

# Report

# College Festival Management Web Application Development

## Sampreeth ke Trophies

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## 1 Overview

The College Cultural Festival Management Web Application aims to provide a comprehensive platform for managing various aspects of a university cultural festival. The system caters to different user roles including external participants, students, volunteers, organizers, and database administrators. The system facilitates event browsing, registration, volunteer management, logistics handling, and real-time updates on event winners. This report outlines the design and implementation details of the system.

## 2 Technology Stack

- **Backend:** PostgreSQL database with Django framework
- **Frontend:** Django templates using HTML and CSS
- **Language:** Python for backend development

## 3 Schema Design

The schema designed for the system includes tables to store information about events, participants, volunteers, organizers, logistics, and user accounts. Additional tables are included as necessary to support specific functionalities. Below are all the entities used and their attributes:

- Events
- External Participants
- Students
- Users
- Venues
- Volunteers
- Accommodations
- Event results
- Organizer keys
- Participant\_accommodations

## 4 Forms

## 5 Roles

- Student: Used by students belonging to our organization. They may volunteer or register for events as long as slots are available.
- Organizer: Used by organizers assigned to the events. They need to obtain a unique organizer key from the database administrator before registering on the website. They can view the logistics of the events they are managing, add/modify the results of events, and create new events.
- External Participant: Used by students of other organizations, they can view events, register for them, and view details of events they have already registered for.
- Database administrator: Has absolute control over the database, can add/delete various users, events and modify their details, also needs to manage organizer keys to provide keys to only trusted organizers to maintain website security.

## 6 Access Control

Each page on our website requires the user to be logged in before he can access the page. Before any page is rendered, the role of the currently logged-in user is checked in order to make sure they have rights to access the page. Accessing any page using cross site requests redirects the user to their home page.

## 7 Triggers/Queries

We have used Django backend processing to process SQL queries and set up triggers, no explicit SQL queries or triggers have been used.

## 8 Features provided

External Participant

- Register with OTP
- View Events
- Register for event (if slots available)
- View details of registered events
- View Accommodation details

Student

- Register with OTP
- View Events
- Register for event (if slots available)
- Volunteer for events (if not registered for that event)
- View details of registered and volunteered events

Organizer

- Register with unique Organizer key only known to database administrator
- View events organized by the current organizer
- Add results for events
- View logistics of events

Database Administrator

- Access the entire database and its relations
- Can create / modify / delete entities
- Can filter / sort / search in different relations by appropriate attributes

## 9 Extra Features

- Organizer keys to prevent any user from registering as organizers.
- OTP-based registration employing multi-threading for OTP authentication and user deletion upon time-out, thereby enhancing security measures and mitigating bot-driven spam.
- CSRF tokens to prevent cross site forgery
- Dynamic views on all pages.
- Dynamic constraint checking, such as closing registration after maximum participants are registered.
- Storing passwords using sha256 encryption for added security.

