Functional and Non-Functional Requirements Document

System Requirements Specification

1. Functional Requirements

1.1 Authentication

- The system shall allow users to log in using a username and password.
- The system shall support two user roles:
  - Admin
  - Instructor

1.2 Student Management

- The system shall allow adding new student records.
- The system shall allow editing existing student records.
- The system shall allow viewing student records.
- Each student shall be assigned a unique ID to ensure distinct identification.

1.3 Course Management

- The system shall allow creation and management of courses.
- Each course shall be assigned to an instructor to manage the course content and related activities.

1.4 Enrollment Management

- The system shall allow enrolling students into courses.
- The system shall prevent duplicate enrollments of the same student in a particular course.

1.5 Attendance Tracking

- The system shall allow the recording of attendance for students in courses.
- The system shall support multiple attendance statuses, including:
  - Present
  - Absent
  - Late
  - Excused

1.6 Reporting

- The system shall generate attendance reports grouped by course.

- The system shall generate attendance reports grouped by individual student.
- The system shall calculate attendance rates to provide insights into student participation.

2. Non-Functional Requirements

2.1 Usability

- The system shall provide a simple command-line interface to facilitate user interaction.
- The system shall provide clear navigation between features to enhance user experience and reduce complexity.

2.2 Performance

- The system shall store all data in a local SQLite database to ensure efficient and reliable data management.
- The system shall operate without requiring an internet connection to enable offline functionality.

2.3 Security

- The system shall securely hash all user passwords to protect sensitive user information.
- The system shall restrict access to features and data based on user roles to enforce security policies.

2.4 Maintainability

- The system shall follow modular design principles to promote ease of maintenance and scalability.
- The system shall be organized into logical components to improve code readability and facilitate future enhancements.