to build:

- User dashboard
- Event listing
- Registration pages
- Admin panel interface



2.5 Node.js

Node.js is a server-side JavaScript runtime environment.

It is used in CampusConnect because:

- It supports fast and scalable backend development
- It handles multiple requests efficiently
- It uses JavaScript on the server side (same language across project)

Node.js powers the backend API of the system.

2.6 Express.js

Express.js is a lightweight backend framework used to create REST APIs.

It helps in:

- Managing routes
- Handling requests and responses
- Implementing middleware
- Structuring backend logic

All operations such as event creation, user login, and registration are handled using Express routes.

2.7 MongoDB / MongoDB Atlas

MongoDB is a NoSQL database used for flexible and scalable data storage.

MongoDB stores:

- User data

- Events
- Registrations
- Admin information

MongoDB Atlas (cloud database) provides:

- Easy connection
- Automatic backups
- High-level security
- Faster performance

2.8 Additional Tools & Libraries

- **Axios / Fetch API** – for API communication
- **Cors** – for cross-origin resource handling
- **Mongoose** – for connecting Node.js with MongoDB
- **JWT (JSON Web Token)** – for secure authentication
- **BCrypt** – for password encryption
- **Nodemon** – for automatic server restarts during development

SRS Documentation for CampusConnect

3.1 Purpose

The purpose of the Software Requirements Specification (SRS) is to define the functional**,** non-functional, and system requirements of the CampusConnect system. CampusConnect is a MERN-based platform designed to manage college events, registrations, and user interactions**.** This SRS outlines how the system should perform, the features it provides, and the constraints under which it operates.

3.2 Functional Requirements

3.2.1 User Panel

- Users shall register using Name, Email, Password, and Registration Number.
- Users shall log in using email and password.
- The system shall allow users to view upcoming events.
- Users can view event details including date, time, venue, description.
- Users shall register for events through the event page.
- Users can view their registered events in the “My Registrations” section.
- Users shall update their profile details.
- The system shall send notifications for event updates (optional).

3.2.2 Admin Panel

- Admin shall log in using admin credentials.
- Admin can add new events with title, description, date, and poster image.
- Admin can edit or delete events.
- Admin can view total registrations for each event.
- Admin can manage users (view/remove).
- Admin can view user registration list for each event.

3.3 Non-Functional Requirements

3.3.1 Performance

- The system should handle at least 500 concurrent users**.**
- Event loading time should be less than 2 seconds**.**
- Registration response should be processed within 1–2 seconds**.**

3.3.2 Security

- All passwords shall be securely hashed using bcrypt.
- Admin routes shall be protected using JWT authentication.
- Database access shall follow role-based restrictions.

3.3.3 Usability

- UI shall be simple and responsive using React + Tailwind.
- Navigation shall be easy for both technical and non-technical students.
- Error messages should be clear (e.g., “Invalid login credentials”).

3.3.4 Reliability

- The system shall have at least **99% uptime** (MongoDB Atlas cloud).

3.4 User Stories / Use Cases

- Data shall be backed up and remain available even after system restarts.

3.3.5 Scalability

- System must scale to support new modules (clubs, attendance, etc.) in future.
- MongoDB cluster should support auto-scaling for increased traffic.

- **Use Case 1 – Event Registration:**
  As a student, I want to register for an event so I can participate in campus activities.
- **Use Case 2 – Event Management:**
  As an admin, I want to create events so students can view and register.

- **Use Case 3 – View Events:**
  As a user, I want to view all events so I can decide which ones to join.
- **Use Case 4 – Manage Users:**
  As an admin, I want to see all users so I can ensure proper platform usage.
- **Use Case 5 – View My Registrations:**
  As a user, I want to see the list of events I have registered for.

3.5 Constraints

1. The system must be developed using the MERN Stack only.
2. Internet connection is required for data access from MongoDB Atlas.
3. Admin authentication must be implemented using JWT tokens.
4. Free-tier resources of MongoDB Atlas should be used (academic project).
5. Images (event posters) should be optimized before upload (if Cloudinary used).
6. Browser compatibility must be maintained for Chrome/Firefox/Edge.

DATA FLOW DIAGRAM

The Data Flow Diagram (DFD) provides a visual representation of how data moves through the TrackIt – Lost & Found Campus System. It helps in understanding the flow of information between different entities such as users, admin, and the system database. DFD is used as a preliminary step to develop a clear understanding of the application without going into extreme detail at the initial stage.

The diagrams show how data is entered, processed, and stored by the system.

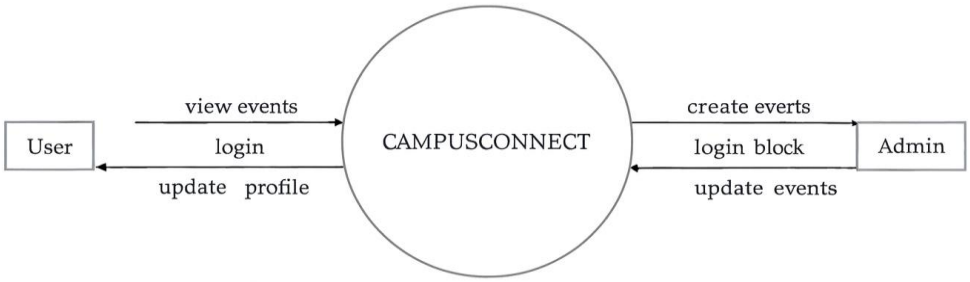


Fig.4.1 DFD 0-level

The 0-Level Data Flow Diagram of the CampusConnect – Event & Registration Management System represents the entire system as a single unified process and illustrates how Users and Admins interact with it. At this highest level, the user sends data such as login details, registration requests, event view requests, and profile updates into the system. In response, the CampusConnect system provides event details, registration confirmations, notifications, and profile information back to the user.

