

Chapter 3: System Analysis

3.1 System Overview and Application Description

3.1.1 Application Overview

Purpose and Objectives

GradTrack is a smart, web-based system designed to enhance the process of managing graduation projects in academic institutions. It aims to:

- Facilitate seamless communication and collaboration between students and supervisors.
- Provide a centralized, structured platform for submitting, reviewing, and storing project deliverables.
- Monitor and track project progress, deadlines, and feedback in a transparent and organized manner.

The system solves common issues such as lack of timely feedback, unstructured supervision, and fragmented communication.

Target Users

GradTrack primarily serves:

- Students - to manage project phases, upload files, receive evaluations, and follow up on feedback.
- Supervisors - to monitor students' progress, evaluate submissions, and schedule meetings.

Although developed for AI-Aqsa University, the system is designed to be scalable for implementation in other institutions.

Platform and Technology Stack

- Frontend: HTML, CSS, JavaScript
- Backend: Laravel (PHP Framework)
- Database: MySQL
- Authentication: Laravel session-based login system
- Hosting & Deployment:
 - Frontend hosted via Netlify
 - Source code managed via GitHub for version control and team collaboration

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- Design: UI/UX based on modern, user-centered design principles

3.1.2 Application Features and Functionalities

Core Features

- Secure Authentication and Role-based Access

Login system tailored for students and supervisors with restricted access rights.

- Interactive Dashboards

Displays project status, deadlines, submission stages, and key alerts through visual components.

- Automated Notifications

Real-time alerts for submission updates, meeting schedules, and supervisor feedback.

- Document and Submission Management

Centralized area for uploading and reviewing files across project phases, with support for comments and feedback.

Additional Features

- Comment Threading System

Enables supervisors and students to discuss each task or submission in context.

- Task Tracking Module

Allows supervisors to assign and track specific tasks within each project phase.

- Meeting Scheduler

Supervisors can schedule meetings and share links or in-person details with automatic reminders.

3.1.3 Non-Functional Requirements

Performance Requirements

- System responds within 2 seconds for key operations.
- Supports concurrent usage by multiple users.
- Ensures 99% uptime during academic periods.

Security Requirements

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- Secure password storage and session handling.
- HTTPS for encrypted communication.
- Access control to protect sensitive student and project data.

Usability and Accessibility

- Designed to be intuitive for both tech-savvy and non-technical users.
- Responsive layout compatible with desktops, tablets, and smartphones.
- Complies with accessibility standards (e.g., contrast, keyboard navigation, readable fonts).