FEST MANAGEMENT SYSTEM

A Project Report Submitted

to

MANIPAL ACADEMY OF HIGHER EDUCATION

For Partial Fulfillment of the Requirement for the Award of the Degree

Of

Bachelor of Technology

In

Computer and Communication Engineering

By

Akhil Varanasi, Saurabh Sharma, Shreyas Kumar PM 230953496, 230953374, 230953300

Under the guidance of

Dr. Akshay K C (Lab Faculty 1)

Assistant Professor Senior scale

Department of I&CT

Manipal Institute of Technology

Manipal, Karnataka, India

Mrs. Shweta Pai (Lab faculty 2)

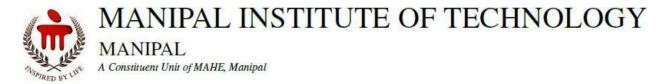
Assistant Professor

Department of I&CT

Manipal Institute of Technology

Manipal, Karnataka, India

22-04-2025



ABSTRACT

The **Fest Management System** is a robust **web-based application** developed to facilitate the smooth planning, organization, and execution of **college festivals**. It addresses the common challenges faced during fest coordination by automating essential processes such as **participant registration**, **event scheduling**, **team formation**, **committee coordination**, and **judging mechanisms**. The system follows a **modular architecture** and employs a **relational database** to ensure structured data storage, efficient retrieval, and high system scalability.

Through an intuitive user interface, it enables real-time **status tracking**, **notification alerts**, and **centralized communication**, thereby enhancing the overall experience for organizers, participants, and volunteers. By eliminating redundant manual tasks and digitizing the entire fest lifecycle, the application significantly improves operational efficiency and decision-making.

In addition to reducing paper usage and manual dependencies, the system encourages better collaboration and transparency in fest management. This solution contributes to a more sustainable, scalable, and technology-driven approach, aligning with several UN Sustainable Development Goals (SDGs) such as Quality Education, Industry Innovation, and Responsible Consumption.

ACM Taxonomy terms

- Information systems [Data management systems]
- Software and its engineering
- Applied computing

UN SDGs

1. SDG 4: Quality Education

The system facilitates learning through well-organized fests that include technical workshops, hackathons, and academic competitions, ensuring seamless participation and knowledge-sharing.

2. SDG 9: Industry, Innovation, and Infrastructure

By digitizing event management, the project enhances efficiency, reduces manual workload, and promotes technological integration in organizing large-scale college fests.

3. SDG 11: Sustainable Cities and Communities

The platform fosters community engagement by streamlining communication, enabling better collaboration among students, faculty, and external participants while ensuring smooth event execution.

4. SDG 12: Responsible Consumption and Production

By replacing paper-based registrations and schedules with digital alternatives, the system reduces waste, encourages sustainable event management, and optimizes resource usage.

5. SDG 16: Peace, Justice, and Strong Institutions

The project ensures transparency in event planning, fair participant selection, and structured management, reducing conflicts and improving governance within the organizing committee.

Table of Contents

- 1. Introduction --- 6
- 2. Literature Survey / Background --- 7
- 3. Objectives/Problem Statement --- 8
- 4. Methodology --- 9
- 5. Data design (ER Diagram, Reduction, Schema Diagram, Normalization with suitable justifications) --- 13
- 6. Results --- 21
- **7. Conclusion --- 30**
- **8. References --- 31**

List of Tables

Table No.	Table Name	Primary Key
1	Colleges	College_id
2	Participants	participants_id
3	Judges	judge_id
4	Events	event_id
5	Teams	team_id
6	TeamMembers	team_id , participants_id
7	Registrations	id
8	Judging	assignment_id
9	Committees	committees_id

10	Schedules	schedule_id
----	-----------	-------------

List of Figures

- 1. Entity Relationship Diagram
- 2. Schema Diagram
- 3. Implementation Block Diagram
- 4. Three-tier Architecture

Abbreviations

- NF Normalization Form
- BCNF Boyce Codd Normalization Form
- SQL Structured Query Language
- ERD Entity Relationship Diagram
- ACID Atomicity, Consistency, Isolation, and Durability
- DBMS Database Management System
- UI User Interface

Introduction

A database is an organized collection of data which can use a database system such as NoSQL to manage and access data. Relational database management systems such as SQL Plus are often used in order to handle complex queries, maintain ACID properties, and support relationships between data through foreign keys. DBMS provide facilities for concurrency control, backup and recovery, and efficient query processing.

