BANNARI AMMAN INSTITUTE OF TECHNOLOGY
Autonomous Institution Affiliated to Anna University - Chennai, Accredited by NAAC with A+ Grade
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Stay Ahead

SOFTWARE REQUIREMENT SPECIFICATION(SRS)

Student Name: SUDHARSAN S P
Seat No: -
Project ID: 36
Project title: Student-Faculty Ratio

Technical Components:

Component	Tech Stack
Frontend	HTML CSS JS
Backend	Python Django (Python Web)JS
Database	MySQL
API	REST Ful API

1.INTRODUCTION:

1.1. Purpose:

The purpose of this project is to develop a comprehensive web application that allows a college administration to efficiently manage the student-faculty ratio across different departments. This system aims to ensure that the distribution of faculty members is optimal and aligns with accreditation requirements. During the accreditation period, the application will facilitate the reassignment of faculty members to different departments based on their eligibility and the student count in each department. This reassignment process is crucial for maintaining academic standards and ensuring that each department is adequately staffed relative to its student population.

1.2. Scope of Project:

The scope of this project involves developing a web application for managing and optimizing the student-faculty ratio across college departments. It includes creating a database to store department and faculty data, a backend to handle business logic and faculty reassignment based on eligibility and student count, and a frontend interface for administrators to manage this process. The project also covers security, testing, and deployment to ensure the system is reliable and compliant with accreditation requirements.

2. SYSTEM OVERVIEW:

2.1. Users:

- **Admin**: The system administrator responsible for managing department data, faculty assignments, user accounts, access permissions, and overall system configurations.
- **Faculty**: Faculty members can view their department assignment, update their eligibility status, and be reassigned to different departments based on student count and accreditation requirements.

2.2. Features:

- **Login and Registration**: Admins and faculty members can securely log in to the system using their user id and password. Admins have full access to manage departments and faculty, while faculty members can view their assignments and eligibility status.
- **Faculty Management:** Admins can view and edit faculty details, including their department, eligibility status, and qualifications. Faculty can be automatically reassigned to different departments based on eligibility criteria and the student-faculty ratio requirements during accreditation periods.
- **Student-Faculty** Ratio Monitoring: The system continuously monitors and displays the student-faculty ratio for each department. Automated alerts notify the admin when a department's student-faculty ratio falls outside acceptable ranges, prompting necessary actions.
- **Email Notifications**: Automated email notifications are sent to faculty and admins to communicate updates, such as faculty reassignment, accreditation period reminders, changes in department student counts, and other relevant information.

3. SYSTEM REQUIREMENTS SPECIFICATION:

3.1. Functional Requirements:

- **User Management:** Provide secure login functionality for all user types, including admins and faculty. Implement user authentication and access control mechanisms to ensure that only authorized users can access or modify sensitive data, such as department assignments and faculty eligibility.

- **Faculty Assignment:** Admins can manage faculty assignments by reassigning faculty members to different departments based on eligibility and student count. The system checks and enforces the student-faculty ratio requirements during the accreditation period, ensuring compliance and optimal faculty distribution

3.2. Non-Functional Requirements:

- **Security**: All department, faculty, and user data must be encrypted during transmission and storage using industry-standard encryption algorithms and protocols to protect sensitive information from unauthorized access or data breaches.

- **Access Control:** Access to sensitive functionalities, such as faculty reassignment and department management, should be restricted to authorized users through secure authentication mechanisms, including multi-factor authentication (MFA) and role-based access control (RBAC).
- **Usability**: The interface should be intuitive and user-friendly, allowing admins and faculty members to easily navigate the system and perform tasks with minimal training.

  Clear and concise error messages should be provided to guide users in case of input errors, system failures, or security-related issues, facilitating error resolution and enhancing usability.
- **Reliability**: The system should be highly available, with a target uptime of 99.9% to ensure continuous accessibility and reliabilityfor users.

  It should have a robust backup and recovery mechanism in place to prevent data loss and ensure data integrity in the event of system failures, crashes, or unforeseen incidents.

- **Scalability**: The system architecture should be designed to accommodate an increasing number of users, data volume, and concurrent transactions over time, ensuring scalability andperformance optimization as the user base grows. It should be scalable to support additional features, functionalities, and integrations as per future requirements, without compromising system performance or reliability.

BACKEND:

1. **USER TABLE:**

Name	String
Email	String
Password	Hash Code

2. **FACULTY MANAGEMENT TABLE:**

Name	String
Qualification	String
Parent Department	String
Eligible Department	String

3. **STUDENT RATIO TABLE:**

Name	String
Faculty	Foreign Key (Name)
Student	Foreign Key (Student)
Student Department	String

4. **STUDENT TABLE:**

Name	String
Dept	String
Register Number	String

WORKFLOW OF PRODUCT DEVELOPMENT: