 **BANNARI AMMAN INSTITUTE OF TECHNOLOGY**

**An Autonomous Institution Affiliated to Anna University - Chennai, Accredited by NAAC with A+ Grade**

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**Project ID:** 10

**Project title:** Bulk Mail Blocking/Unblocking

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| **Component** | **Tech Stack** |
| Backend | Express JS |
| Frontend | React JS |
| Database | Mango DB |
| API | RESTful services |

**Technical Components**

**PROBLEM STATEMENT:**

prone, leading to inefficiencies and miscommunication. HODs struggle with duplicative entries and ensuring staff are aware of their duties, while staff members often miss updates due to the lack of real-time notifications. This project seeks to develop a web portal to automate task assignments, prevent errors, and provide real-time notifications, thereby enhancing operational efficiency and staff awareness.

**Introduction:**

In a college setting, efficient task management and clear communication of responsibilities are crucial for maintaining smooth operations and high productivity. Currently, the manual process of assigning tasks to staff members is not only time-consuming but also prone to errors. HODs must spend considerable time navigating various interfaces and systems to assign tasks such as academic classes, lab duties, and discipline committee responsibilities. This manual approach often results in duplicative entries, scheduling conflicts, and miscommunication, ultimately impacting the overall effectiveness of the staff.

To address these challenges, we propose the development of a real-time full-stack web portal designed specifically for task assignment and management. This portal will provide a centralized platform for HODs to efficiently assign tasks and for staff members to view their duties and receive real-time notifications. By automating the task assignment process and incorporating real-time communication features, the portal aims to streamline operations, reduce the potential for errors, and ensure that all staff members are promptly informed of their responsibilities. This solution will enhance operational efficiency, improve accuracy in task assignments, and foster better communication within the college.

**Purpose:**

The purpose of developing the real-time full-stack web portal for task assignment and management is to streamline and enhance the process of allocating and tracking tasks within the college. Specifically, the project aims to:

1. **Improve Efficiency**:
   * Automate the assignment of tasks such as academic classes, lab duties, and discipline committee responsibilities to reduce the time and effort required for manual task allocation by HODs.
2. **Reduce Errors**:
   * Implement validation checks to prevent duplicate entries and scheduling conflicts, thereby minimizing human errors associated with manual task assignment.
3. **Enhance Communication**:
   * Provide real-time notifications to staff members about their assigned tasks, ensuring they are promptly informed and aware of their responsibilities.
4. **Centralize Task Management**:
   * Create a centralized platform where HODs can manage task assignments and staff members can view their schedules, making it easier to track and update tasks.
5. **Ensure Accountability**:
   * Enable staff members to acknowledge receipt of their assigned tasks, ensuring that they are aware of their duties and can be held accountable for their responsibilities.
6. **Support Decision-Making**:
   * Provide HODs with tools to review and confirm task assignments before final submission, aiding in better decision-making and planning.
7. **Increase Transparency**:
   * Maintain a comprehensive log of task assignments and notifications in a centralized database, enhancing transparency and traceability of task management processes.

**System Overview:**

**Users:**

1.HOD

2.STAFF

1. **HOD Interface**:
   * **Task Assignment Interface**:
     + HODs can assign academic classes, lab duties, and daily discipline committee duties.
     + Tasks are scheduled to avoid conflicts and duplicate entries.
   * **Schedule Management**:
     + Specify the allotted time and venue for each task.
   * **Task Review and Confirmation**:
     + Review assigned tasks before final submission.
     + Confirm and save tasks to the database.
2. **Staff Interface**:
   * **Task Viewing Interface**:
     + Staff members can view their assigned academic classes, lab duties, and discipline committee duties.
     + Displays the allotted time and venue for each task.
   * **Notification System**:
     + Receive pop-up notifications for newly assigned tasks or updates to existing tasks.
     + Acknowledge receipt of notifications to confirm awareness of assigned duties.
3. **Database**:
   * **Task Data**:
     + Stores all task assignments, ensuring data integrity and avoiding duplicate entries.
   * **Staff Details**:
     + Maintains staff profiles and schedules.
   * **Notifications**:
     + Logs notification history and status acknowledgments.

Workflow:

1. **Login**:
   * HODs and staff members authenticate using their credentials.
   * Successful authentication directs users to their respective dashboards.
2. **Task Assignment (HOD)**:
   * HODs assign tasks through an intuitive interface, specifying the type, time, and venue of each task.
   * The system validates entries to prevent duplicates and scheduling conflicts.
   * Tasks are reviewed and confirmed before being saved to the database.
3. **Task Viewing (Staff)**:
   * Staff members log in to view their assigned tasks.
   * The interface displays detailed information, including task type, time, and venue.
   * Pop-up notifications alert staff to new or updated assignments.
4. **Notification System**:
   * Staff receive real-time notifications for task assignments and updates.
   * Notifications ensure that staff members are promptly informed of their responsibilities and any changes.

By automating task assignments and integrating a real-time notification system, this web portal aims to enhance efficiency, reduce errors, and ensure clear communication within the college. The centralized database supports robust task management and facilitates seamless interactions between HODs and staff members.

**Flow Chart:**





