Accademy Management System

A proposal submitted to

Comsats University (Vehari)
in partial fulfillment of the requirement for the course

Topics in Computer Science II

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Abstract

The Smart Academy Manager is a web-based system designed to streamline academic administration in educational institutions. It supports modules for student and teacher management, attendance, results, online exams, fee tracking, timetable scheduling, and automatic certificate generation. This project aims to eliminate manual record-keeping, reduce errors, and offer a centralized and secure platform for managing academic operations efficiently.

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1 Project Description

The **Smart Academy Manager** is a full-stack web application developed using modern technologies like React.js, Node.js, and MongoDB. The system provides role-based access for admins, teachers, students, and parents. Each user has a dedicated dashboard to perform relevant actions, such as registering students, marking attendance, uploading grades, viewing reports, paying fees, and more.

2 Objectives

- Provide a centralized platform to manage academy operations.
- Automate attendance, result generation, and timetable scheduling.
- Support fee tracking and automatic certificate generation.
- Enable secure, role-based access and data management.
- Offer a responsive and intuitive interface for all users.

3 Target Users

- **Admins**: To manage users, settings, and reports.
- **Teachers**: To manage classes, attendance, results.
- **Students**: To view attendance, results, and download certificates.
- **Parents**: To track academic performance and fee status.

4 Technologies Used

- **Frontend**: React.js, Tailwind CSS
- **Backend**: Node.js, Express.js
- **Database**: MongoDB
- **Authentication**: JWT, bcrypt
- **PDF and File Handling**: pdfkit, multer

5 Project Modules

5.1 Student Module

- Register/Login
- View attendance
- View marks of tests
- View class timetable

5.2 Teacher Module

- Register/Login
- Mark attendance
- Upload student grades
- Manage timetable entries

5.3 Admin Module

- Dashboard with analytics
- Manage student and teacher records
- Schedule classes and timetables
- Handle fee tracking and generate invoices
- Generate performance certificates

6 Expected Outcomes

- Complete academy management platform with full CRUD operations.
- Timely attendance, grade reporting, and fee processing.
- Automated PDF certificate generation.
- Intuitive dashboards for each user type.
- Scalable and secure architecture.