1.1 Three-tier architecture

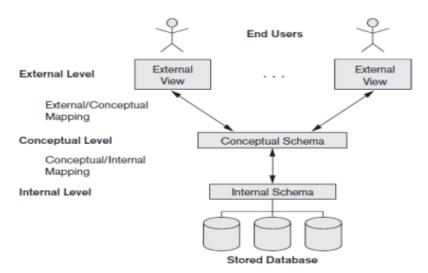


Figure 1.1: Three Tier

- **1.External Level (User View):** This is the highest level of data abstraction that describes part of the database that is relevant to a particular user. It provides a way for the end users to access the data without having any knowledge of the underlying implementation.
- **2.Conceptual Level (Logical Level):** This is the next level down and describes what data is stored in the database and the relationships among the data. This level contains the logical structure of the entire database as seen by the DBMS manager. It shields the database users from the details of the physical level.
- **3.Internal Level (Physical Level):** This is the lowest level of data abstraction and describes how the data is actually stored in the database. It deals with the physical storage of the data on the storage medium like hard disk, SSD, etc. This level is concerned with indexes, hashing, data

access paths, and physical data storage. These three levels of abstraction ensure that users can interact with a database without needing to know the complexities of how data is stored, while also allowing the database to evolve without impacting user interactions.

Chapter-2

Literature Survey / Background

Event management within educational institutions, particularly for large-scale college fests, has traditionally been a manual and fragmented process, often relying on spreadsheets, paper forms, and informal communication channels. This approach leads to inefficiencies, errors, and challenges in coordinating such events. The increasing complexity and scale of these events necessitate a more structured and automated solution.

Recent studies highlight the limitations of conventional methods in managing college events. For instance, a survey of analytics and trends in college event management systems emphasizes the need for modernization and efficiency in event planning within academic institutions. Similarly, the development of the Fest Management System is aimed to address issues like scheduling conflicts and manual registrations, thereby reducing administrative workload and enhancing participant experience.

The evolution of event management systems in educational settings reflects a shift towards digital platforms that offer centralized control, real-time updates, and seamless communication among organizers, participants, and committees. These systems not only streamline administrative tasks but also contribute to a more organized and efficient execution of college fests.

Building upon these insights, the proposed **Fest Management System** aims to integrate various facets of event organization into a single **web-based platform**. By automating processes such as **participant registration**, **event scheduling**, **team management**, and **committee coordination**, the system seeks to enhance **efficiency**, reduce **manual errors**, and provide a **seamless experience** for both organizers and attendees.

Objectives/Problem Statement

Objectives

- 1. **Centralized Event Scheduling**: Develop a system that allows organizers to create and manage event schedules, ensuring that events do not overlap and are not scheduled during examination periods.
- Efficient Participant Registration: Implement a user-friendly registration process for participants, enabling them to sign up for events seamlessly and receive timely confirmations.
- **3. Team Coordination and Management**: Facilitate the formation and management of teams, allowing participants to collaborate effectively and track their progress.
- 4. **Real-Time Communication**: Provide tools for organizers and participants to communicate in real-time, ensuring that all stakeholders are informed about updates and changes.
- 5. **Automated Judging and Feedback**: Integrate a judging system that allows for fair evaluation of participants and provides constructive feedback.
- 6. Comprehensive Reporting and Analytics: Offer reporting tools that provide insights into participant engagement, event success, and areas for improvement.
- 7. **Sustainable Event Management**: Promote eco-friendly practices by reducing the reliance on paper-based processes and encouraging digital alternatives.

Problem Statement

Organizing and managing college fests involves a myriad of tasks, including scheduling events, registering participants, coordinating teams, and ensuring smooth communication among organizers and attendees. Traditionally, these processes are handled manually, leading to

inefficiencies, scheduling conflicts, and a lack of centralized information. The absence of a unified platform often results in mismanagement and dissatisfaction among participants and organizers .

Chapter-4

Methodology

The **Fest Management System** is designed to automate and streamline the entire event management process, from participant registration to event scheduling and team coordination. The system is web-based and built with an emphasis on ease of use, ensuring both organizers and participants can effectively interact with it.

1. Login and Registration System

- Users can log in as either Participant, Judge, or Admin.
- Participants: Can register for events, form teams, and receive event-related updates.
- **Judges**: Can assess and score participants based on their performance in events.
- **Admins**: Have full access to the backend and can manage the overall event flow, including participant registrations, event schedules, and team management.

2. Participant-Specific Functionalities

- **Create Account**: Participants can create an account, providing personal details such as name, email, and phone number.
- **Event Registration**: Participants can browse and register for events, selecting from a list of available activities.
- **Team Formation**: Participants can either form or join teams for collaborative events, specifying their roles within the team.
- **Profile Management**: Participants can update personal details, change passwords, and track their event participation history.
- **Notifications**: Receive automatic updates and reminders for event schedules, changes, or cancellations.

- **Event Scheduling**: View detailed schedules for events they are registered for, including timings and locations.
- **Ticketing and Payment**: For paid events, participants can complete their registration via secure payment methods and download e-tickets.