Similarly, the Admin interacts with the CampusConnect system by creating new events, updating event information, deleting events, and viewing the complete registration list**.** The system provides the Admin **with** user data, event statistics, and registration reports.

This level presents a clear high-level overview of the flow of information between the User, the Admin, and the CampusConnect application, without showing internal modules or

processing logic. It helps visualize the core interactions that form the foundation of the entire system.

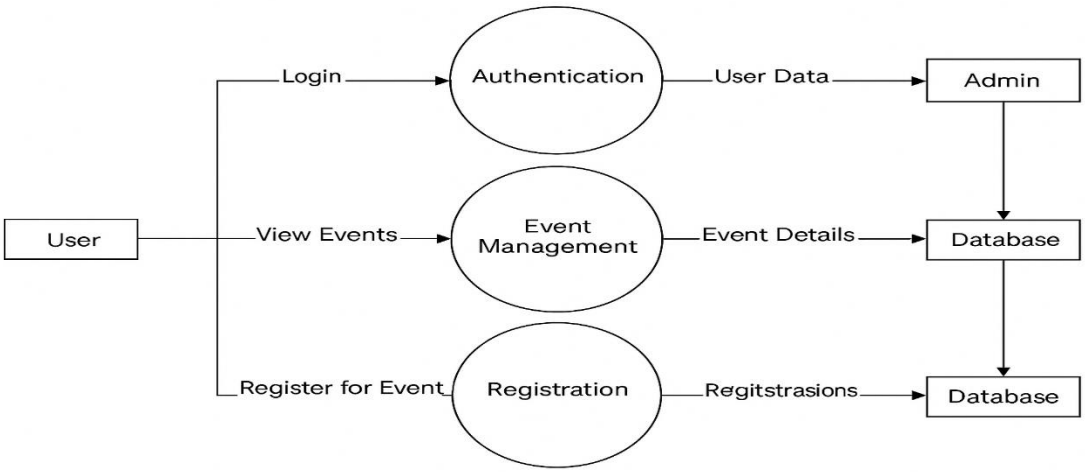


Fig. 4.2 DFD 1-Level

The Level-1 Data Flow Diagram of the CampusConnect – Event & Registration Management System provides a detailed breakdown of how the internal modules of the system interact with each other. In this diagram, the user interacts with several major components such as the Authentication Module**,** Event Management Module**,** and Registration Module**.**

When the user performs login or signup, their information is processed through the Authentication Module, where credentials are verified and stored securely in the system database. Similarly, when the user views event details or browses upcoming events, the Event Management Module retrieves the required event information from the database and presents it to the user.

When the user registers for an event, the Registration Module collects user data and event details, and stores the registration information inside the database. All actions, such as viewing events, registering for events, or updating user profiles, continuously interact with the centralized database to fetch or store information.

On the admin side, administrators can perform operations such as creating new events, updating event details, deleting events, or viewing registration reports through the **Admin Panel**. These actions update the database immediately, ensuring that students always see the latest event information.

4.3 DFD 2-LEVEL:-

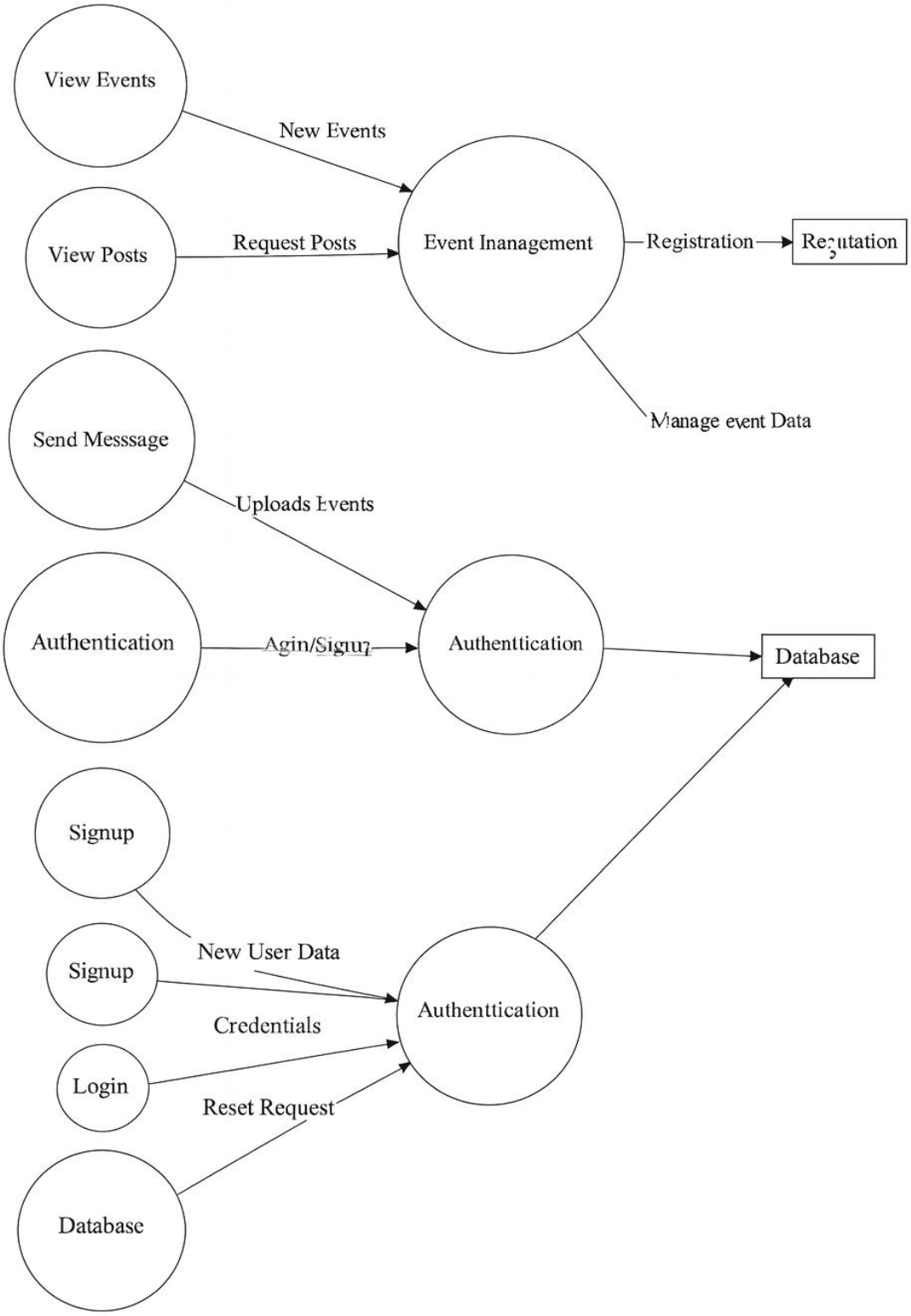


Fig 4.2 DFD 1-Level

The Level-2 Data Flow Diagram of the CampusConnect system explains the detailed internal working of each module inside the application. The Event Management module handles operations such as providing event details, retrieving upcoming events, and managing event data created by the admin. It also sends requests to and fetches information from the database whenever users view events or when the admin updates event records.

The Registration module manages event registration activities. When a user registers for an event, the module collects the required data and stores the registration details in the database. It also retrieves user-specific registration records for the "My Registrations" section.

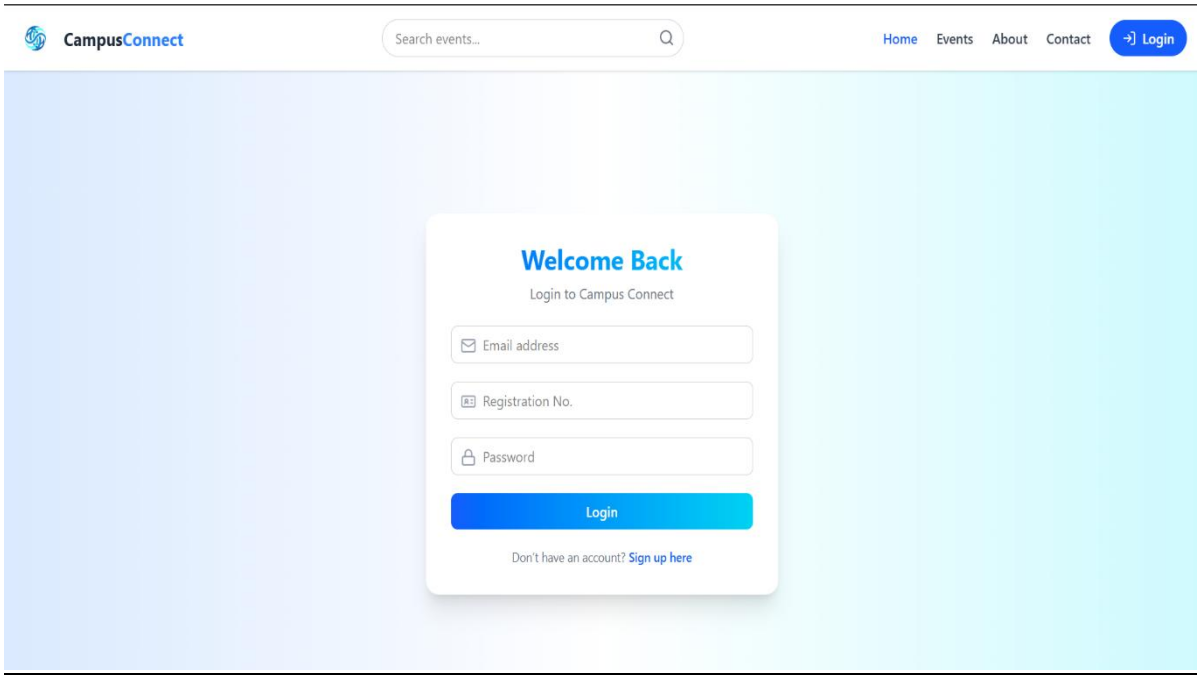
The Admin Panel allows administrators to create new events, update event details, delete events, and view registration reports. All admin actions directly update the event and registration data stored in the system database to ensure that users always access the latest information.

The Authentication module processes signup data, login credentials, and profile updates. It securely stores and retrieves user information from the database, ensuring only verified users can access protected features of the platform.

