

Design and Computing Studio 2 Final Report

Assignment Requirements:

The final submission must include two parts: System Documentation and Code Files

1. Submit the system documentation in PDF format, named as "Name_StudentID_FinalReport.pdf", along with the code files. Specific requirements are detailed below (Section V: Submission Requirements).
2. Ensure the documentation is clear and readable.
3. Upload the system documentation and code files within the specified deadline.

Strict adherence to the above requirements is mandatory; otherwise, points will be deducted.

I. Project Objective

Develop an information management system based on Python and pymysql, implementing data CRUD operations, statistical analysis, and persistent storage. Choose one of the following system themes:

- Library Information Management System
- Student Information Management System
- Inventory Management System
- Hospital Appointment Management System
- Employee Attendance Management System

II. Technical Requirements:

1. Frontend Interface (choose one of the following):

- 1. Command-line interface: Must include menu navigation and tabular data display.
- 2. Web interface (bonus): Supports web-based operations.
- 3. Desktop GUI (bonus): Similar to a locally installed desktop application, supporting complex interactions.
- 4. Mobile interface (bonus): Similar to a mobile app.

2. Backend Logic:

- 1. Implemented using Python and pymysql.
- 2. Must fulfill all basic functionalities (see Section III: Core Functional Requirements).

3. Database Design:

- 1. Must include at least three normalized tables.

III. Core Functional Requirements:

1. Basic Features (mandatory):

- User authentication.
- Data entry with integrity validation.
- Multi-condition combined queries.
- Data modification and deletion (with confirmation mechanism).

2. Advanced Features:

- User role-based access control.
- Full-text search functionality (LIKE fuzzy search).
- Data visualization (e.g., bar charts/pie charts using matplotlib).

3. Evaluation Criteria:

Category	Evaluation Points	Weight
Code Quality	1. Completeness of exception handling	10%
	2. Security measures	10%
Functional Requirements	1. Functional completeness	30%
	2. Accuracy	20%
Architecture Design	1. Database design normalization (at least 1NF)	10%
Documentation Quality	1. Completeness of documentation	10%
	2. Documentation standards	10%

IV. Final Grading Rules:

1. Basic Functionality: Maximum 60 points. Each basic feature is worth up to 15 points, evaluated based on completeness, accuracy, and code quality.
2. Advanced Functionality: Maximum 20 points, evaluated based on completeness, accuracy, and code quality. a) User role-based access control: Maximum 8 points. b) Full-text search functionality: Maximum 7 points. c) Data visualization: Maximum 5 points.
3. Documentation and Design: Maximum 20 points, based on the completeness and standards of the system design documentation.
4. Interface Implementation Bonus: Beyond the basic command-line interface, implementing a web interface, desktop GUI, or mobile interface can earn additional points. Evaluation will consider interface aesthetics, interaction smoothness, responsiveness, user experience, and innovation. The maximum bonus for each interface type is 10 points. Multiple interface implementations cannot stack bonus points.

V. Submission Requirements:

1. Submission Content:

- 1. Source code.
- 2. System documentation (PDF format).

2. Documentation Structure:

- 1. System Overview.
- 2. Environment Setup (Python version, dependency list).
- 3. Database Design (ER diagram and table structure explanation).
- 4. User Manual.