3. Judge-Specific Functionalities

- **Login & Dashboard**: Judges can log in to their dedicated dashboard, where they can view a list of events and participants they are assigned to judge.
- **Event Evaluation**: Judges can view detailed descriptions of the events and assess participants based on predefined criteria.
- **Score Submission**: After evaluating a performance, judges can enter their scores, which will be recorded and used to determine winners.
- **View Participant Details**: Judges have access to relevant participant information, such as team composition and prior event history, to evaluate their performance effectively.

4. Admin-Specific Functionalities

- **Login & Dashboard**: Admins have access to a comprehensive dashboard that displays an overview of all events, participants, and judges.
- Event Management: Admins can create, modify, or cancel events, including setting dates, locations, and event categories.
- **Participant Management**: Admins can approve or reject participant registrations, assign participants to events, and manage team memberships.
- **Judge Management**: Admins can assign judges to specific events, track their evaluations, and ensure that judging criteria are being followed.
- **Team Management**: Admins can view, manage, and assign participants to teams, ensuring each team has the right members for specific events.
- **Notifications & Communication**: Admins can send notifications to participants and judges regarding event updates, schedule changes, and general announcements.
- **Report Generation**: Admins can generate detailed reports on event registrations, participant performance, and overall event outcomes.

5. Booking and Payment

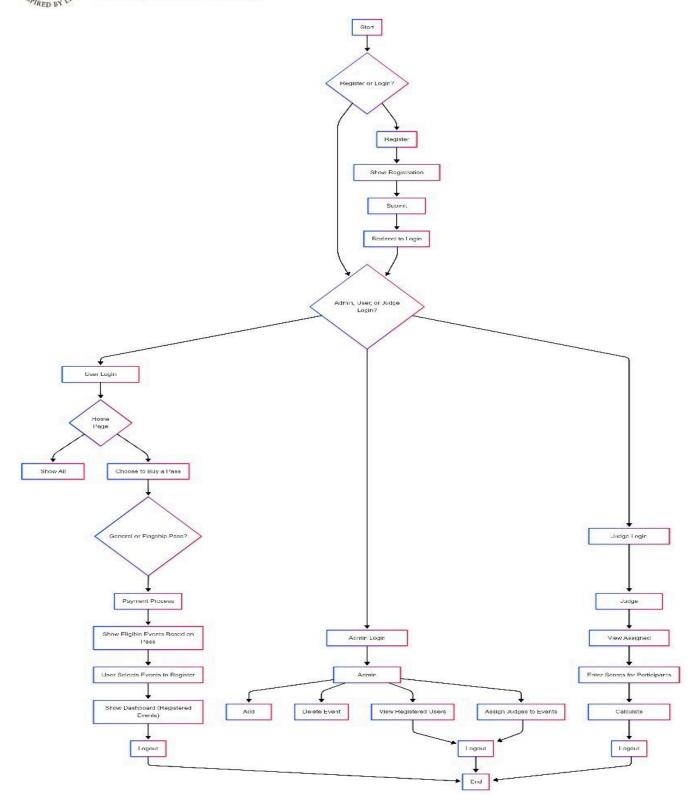
- **Event Booking**: Participants can select events, make secure payments, and receive a booking confirmation.
- **Digital Tickets**: Participants receive e-tickets with event details post-payment.
- Payment Methods: Supports credit/debit cards or UPI through secure gateways.
- Payment Confirmation: Real-time acknowledgment of successful transactions.

6. Reports

- Comprehensive Reporting: Admins can generate reports related to:
 - Number of registrations per event.
 - o Judge evaluations and scores.
 - Transaction history and payment statuses.

7. Database

- Relational Database (MySQL): Stores structured data on:
 - Users (Participants, Judges, Admins)
 - o Events and schedules
 - Registrations and team compositions
 - Scores and judge feedback
 - Payment and booking records