## 10 Screenshots

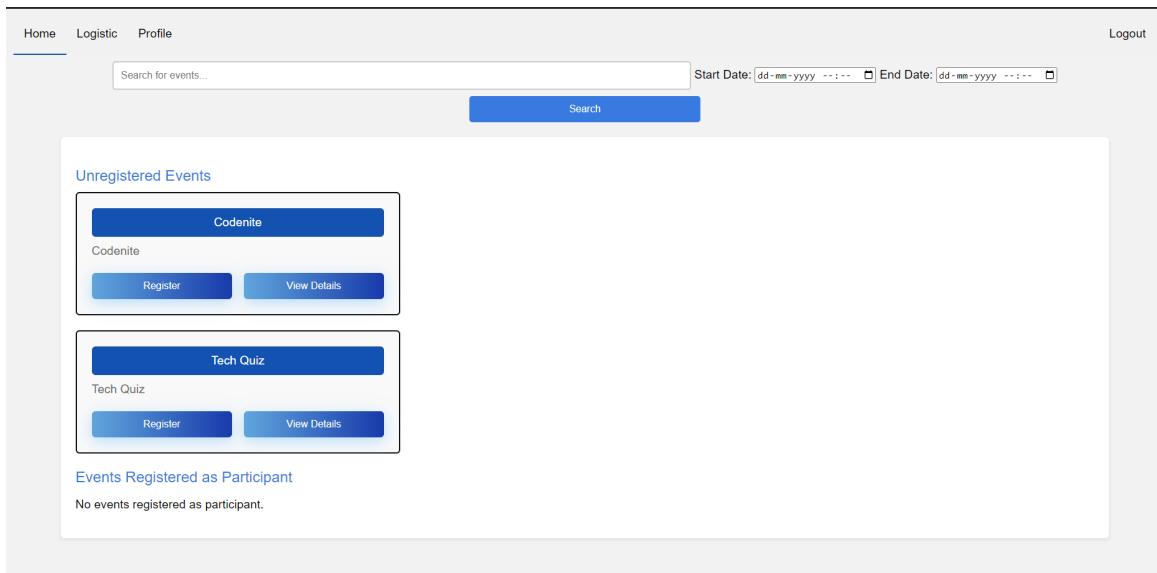


Figure 2: External Participant Homepage

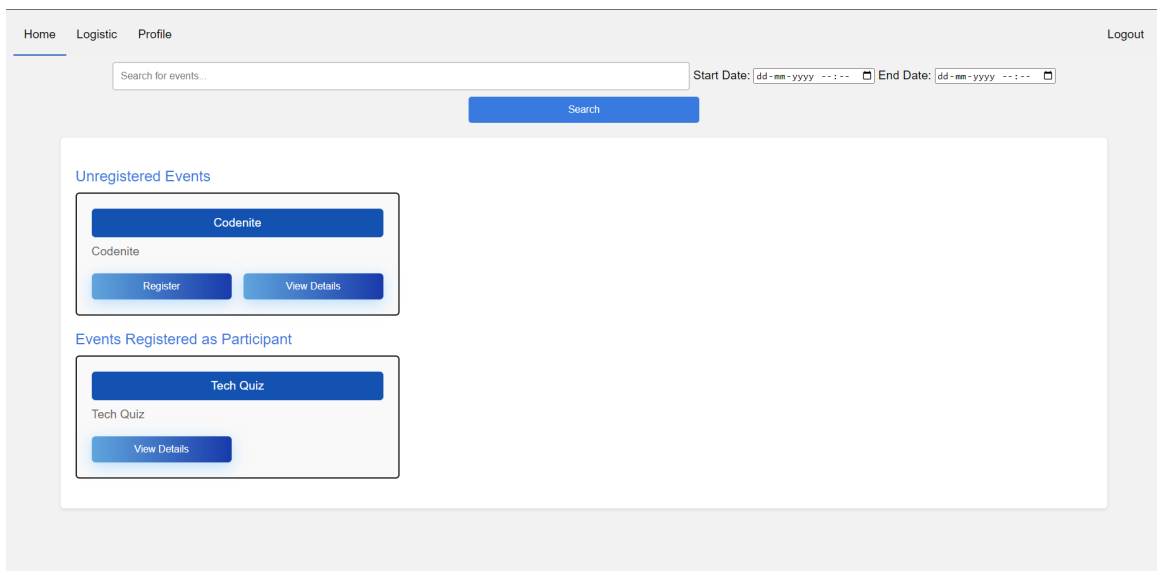
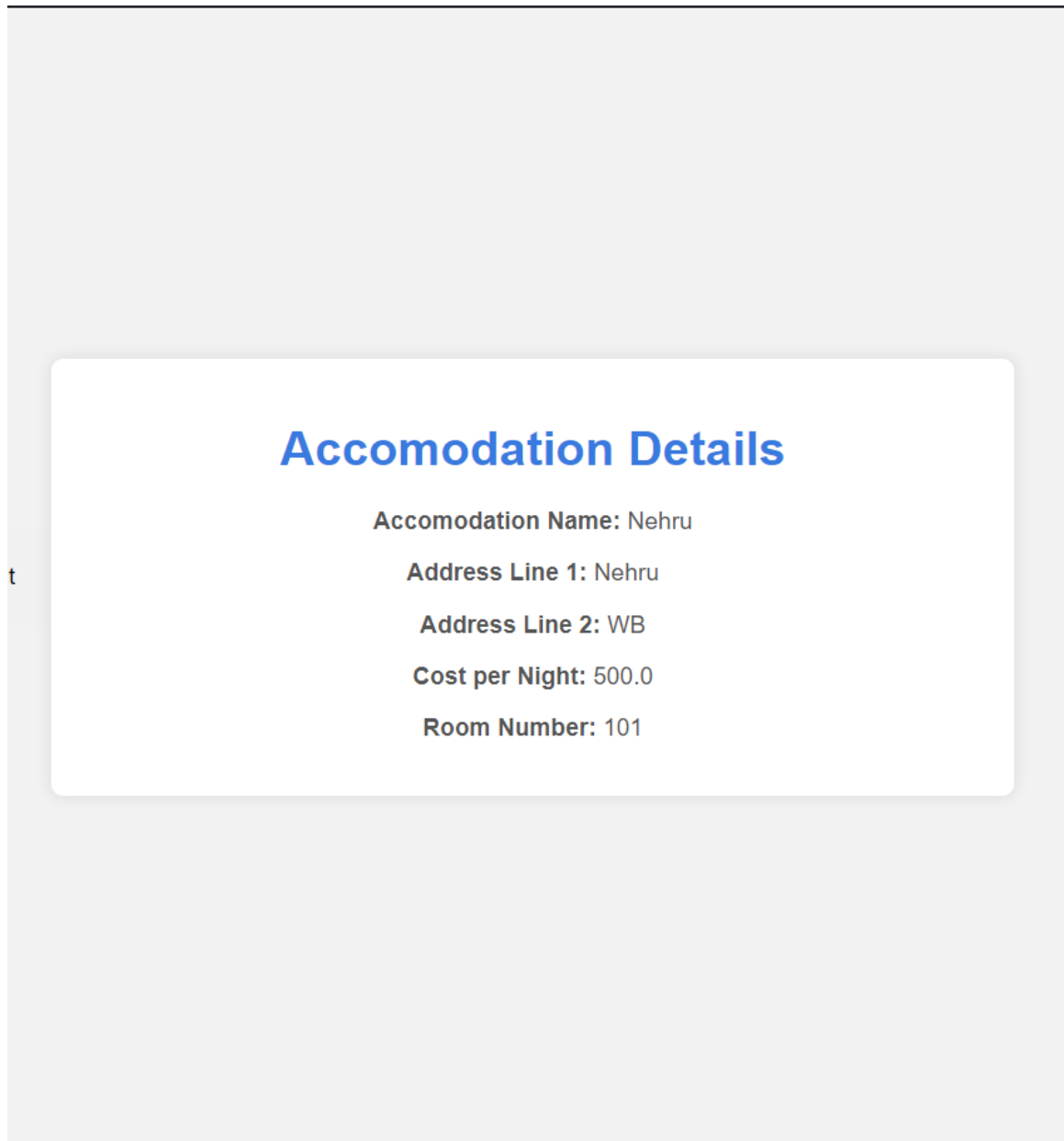