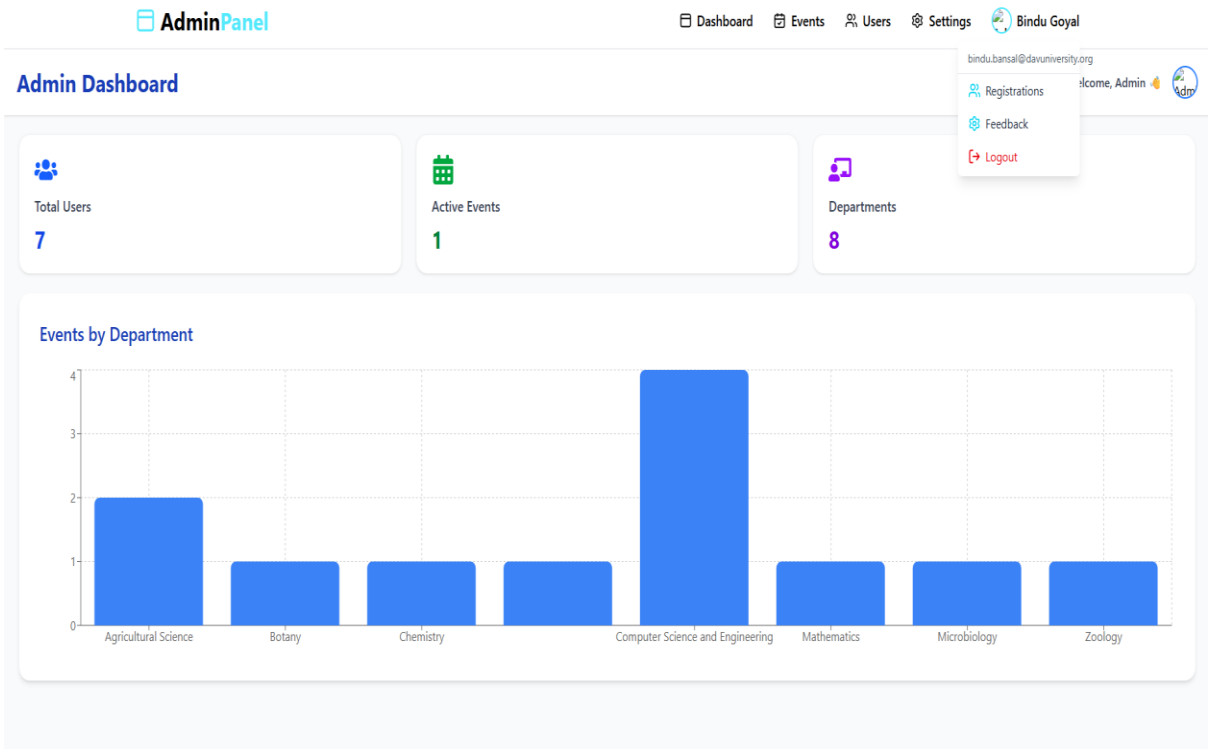
All modules communicate with the central database to save, update, retrieve, and manage the required data. This level provides a clear breakdown of how authentication, event handling, registration processing, and admin functions work together inside the CampusConnect application.