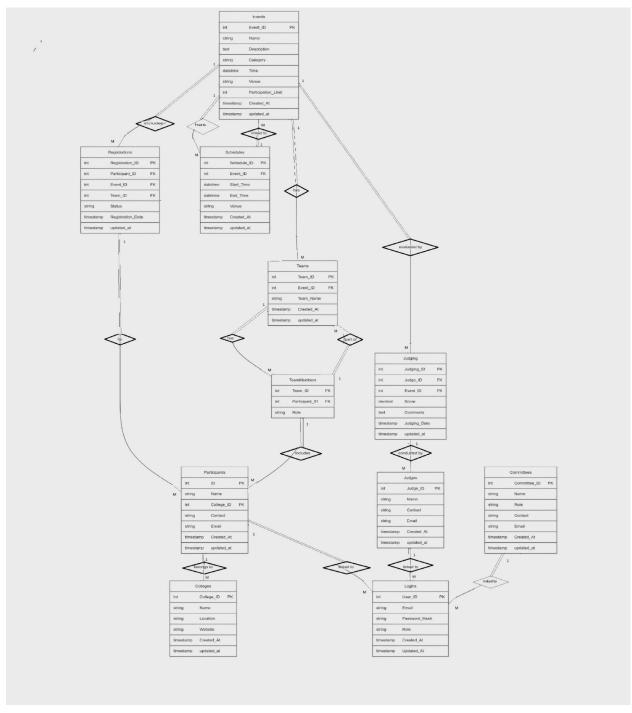


BLOCK DIAGRAM

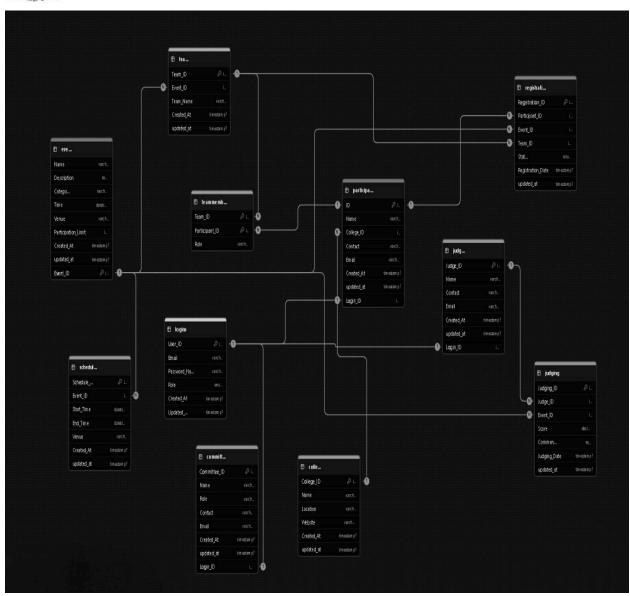
Data Design

Tables gathered from ERD:

- Account: email, password, role
- Participant: participant_id, name, email, phone_no, dob, age, gender, college_id
- College: college id, college name, address, city, contact email
- **Event**: event_id, event_name, category, venue, event_date, start_time, end_time, participation type
- Team: team id, event id, team name, college id
- Team Member: team id, participant id, role
- Registration: registration_id, event_id, participant_id/team_id, registration_date, status
- Judge: judge id, name, email, phone no, expertise
- **Judging**: judging id, judge id, event id, score, comments
- Committee: committee id, name, role, event id
- Schedule: schedule id, event id, date, start time, end time, venue
- Login: login id, email, password, role



ER DIAGRAM



SCHEMA DIAGRAM

Normalisation Report for Revels Management System

Normalization Check

The database design for the Fest Management System has been rigorously normalized to ensure data integrity, eliminate redundancy, and support efficient queries. The normalization process has been evaluated at multiple levels:

1. Colleges Table

Attributes:

- College_ID (Primary Key)
- Name
- Location
- Website
- Created At
- Updated_At

Functional Dependencies:

- College_ID → Name, Location, Website, Created_At, Updated_At
- Name → College ID (Assuming college names are unique)

2. Participants Table

Attributes:

- ID (Primary Key)
- Name
- College ID (Foreign Key)
- Contact
- Email
- Created At
- Updated At
- Login ID

Functional Dependencies:

- ID → Name, College_ID, Contact, Email, Created_At, Updated_At, Login_ID
- Email → ID, Name, College_ID, Contact, Created_At, Updated_At, Login_ID (Assuming emails are unique)
- Contact → ID, Name, College_ID, Email, Created_At, Updated_At, Login_ID (Assuming contacts are unique)

3. Judges Table

Attributes:

- Judge ID (Primary Key)
- Name
- Contact
- Email
- Created At
- Updated At
- Login_ID

Functional Dependencies:

- Judge ID → Name, Contact, Email, Created At, Updated At, Login ID
- Email → Judge ID, Name, Contact, Created At, Updated At, Login ID
- Contact → Judge_ID, Name, Email, Created_At, Updated_At, Login_ID (If contact is unique)

4. Events Table

Attributes:

- Event_ID (Primary Key)
- Name
- Description
- Category
- Time
- Venue
- Participation Limit
- Created At
- Updated At

Functional Dependencies:

- Event_ID → Name, Description, Category, Time, Venue, Participation_Limit, Created_At,
 Updated_At
- (Event ID, Time) \rightarrow Venue (An event at a particular time can have only one venue)
- Name → Event_ID (Assuming event names are unique)

5. Teams Table

Attributes:

- Team ID (Primary Key)
- Event ID (Foreign Key)
- Team Name

- Created At
- Updated_At

Functional Dependencies:

