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Description automatically generated**

***University Management System***

***SE-3003-Web Engineering - Semester Project Phase 1***

National University of Computer and Emerging Sciences (FAST-NUCES) Islamabad

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Department:

Software Engineering

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**University Management System - Project Proposal**

**1. Project Introduction**

The University Management System (UMS) is a comprehensive MERN stack application designed to digitize and streamline university operations. This system aims to enhance administrative efficiency, improve communication between stakeholders, and provide a seamless experience for students, faculty, and administrators.

1.1 Project Objectives

* Automate administrative processes
* Enhance communication between stakeholders
* Improve resource management
* Provide real-time access to academic information
* Ensure data security and privacy
* Generate comprehensive reports and analytics

1.2 Scope

The system will serve three main user groups:

* University Administrators
* Faculty Members
* Students

**2. Detailed Module Structure and Features**

2.1 Admin Panel (Member 1: Safdar Jan)

Authentication Module

1. Login/Logout

* JWT-based authentication
* Role-based access control

2. Password Management

* Password recovery
* Reset functionality

Dashboard Module

1. Analytics Overview

* Student enrollment statistics
* Department performance metrics
* Financial overview
* Active users tracking

2. Quick Actions

* User management shortcuts
* System announcements
* Alert management

User Management Module

1. Department Management

* Create/Edit departments
* Assign department heads
* Resource allocation
* Department statistics

2. Faculty Management

* Add/Update faculty profiles
* Teaching load assignment
* Performance tracking
* Leave management

3. Student Management

* Enrollment processing
* Academic record management
* Fee status tracking

2.2 Faculty Panel (Member 2: Rayyan Ahmed)

Course Management Module

1. Course Administration

* + Course creation/modification
  + Syllabus management
  + Schedule management

2. Content Management

* + Study material upload
  + Assignment creation
  + Quiz management

Assessment Module

1. Attendance Management

* + Daily attendance tracking
  + Attendance reports

2. Grading System

* + Assignment grading
  + Quiz assessment
  + Final grades calculation
  + Performance analytics

3. Progress Tracking

* + Student performance monitoring
  + Progress reports generation
  + Parent communication

2.3 Student Panel (Member 3: Muhammad Athisham)

**Academic Module**

1. Course Registration

* + Course enrollment
  + Prerequisites checking
  + Add/Drop courses

2. Learning Management

* + Access course materials
  + Submit assignments
  + Take online quizzes
  + View grades

**Financial Module**

1. Fee Management

* + View fee structure
  + Online payment
  + Payment history
  + Generate receipts

2. Financial Aid

* + Scholarship applications
  + Document submission

**3. Work Division and Timeline (3 Weeks)**

**Week 1: Foundation Phase**

Member 1 (Admin Panel)

* + Project setup and configuration
  + Authentication system
  + Basic dashboard implementation

Member 2 (Faculty Panel)

* + Faculty authentication
  + Course management structure
  + Basic attendance system
  + Assignment module setup

Member 3 (Student Panel)

* + Student authentication
  + Course registration system
  + Basic profile management
  + Fee viewing system

**Week 2: Core Development**

Member 1

* + Complete user management
  + Reports generation
  + Analytics implementation
  + System settings

Member 2

* + Grading system
  + Content management
  + Progress tracking

Member 3

* + Payment integration
  + Document management
  + Course interaction
  + Performance tracking

**Week 3: Integration and Completion**

Member 1

* + System integration
  + Security implementation
  + Admin documentation
  + Testing and debugging

Member 2

* + Faculty features completion
  + Grading analytics
  + Documentation
  + Quality assurance

Member 3

* + Student features completion
  + Mobile responsiveness
  + User documentation
  + Final testing

**4. Technical Specifications**

4.1 Technology Stack

* + Frontend: React.js
  + Backend: Node.js, Express.js
  + Database: MongoDB
  + Authentication: JWT
  + State Management: Redux
  + API Documentation: Swagger

4.2 Third-Party Integrations

* + Payment Gateway (Stripe)
  + Email Service (SendGrid)
  + SMS Gateway (Twilio)
  + Analytics (Chart.js)

**5. Deliverables**

1. Source Code

* + Frontend repositories
  + Backend repositories
  + Documentation

2. Documentation

* + Technical documentation
  + User manuals
  + Testing reports

3. Deployment

* + Deployed application
  + Deployment guide
  + Backup procedures

**6. Repository Link:**

[**Rayyan9477/University-Management-System**](https://github.com/Rayyan9477/University-Management-System)