Coding and Implementation

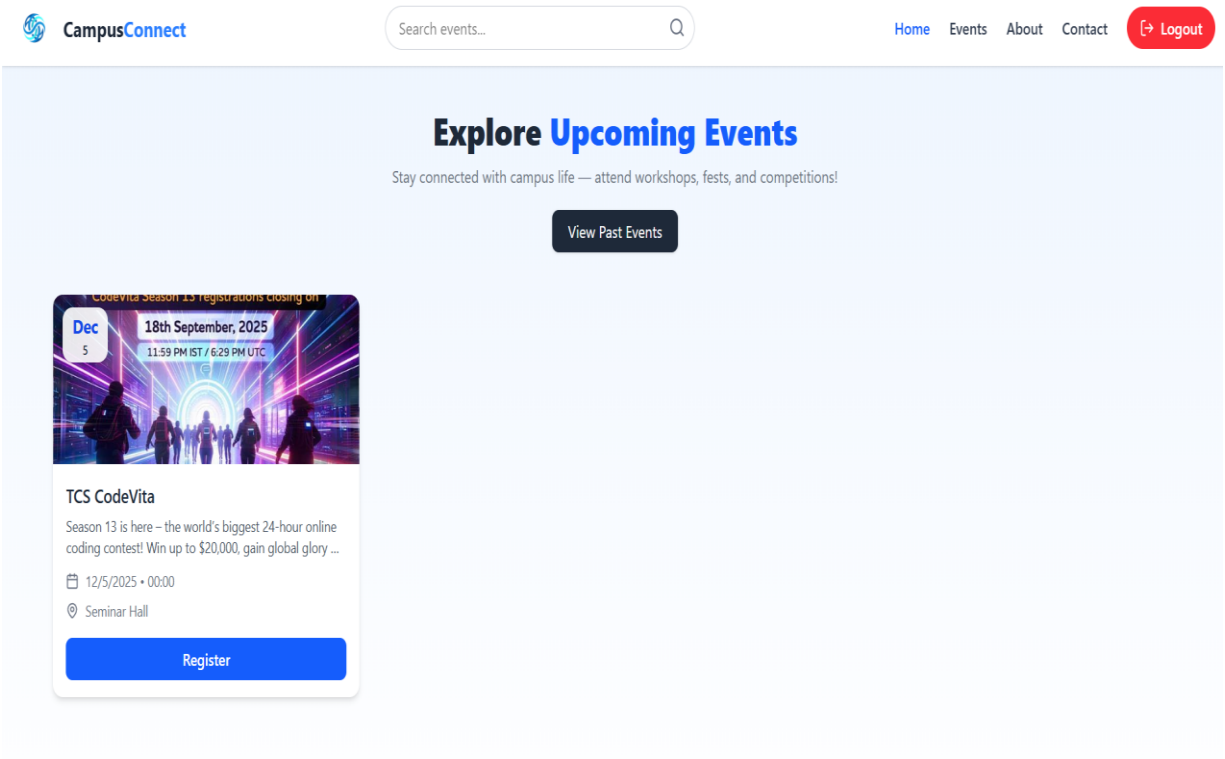
Admin Login



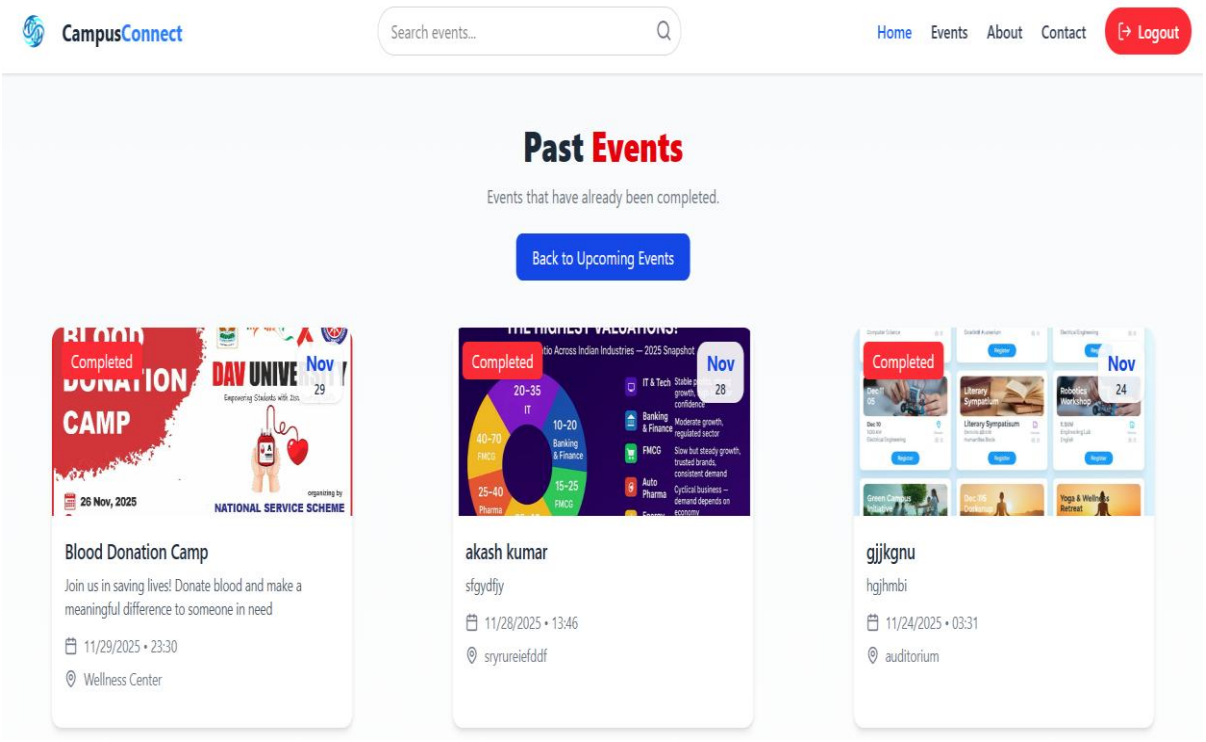
Admin Interface



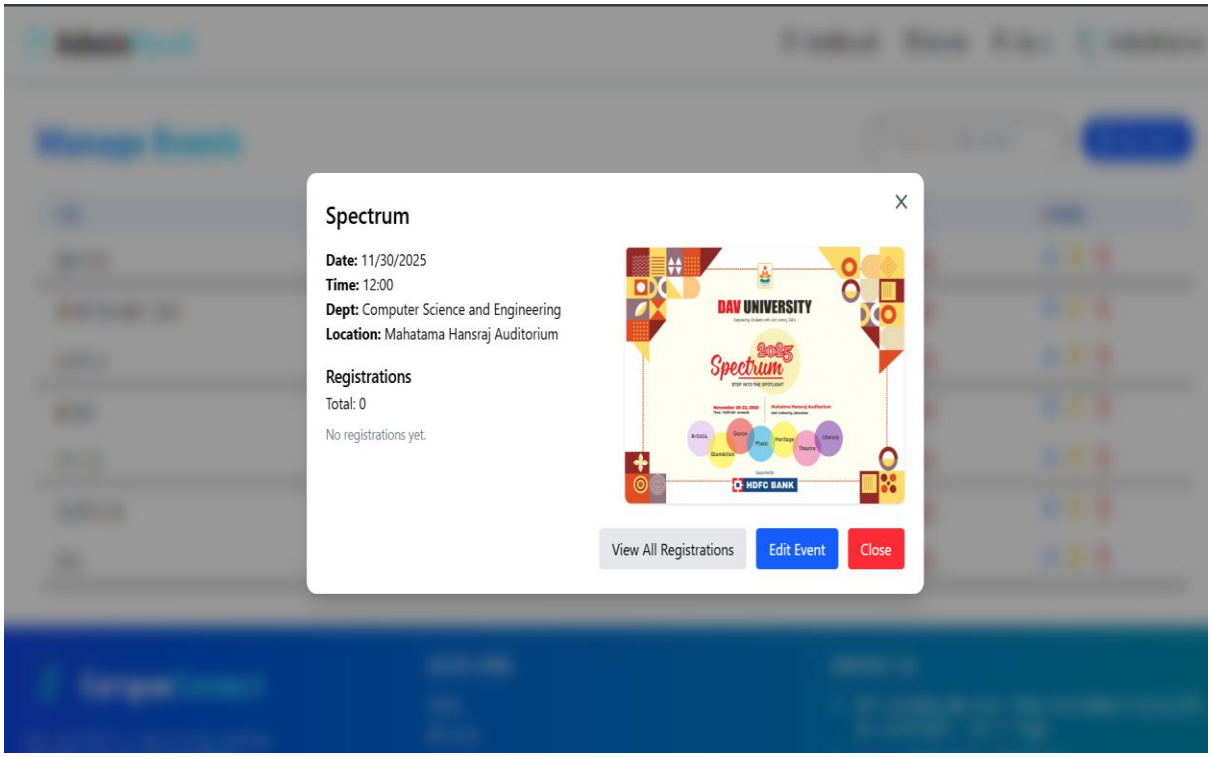
Upcoming events



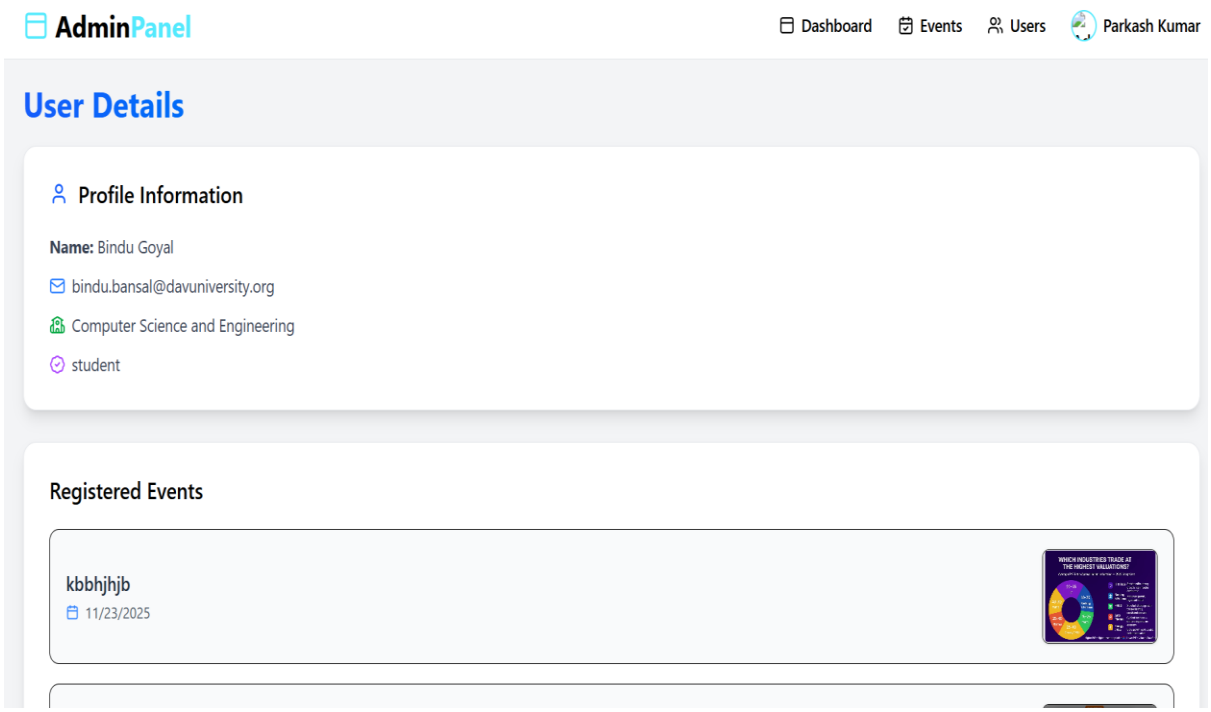
Past Events



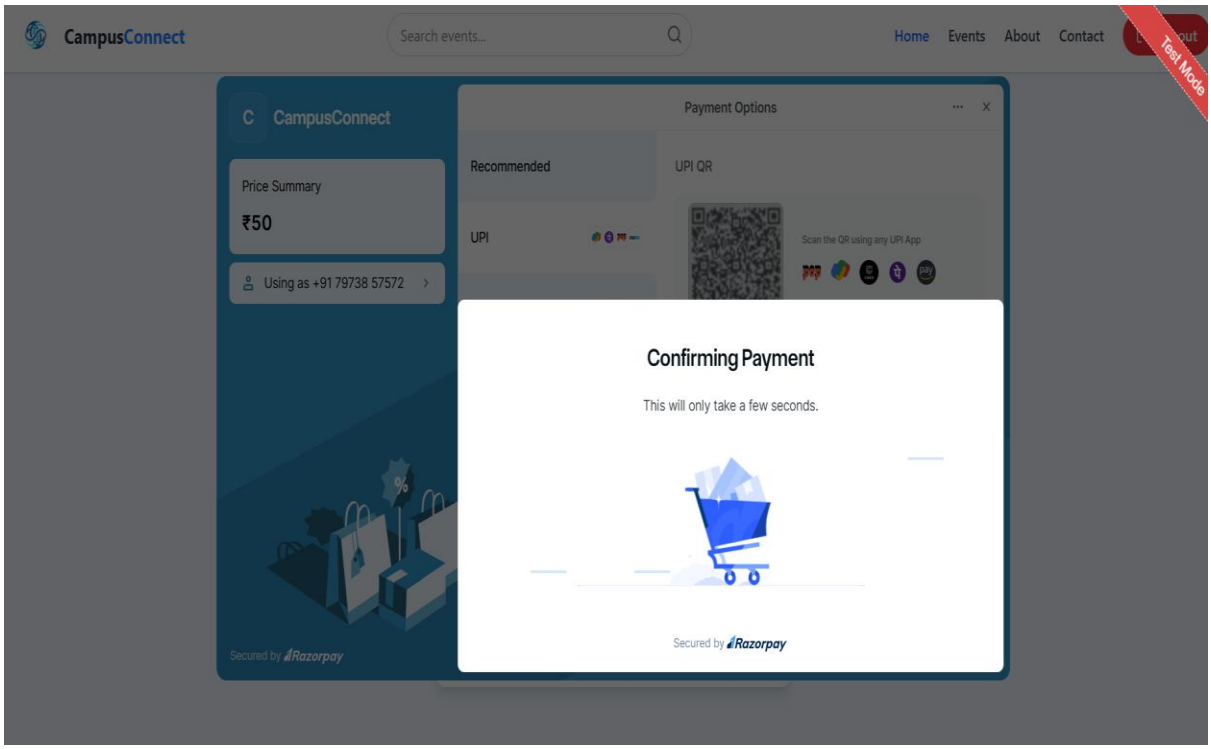
Manage Event



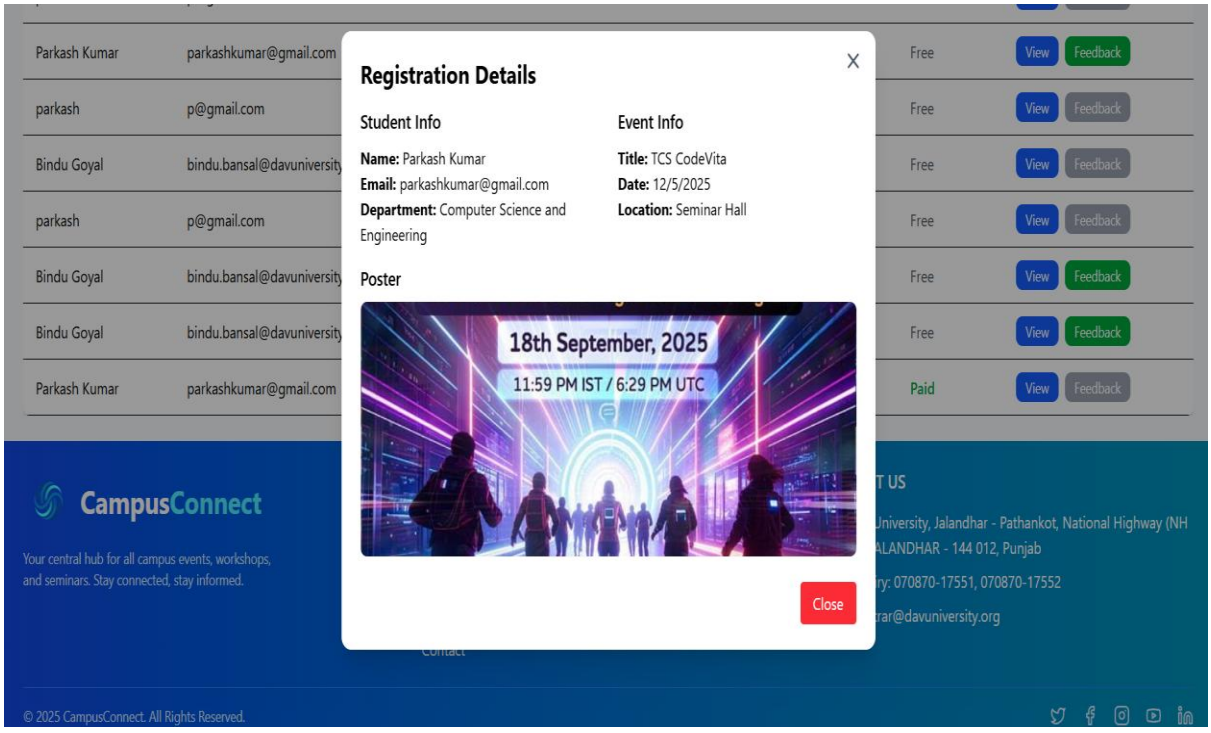
Manage User



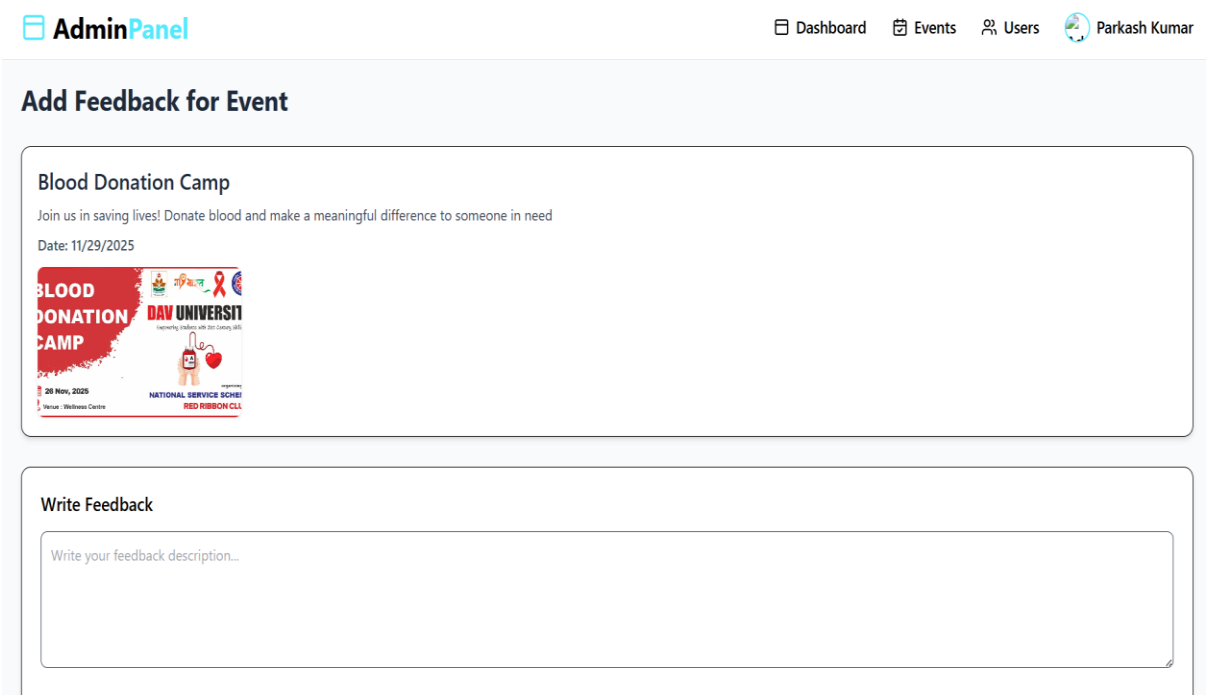
Register



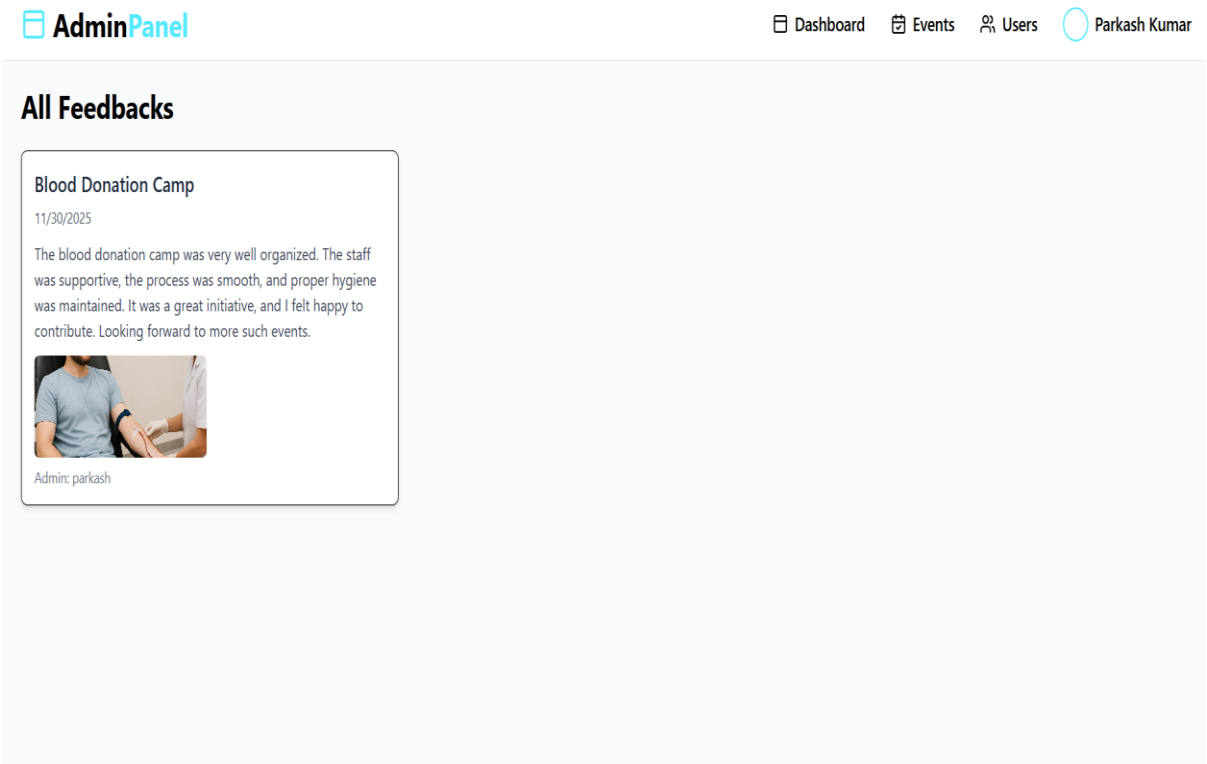
Registrations



Feedbacks



Feedback Form



FUTURE SCOPE

The CampusConnect system has the potential to be developed into a fully integrated digital platform for managing a wide range of campus-related activities. In the future, the system can be expanded to include