- Team ID → Event ID, Team Name, Created At, Updated At
- (Event ID, Team Name) → Team ID (Each team name is unique within an event)

6. TeamMembers Table

Attributes:

- Team_ID (Foreign Key)
- Participant ID (Foreign Key)
- Role

Functional Dependencies:

- (Team_ID, Participant_ID) → Role
- Team ID \rightarrow Event ID (Through foreign key relationship with Teams)

7. Registrations Table

Attributes:

- Registration ID (Primary Key)
- Participant ID (Foreign Key)
- Event_ID (Foreign Key)
- Team ID (Foreign Key)
- Status
- Registration Date
- Updated At

Functional Dependencies:

- Registration_ID → Participant_ID, Event_ID, Team_ID, Status, Registration_Date,
 Updated At
- (Participant_ID, Event_ID) → Registration_ID, Team_ID, Status, Registration_Date, Updated At (Each participant can register only once for an event)
- Team ID \rightarrow Event ID (Since a team belongs to an event)

8. Judging Table

Attributes:

- Judging ID (Primary Key)
- Judge ID (Foreign Key)
- Event ID (Foreign Key)
- Score
- Comments
- Judging Date

• Updated At

Functional Dependencies:

- Judging_ID → Judge_ID, Event_ID, Score, Comments, Judging_Date, Updated_At
- (Judge_ID, Event_ID) → Score, Comments, Judging_Date, Updated_At (Each judge gives one score per event)

9. Committees Table

Attributes:

- Committee_ID (Primary Key)
- Name
- Role
- Contact
- Email
- Created At
- Updated At
- Login_ID

Functional Dependencies:

- Committee ID → Name, Role, Contact, Email, Created At, Updated At, Login ID
- Email → Committee ID, Name, Role, Contact, Created At, Updated At, Login ID
- Contact → Committee_ID, Name, Role, Email, Created_At, Updated_At, Login_ID (If contacts are unique)

10. Schedules Table

Attributes:

- Schedule ID (Primary Key)
- Event ID (Foreign Key)
- Start Time
- End Time
- Venue
- Created At
- Updated At

Functional Dependencies:

- Schedule_ID → Event_ID, Start_Time, End_Time, Venue, Created_At, Updated_At
- (Event_ID, Start_Time, End_Time) → Venue (A specific event time slot can have only one venue)
- (Venue, Start_Time, End_Time) → Event_ID (Each venue at a given time can have only one event)

Normalization Steps

First Normal Form (1NF)

A table is in 1NF if:

- All attributes have atomic values.
- Each column contains values of a single type.
- Each row is uniquely identifiable (has a primary key).

All tables satisfy 1NF as they contain atomic attributes and have primary keys.

Second Normal Form (2NF)

A table is in 2NF if:

- It is already in 1NF.
- Every non-key attribute is fully functionally dependent on the whole primary key.

All tables satisfy 2NF as there are no partial dependencies.

Third Normal Form (3NF)

A table is in 3NF if:

- It is already in 2NF.
- There are no transitive dependencies.

All tables satisfy 3NF as there are no transitive dependencies.

Boyce-Codd Normal Form (BCNF)

A table is in BCNF if:

- It is already in 3NF.
- Every determinant is a superkey.

All tables satisfy BCNF as there are no non-trivial functional dependencies where a non-superkey determines another attribute.

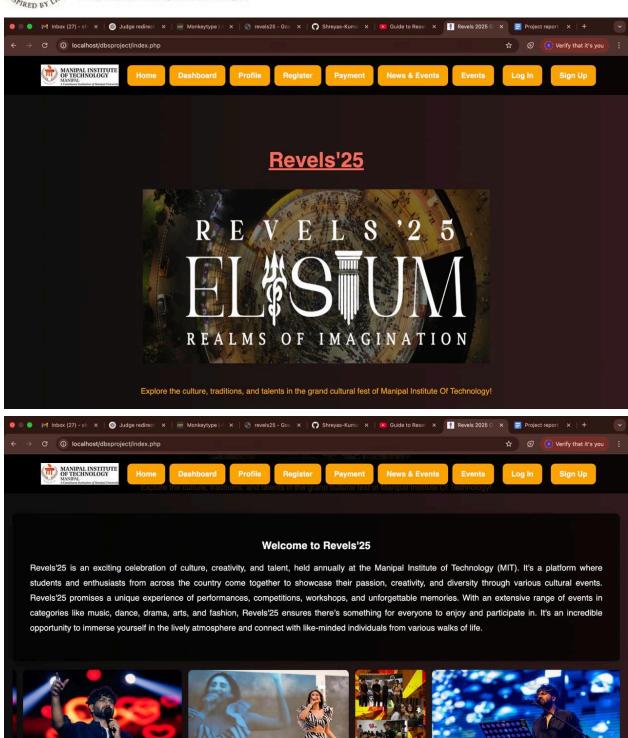
This structured schema ensures a well-normalized database with efficient data organization and minimal redundancy.

