Software Design Document (SDD)

College Complaint Management System

1. Introduction

This Software Design Document (SDD) is prepared based on the given case study of the College Complaint Management System. The document follows the same structure and headings as provided in the sample design document. The purpose of this document is to describe the system architecture, detailed design, database structure, and design constraints of the College Complaint Management System.

2. System Architecture

The College Complaint Management System follows a client–server architecture. The architecture is divided into multiple layers to ensure modularity, scalability, and ease of maintenance.

The main components of the architecture are:
• Presentation Layer – Provides user interfaces for students, administrators, and department staff.
• Application Layer – Contains business logic such as complaint submission, assignment, status tracking, and notification handling.
• Data Layer – Responsible for storing and retrieving complaint data, user details, and status history from the database.

This layered architecture ensures secure communication and smooth interaction between different system components.

3. Detailed Design

The detailed design describes the internal modules of the system and their interactions.

Major modules of the College Complaint Management System include:

• User Management Module – Handles user registration, login, authentication, and role-based authorization for students, administrators, and department staff.

• Complaint Management Module – Allows students to submit complaints, select categories, and generate unique complaint IDs.

• Workflow Management Module – Manages complaint assignment to departments and controls status changes such as Pending, In Progress, and Resolved.

• Notification Module – Sends system alerts or email notifications to users whenever the

complaint status changes.

• Reporting Module – Generates reports for administrators to monitor complaint trends and resolution performance.

The interaction between these modules ensures an end-to-end complaint handling process.

4. Database Design

The database design of the College Complaint Management System is structured to store and manage large volumes of complaint-related data efficiently.

Key entities in the database include:
• Student
• Administrator
• Department Staff
• Complaint
• Complaint Status History
• Feedback

Each complaint record is linked with the corresponding student and department. Status history maintains a complete record of complaint progress. The database design supports data consistency, security, and scalability.

5. Design Constraints

The design of the College Complaint Management System is subject to the following constraints:

• Hardware Constraints – Users require devices such as desktops or laptops with internet access.
• Software Constraints – The system depends on web browsers, backend server technologies, and database systems.
• Security Constraints – Secure authentication, authorization, and encrypted data storage must be enforced.
• Operational Constraints – System performance depends on server availability and regular updates by departments.

These constraints are considered during system design to ensure reliable operation.

6. Conclusion

This Software Design Document provides a detailed design overview of the College Complaint Management System based on the given case study. The proposed architecture, module design, and database structure ensure efficient complaint handling, transparency, and scalability. The system design aligns with the requirements defined in the SRS and supports future enhancements.