

Requirements Definition

Objectives:

1. Gather detailed functional requirements.
2. Document and validate requirements with stakeholders.
3. Ensure requirements are clear, complete, and feasible.

Detailed Functional Requirements

User or Student Functional Requirements:

1. User Registration and Authentication:

- **FR1:** The system shall allow new students to register by providing personal details (name, email, phone number, address) and creating a password.
- **FR2:** The system shall allow students to log in using their email and password.
- **FR3:** The system shall provide a password recovery option via email.

2. Profile Management:

- **FR4:** The system shall allow students to view their profile information.
- **FR5:** The system shall allow students to edit their personal information (excluding email).
- **FR6:** The system shall allow students to upload documents (e.g., ID proofs, certificates) in formats such as PDF, JPEG, PNG.
- **FR7:** The system shall display a list of uploaded documents with their statuses (approved, pending, rejected).

3. Course Enrollment:

- **FR8:** The system shall display a list of available courses, including course name, description, instructor, and schedule.
- **FR9:** The system shall allow students to view detailed information about each course.
- **FR10:** The system shall allow students to enroll in courses.
- **FR11:** The system shall display the enrollment status of each course the student has enrolled in.

4. Report Submission:

- **FR12:** The system shall allow students to upload assignments and reports for their enrolled courses.
- **FR13:** The system shall allow students to view the status of their submissions (submitted, graded, feedback provided).
- **FR14:** The system shall allow students to download feedback and grades for their submissions.

5. Notifications:

- **FR15:** The system shall send notifications to students for important updates, deadlines, and announcements.
- **FR16:** The system shall display a list of notifications to students, sorted by date.

Admin Functional Requirements:

1. Student Management (Admin):

- **FR17:** The system shall allow admins to view all student profiles.
- **FR18:** The system shall allow admins to approve or reject student registrations and uploaded documents.
- **FR19:** The system shall allow admins to update student profile statuses (active, inactive).

2. Course Management (Admin):

- **FR20:** The system shall allow admins to create new courses with details such as name, description, schedule, and instructor.
- **FR21:** The system shall allow admins to edit course details.
- **FR22:** The system shall allow admins to assign instructors to courses.
- **FR23:** The system shall display a list of all courses with their details and enrollment numbers.

3. Report Management (Admin):

- **FR24:** The system shall allow admins to view and download student submissions.
- **FR25:** The system shall allow admins to grade submissions and provide feedback.
- **FR26:** The system shall allow admins to update the status of submissions (submitted, graded, feedback provided).

4. Notifications (Admin):

- **FR27:** The system shall allow admins to create and send announcements to students.
- **FR28:** The system shall display a list of all notifications sent, with their details.

5. Analytics and Reporting (Admin):

- **FR29:** The system shall generate reports on student performance, including grades and submission statistics.
- **FR30:** The system shall provide statistical data on course enrollments, including trends and totals.
- **FR31:** The system shall allow admins to view data visualizations and export reports in formats such as PDF and Excel.

Detailed Non-Functional Requirements

1. Performance:

- **NFR1:** The system shall handle up to 1000 concurrent users without performance degradation.
- **NFR2:** The system shall respond to user actions within 2 seconds under normal load.

2. Security:

- **NFR3:** The system shall use JWT for secure authentication.
- **NFR4:** The system shall implement role-based access control to restrict access to specific features.

3. Usability:

- **NFR5:** The system shall have an intuitive and user-friendly interface.
- **NFR6:** The system shall be accessible on various devices, including desktops, tablets, and smartphones.

4. Scalability:

- **NFR7:** The system shall be designed to accommodate future growth in user base and data volume.

5. Maintainability:

- **NFR8:** The system shall be modular to facilitate easy maintenance and updates.
- **NFR9:** The system shall include comprehensive documentation for developers and users.

6. Reliability:

- **NFR10:** The system shall have an uptime of 99.9%.