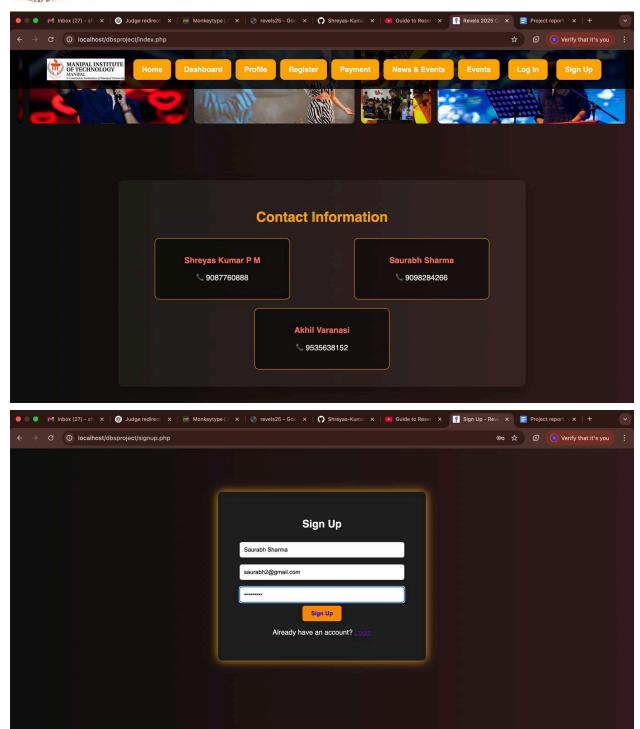
Results

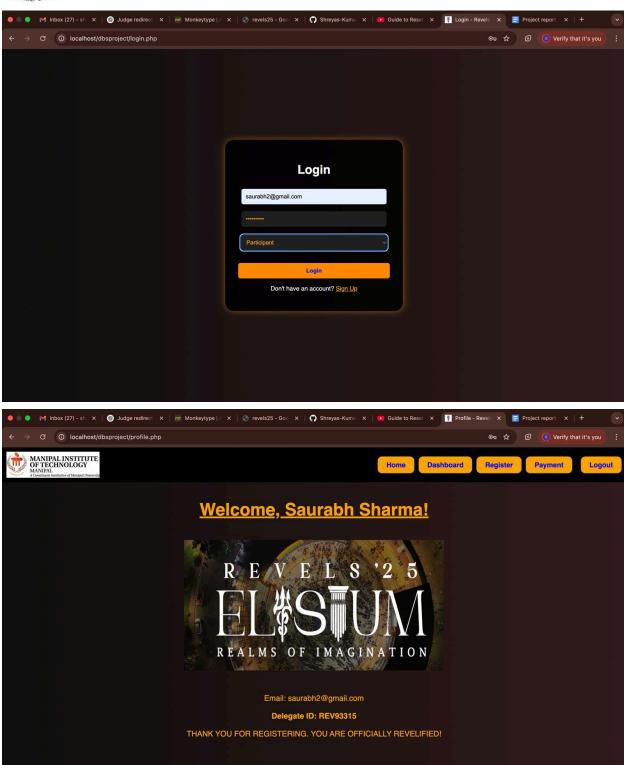
The **Fest Management System** was successfully developed and deployed to efficiently manage and automate various aspects of a college fest, including event registration, judge evaluation, payment handling, and overall participant coordination. The system provides a centralized platform for **Participants**, **Judges**, and **Admins**, streamlining the entire fest management process.

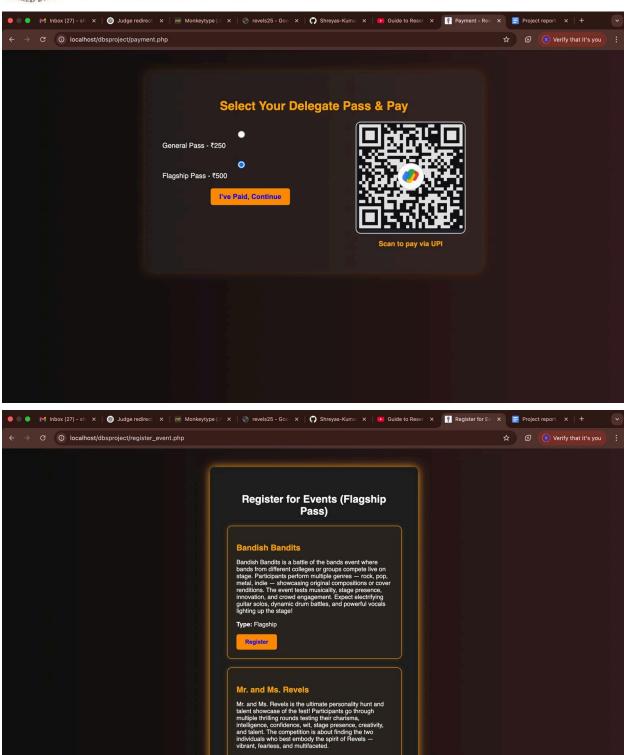
Key outcomes of the project include **faster and more organized registration workflows**, **automated payment verification**, and **real-time event tracking**. Participants benefit from a smooth registration experience, clear visibility of event schedules, and easy access to ticket downloads and confirmation receipts. Judges can easily access participant details, score submissions, and provide feedback directly through the platform.