Figure 3: External Participant Homepage after Registering



**Accommodation Details**

**Accommodation Name:** Nehru

**Address Line 1:** Nehru

**Address Line 2:** WB

**Cost per Night:** 500.0

**Room Number:** 101

Figure 4: Logistics Page for External Participant

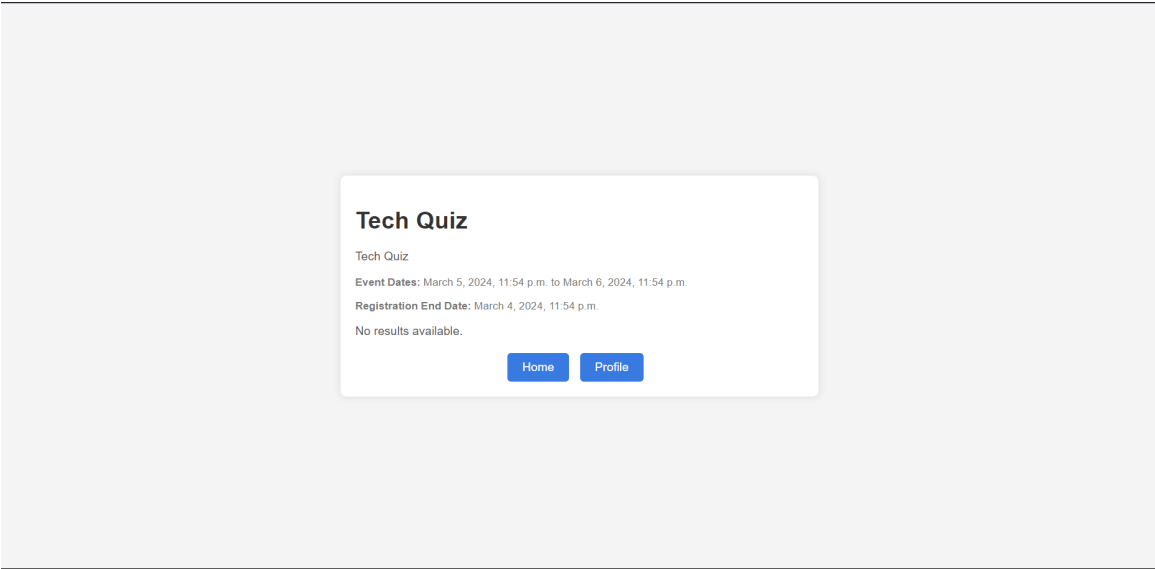


Figure 5: Event Details page



