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Multi-Platform Event Management and Synchronization

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Abstract

The Event Management System is a web-based application designed to simplify and organize event handling within a university. It allows efficient management of departments, staff, students, and external participants. Role-based access is provided to Admins, Staff, Students, and Guests. Admins manage all data, while staff and students access role-specific dashboards. Notifications via email/SMS help users stay informed. The system improves transparency, streamlines communication, automates registrations, and enables effective tracking. Overall, it ensures higher participation and simplifies event administration.

Keywords: Event Management System, Multi-Platform Synchronization, Role-Based Access Control, Web- Based Application, Notification System, Event Registration, Educational Events, Dashboards

1. Introduction

Properly managed events in educational institutions enhance student engagement, promote collaboration, and streamline institutional operations. Activities such as symposiums, cultural events, and workshops require careful coordination. Manual event handling often results in delays, confusion, and communication gaps.

The Event Management System (EMS) automates these tasks by offering dedicated portals for Admins, Staff, Students, and External Participants. Admins oversee events, assign coordinators, and generate reports. Staff monitor participation, students register via dashboards, and external users join open events. The system includes reminders, attendance tracking, and role-based access, increasing efficiency. All data is stored securely and can be retrieved for audits or reviews. By replacing paper-based workflows, EMS creates a structured and collaborative environment.

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2. Proposed Work

- 1. Design an online platform for planning, registration, and communication.
- 2. Implement RBAC to ensure appropriate privileges per user type.
- 3. Send real-time notifications via email/SMS.
- 4. Automate attendance and participant tracking.
- 5. Provide distinct dashboards for each role.
- 6. Generate downloadable participant reports.

3. Methods

3.1 User Registration

Users (Admins, Staff, Students, Guests) register through individual interfaces with unique access roles. Each login is secured, and the admin dashboard maintains logs.

3.2 Event Creation and Management

Only Admins create events by entering title, description, date, department, and assigning coordinators. Event metadata is stored in normalized database tables.

3.3 Event Registration

Students and guests can register through their dashboards. Registrations are verified for availability. Each event links to a participant list for tracking.



3.4 Notification System

Notifications are sent during:

- Successful registration
- Event reminders (24 hours before)
- Schedule updates or cancellations

3.5 Admin Dashboard

Admins can:

- Add/Edit/Delete events
- View participants
- Assign staff
- Generate reports

3.6 Staff and Student Dashboards

Staff: Monitor assigned events, view student registrations.

Students: Register, view event history, and participation.

3.7 Participant Login (External Users)

Guests register for open events. They receive credentials and limited dashboard access, along with notifica- tions.

3.8 Attendance Tracking and Reporting

Attendance is marked during events. Reports include:

- Participant count
- Department-wise statistics
- Event popularity

3.9 Security and Session Control

Session tokens and timeouts secure access. Passwords are encrypted. Role-based control limits unauthorized access.

3.10 Preprocessing and Backup

Data backups are scheduled to preserve logs and registrations. System optimization ensures smooth operation.









Figure 6: Registration Page

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4. Conclusion

The Event Management System simplifies event operations for educational institutions by providing a uni- fied platform with role-specific interfaces. Admins manage content, staff coordinate participation, and stu- dents/guests engage with minimal effort. Real-time notifications, detailed reports, and secure data handling improve transparency and reduce manual workload.

The modular design allows scalability and adaptation. As events grow in number and complexity, EMS remains efficient, transparent, and user-friendly. Overall, EMS fosters organized planning, effective collabo- ration, and a streamlined event experience.

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