The admin panel allows for effortless management of user roles, event creation, team registrations, and generation of detailed reports, significantly reducing manual overhead. The intuitive and responsive interface, built using **HTML**, **CSS**, **and JavaScript**, ensures that users require minimal training to navigate the system. Backend processing with **PHP** and data handling through **MySQL** enable secure and reliable operations, supporting the digital transformation of traditional fest management into a seamless and scalable digital experience.

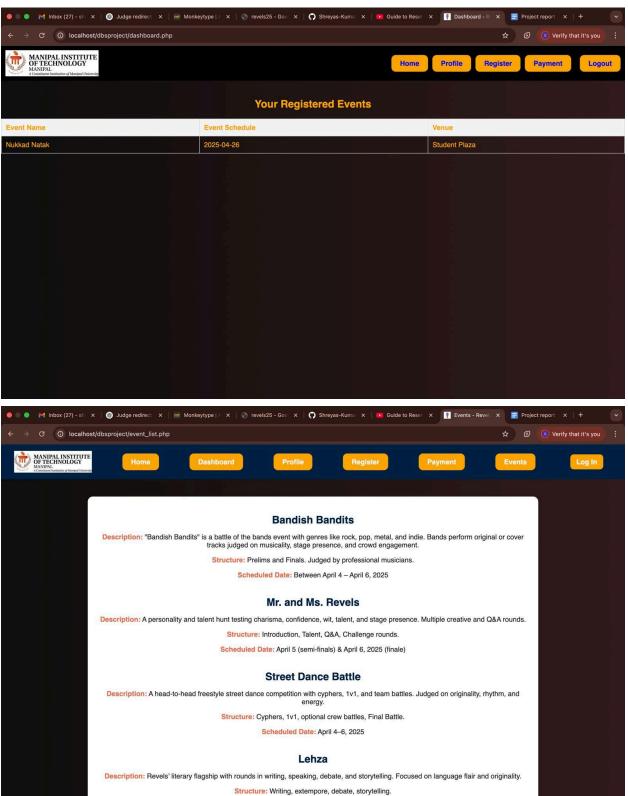


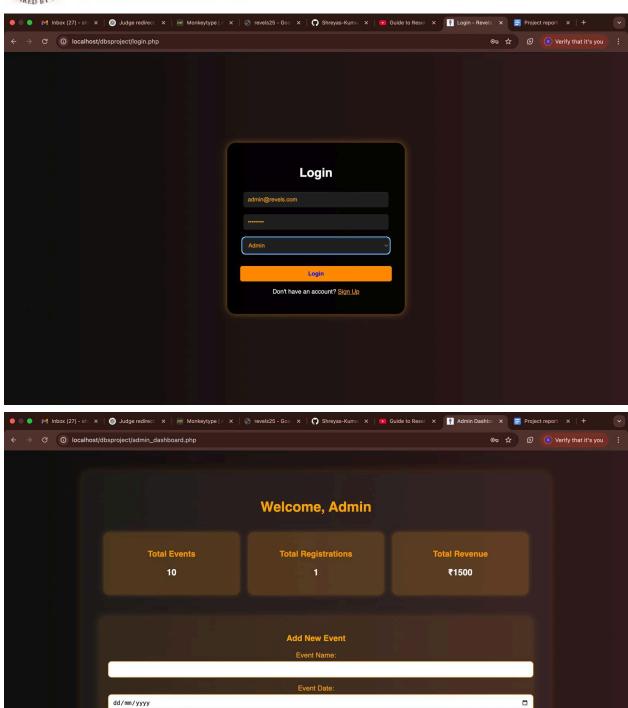




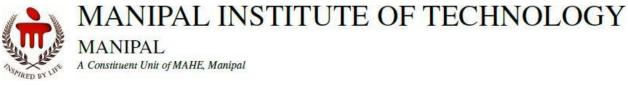


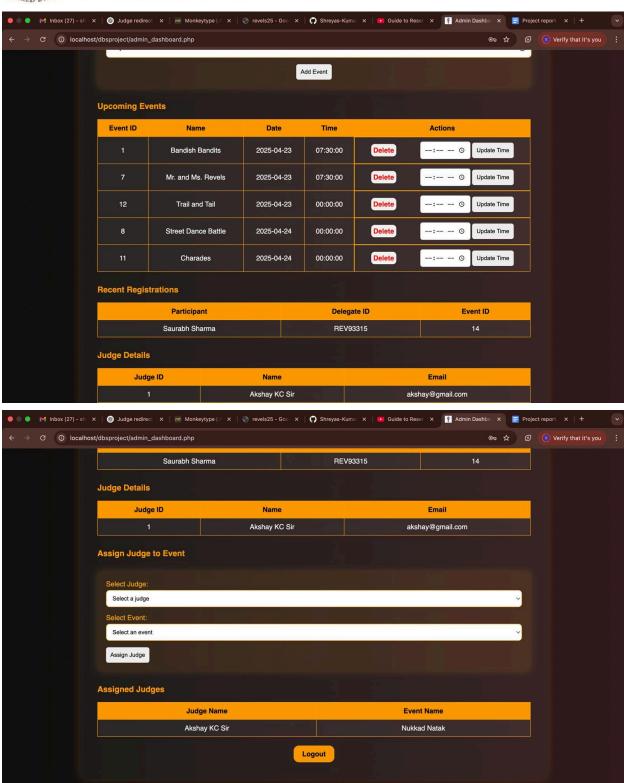
Register

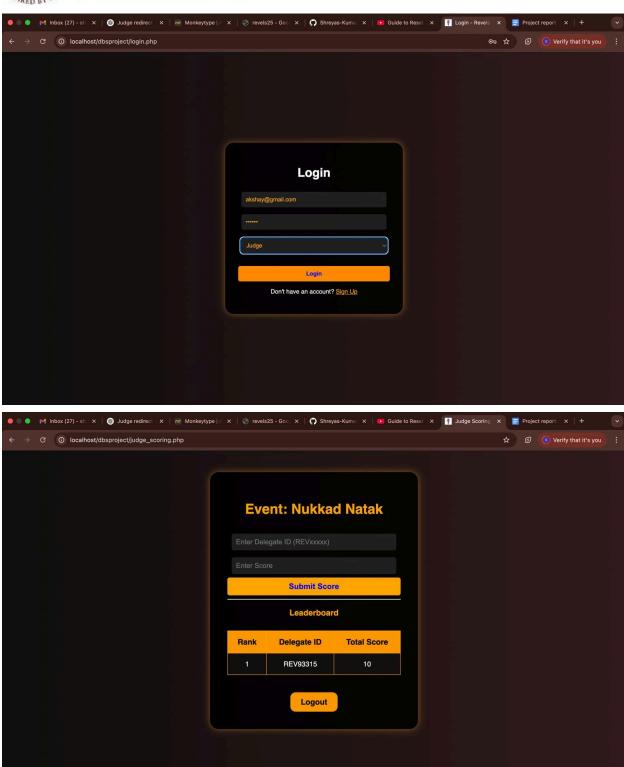




Add Event







Conclusion

The **Fest Management System** stands as a comprehensive and transformative solution for organizing and managing college fests, streamlining the coordination of events, participants, judges, and administrative tasks. By automating essential processes such as event registration, judge evaluation, payment handling, and user management, the system significantly enhances efficiency and reduces manual workload.

With its intuitive user interface and clear role-based access for **Participants**, **Judges**, and **Admins**, the system ensures seamless interaction and ease of use with minimal training requirements. The implementation of this system has led to faster registration, improved data accuracy, and centralized control over fest operations.

Looking forward, the Fest Management System has immense scope for future enhancements. Integration with mobile platforms can offer real-time notifications, event updates, and on-the-go access for users. Adding analytics capabilities can provide organizers with insights into participation trends and feedback for continuous improvement. Additionally, cloud-based deployment could support scalability and centralized access for managing multiple fests across institutions.

As educational institutions increasingly adopt digital tools for event management, the Fest Management System is well-equipped to evolve, adapt, and play a key role in shaping the future of campus events.

References

Elmasri, R., & Navathe, S. B. (2017). Fundamentals of Database Systems (7th ed.). Pearson Education.

- → For understanding database design and management.
- "PHP & MySQL: Server-side Web Development" by Jon Duckett
- \rightarrow A well-structured and visual guide for building dynamic web applications using PHP and MySQL.
- MySQL Documentation MySQL Language Reference
- → Reference for MySQL Plus syntax and functionality.