Figure 6: External Participant Profile page

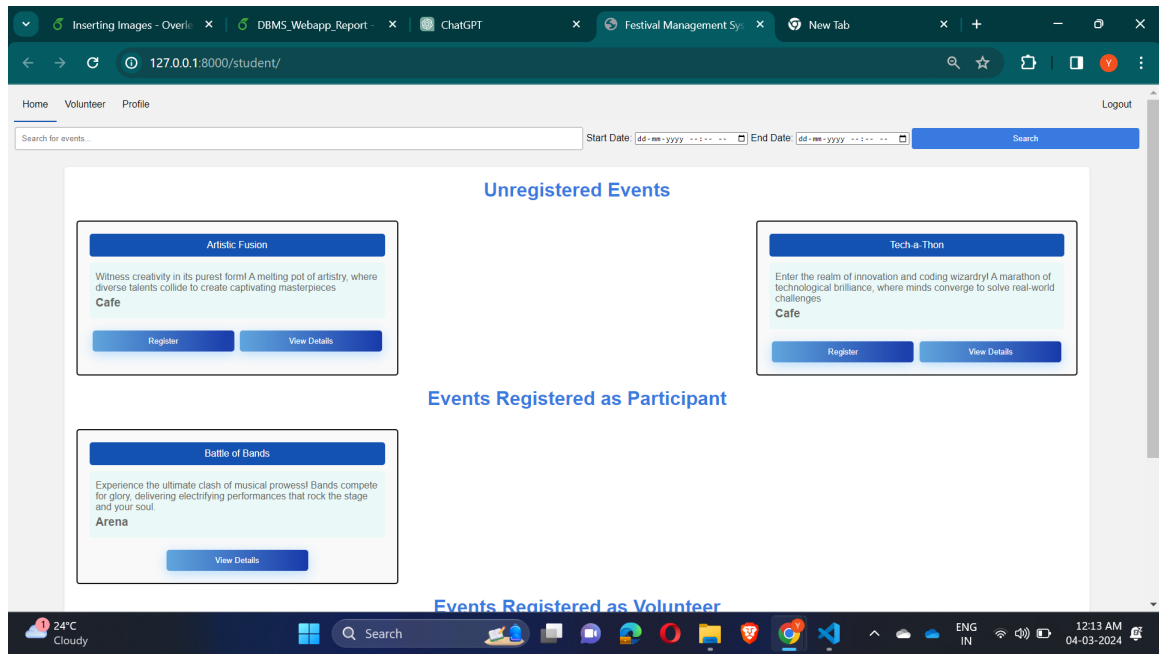


Figure 7: Student's Homepage

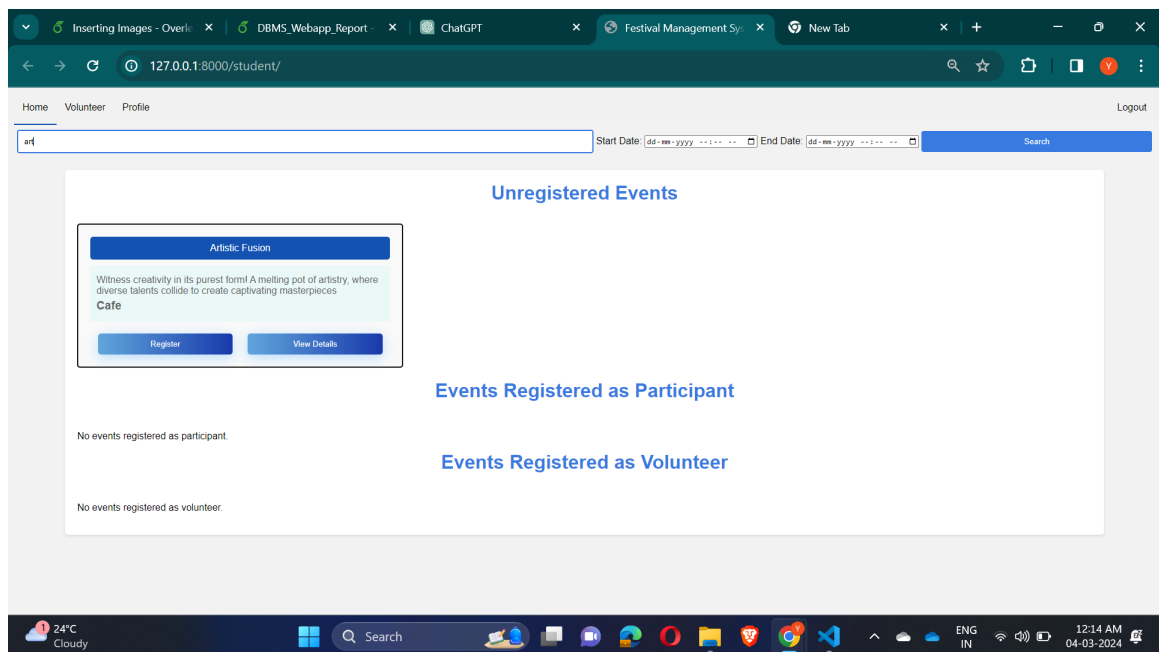


Figure 8: Search filter in action

