

Project: ERP System Development for Academic, Marketing & Finance, and Administration & Human Resource Modules

Objective:

To design, document, and implement a basic ERP system that integrates three core modules: Academic, Marketing & Finance, and Administration & Human Resources. The focus will be on collaborative work (4 Software Engineering Students), a comprehensive Software Requirements Specification (SRS) document, and implementation of key functionalities.

Project Scope:

General Features (Common to All Modules):

1. User Authentication System (10 Marks):

- Role-based access control (e.g., Admin, Student, Staff).
- Secure login with hashed passwords.
- Session management and logout functionality.

2. Database Management (10 Marks):

- Use a relational database (e.g., MySQL, PostgreSQL).
- Ensure data normalization and integrity.
- Include backup and recovery features.

3. API Integration (10 Marks):

- Design RESTful APIs to enable seamless communication between modules.
- Document APIs for potential third-party integrations.

Module-Specific Requirements:

1. Academic Module (15 Marks):

- **Functionalities:**
 - Course and program management (add, modify, delete courses).
 - Student performance tracking (grades, attendance).
 - Examination scheduling and results publication.
- **Deliverables:**
 - CRUD operations for academic records.
 - Dynamic dashboards for students and instructors.
 - Generate reports (e.g., grade transcripts, attendance summaries).

2. Marketing & Finance Module (15 Marks):

- **Functionalities:**

- Tuition fee management (invoice generation, payment tracking).
- Expense tracking and financial reporting.
- Marketing campaign tracking (leads, conversions, ROI analysis).

- **Deliverables:**

- Fee payment portal with receipts.
- Analytics dashboard for campaign and financial metrics.
- Monthly financial summary reports.

3. Administration & Human Resource Module (15 Marks):

- **Functionalities:**

- Employee management (recruitment, payroll, attendance).
- Leave and performance tracking for staff.
- Asset management (e.g., office inventory).

- **Deliverables:**

- Employee and payroll records with search functionality.
- HR dashboard with leave status and performance analytics.
- Notifications for critical tasks (e.g., leave approval)