features such as club and society management, attendance tracking for events, and automated certificate generation for participants. A real-time chat or announcement system can also be added to improve communication between students and event organizers.

The platform can be enhanced by integrating advanced technologies such as push notifications for event reminders, AI-based event recommendations based on student interests, and analytics dashboards for administrators to monitor participation trends. Additional security improvements like multi-factor authentication and role-based access control can further strengthen the system.

The system can also be extended as a mobile application for Android and iOS for better accessibility and convenience to users. With integration of payment gateways, the platform can support paid events and streamline transactions. Overall, there is a large scope to scale the system to support multiple departments, multiple campuses, and even inter-college events, making CampusConnect a comprehensive digital solution for academic event management.

CONCLUSION

The CampusConnect – Event & Registration Management System represents an important step toward digitalizing and simplifying event-related activities within colleges and universities. It improves the traditional process of managing events by providing a centralized platform where students can view upcoming events, register easily, and stay informed, while administrators can efficiently create, update, and monitor events. By reducing manual work and eliminating communication gaps, the system enhances transparency, accuracy, and overall convenience for both students and administrators.

Implementing a system like CampusConnect requires institutions to understand their operational needs, user expectations, and available technical resources. When integrated properly, this platform significantly improves the coordination of campus activities and ensures smooth management of events. Overall, CampusConnect offers a practical, user-friendly, and scalable solution that strengthens student engagement, supports organized planning, and contributes to a more digitally connected campus environment.