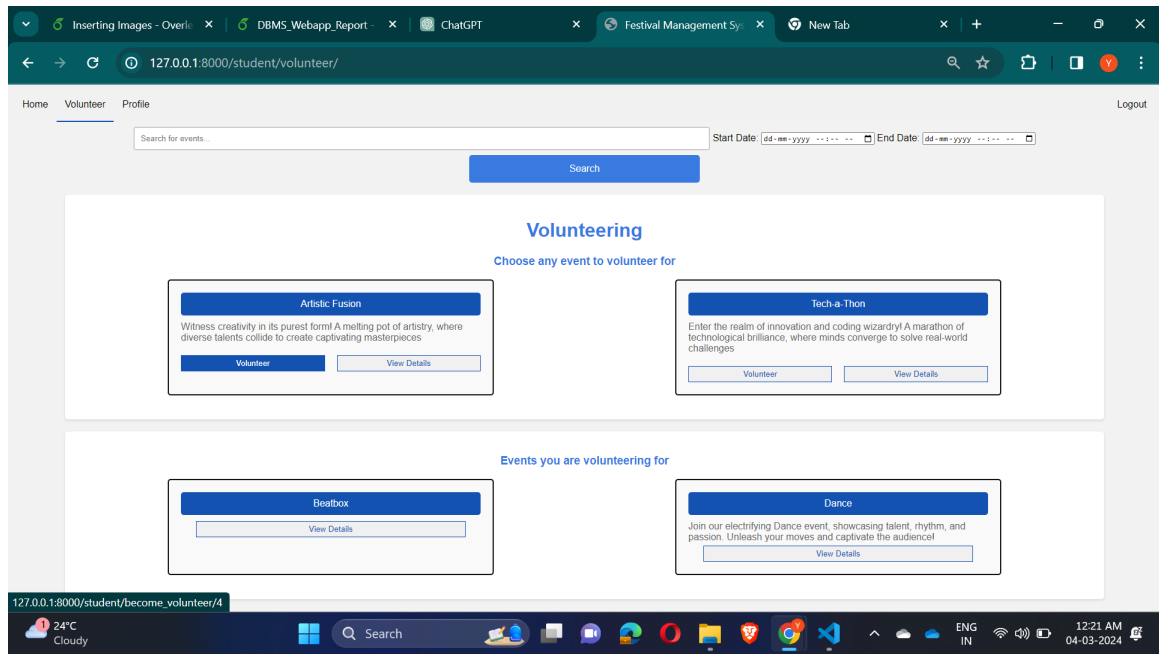


Figure 9: Student's Volunteering Page

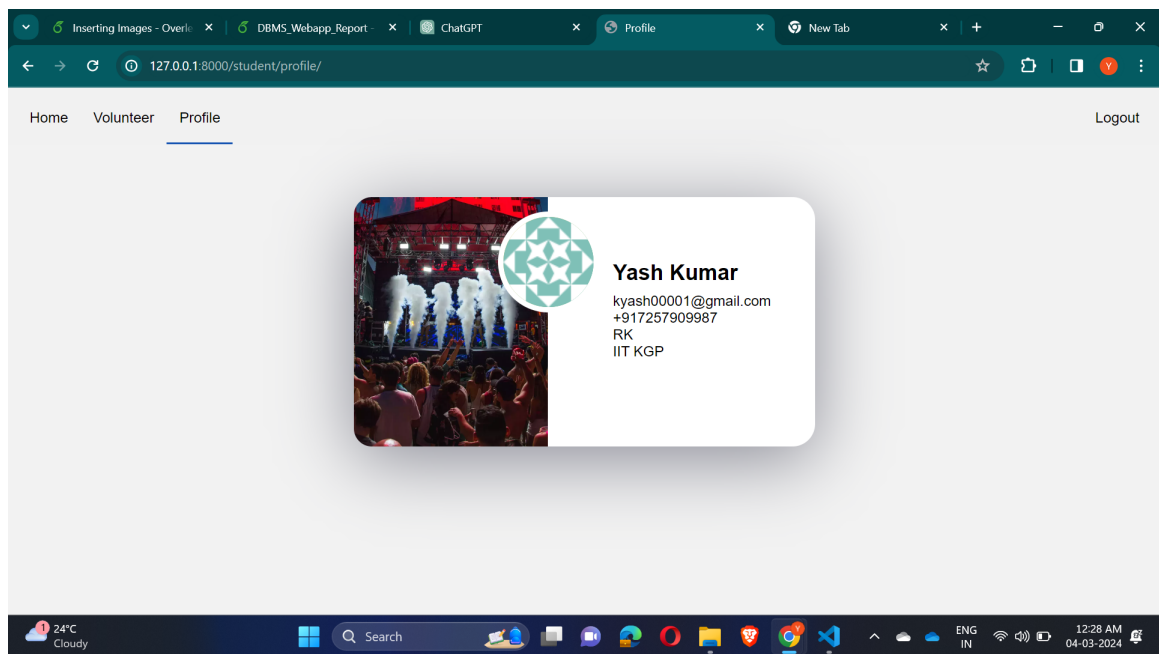


Figure 10: Student's Profile Page



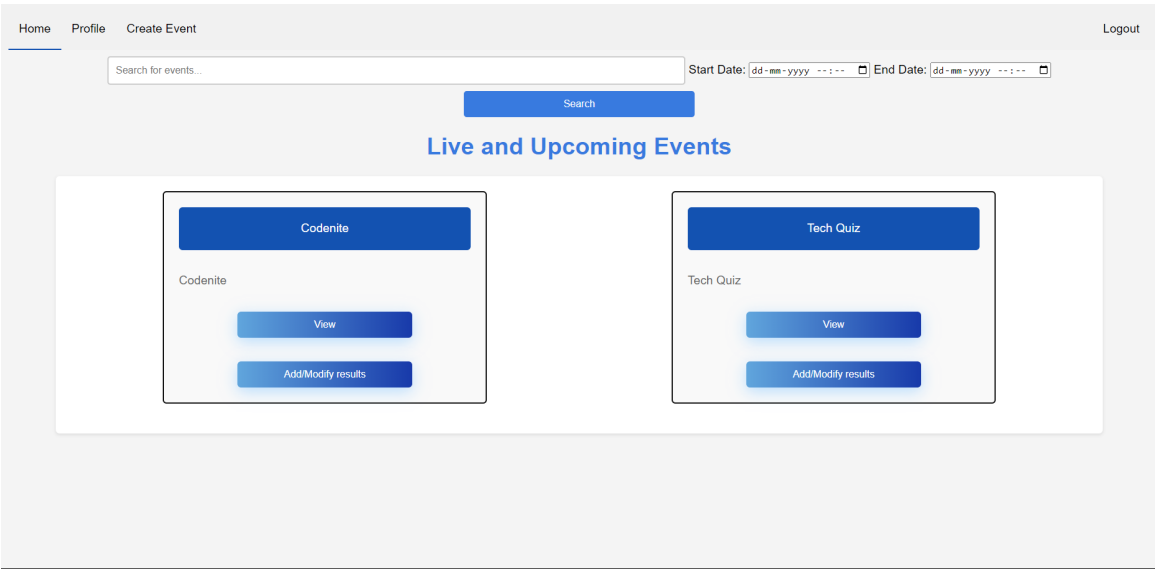


Figure 11: Organizer’s Home page

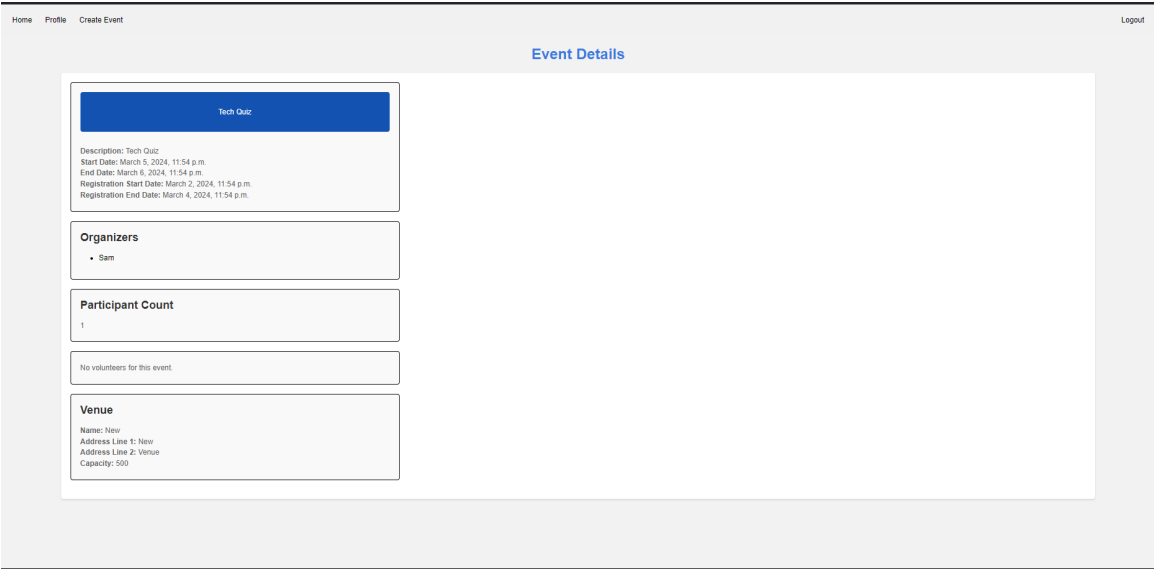
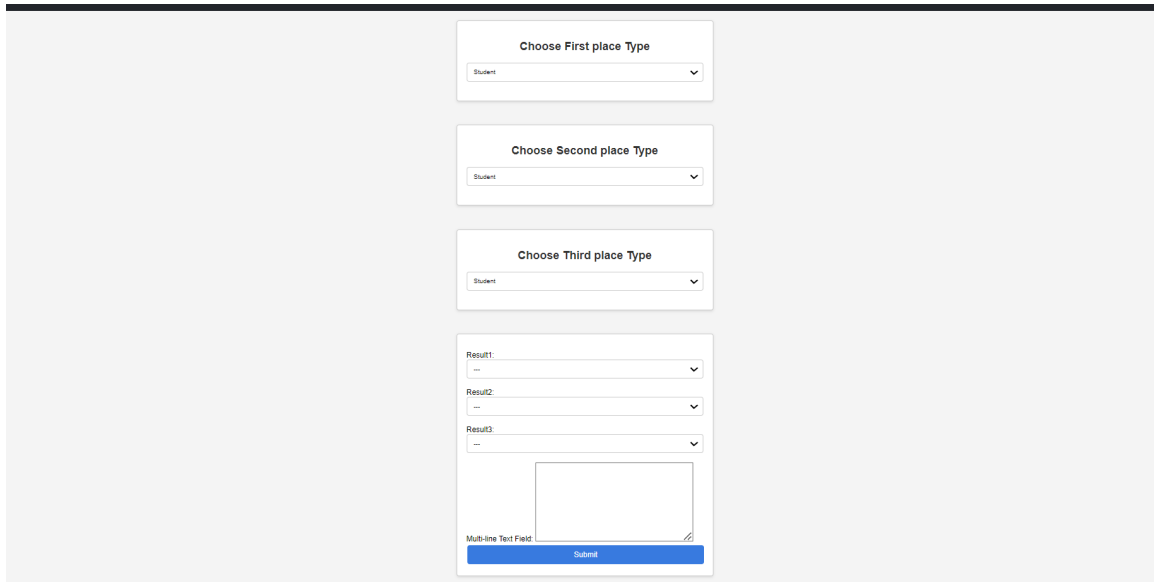
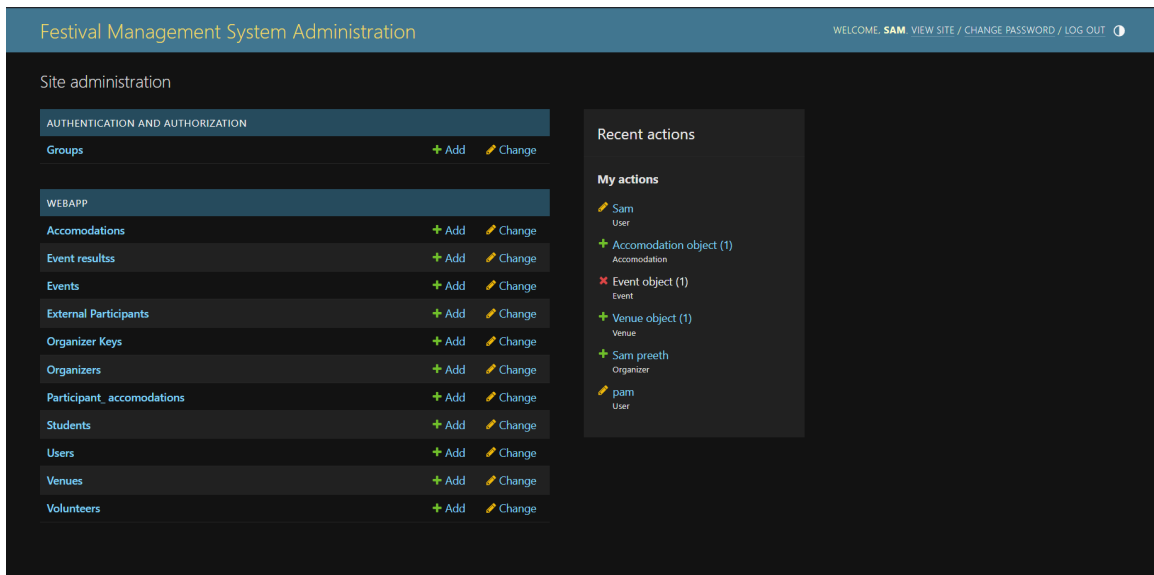


Figure 12: Organizer’s Event detail page



The image shows a web form for adding results. It consists of four stacked white boxes on a light gray background. The first three boxes are for selecting place types: 'Choose First place Type', 'Choose Second place Type', and 'Choose Third place Type'. Each box contains a dropdown menu with 'Student' selected. The fourth box is for entering results, with three dropdowns labeled 'Result1:', 'Result2:', and 'Result3:', each with a '-' selected. Below these is a 'Multi-line Text Field' and a blue 'Submit' button.

Figure 13: Organizer's Add result page



The image shows the 'Festival Management System Administration' dashboard. The header is dark blue with the title 'Festival Management System Administration' and a welcome message 'WELCOME, SAM. VIEW SITE / CHANGE PASSWORD / LOG OUT'. The main content area is dark gray and divided into two columns. The left column, titled 'Site administration', contains a list of modules under two categories: 'AUTHENTICATION AND AUTHORIZATION' (Groups) and 'WEBAPP' (Accommodations, Event results, Events, External Participants, Organizer Keys, Organizers, Participant accommodations, Students, Users, Venues, Volunteers). Each module has '+ Add' and 'Change' links. The right column, titled 'Recent actions', shows a list of actions performed by users, including 'Sam' (User), 'Accommodation object (1)' (Accommodation), 'Event object (1)' (Event), 'Venue object (1)' (Venue), 'Sam preeth' (Organizer), and 'pam' (User).

Figure 14: Admin's Home page