

Attendance System Functionalities

1. User Management

- Admin Functions:
 - Add, update, and remove students and professors.
 - Retrieve student and professor IDs for management purposes.
- Registration and Authentication:
 - Secure user registration and login processes for students and faculty.
 - Password management and authentication checks.

2. Course Management

- Course Setup and Handling:
 - Admins can create, add, modify, and delete course/section/lecture offerings.
 - Professors can select courses to teach and manage course details.
- Enrollment Management:
 - Admins enroll/unenroll one or more students on courses.

3. Client and server

- Faculty side:
 - Professors can schedule and manage lectures for their courses.
 - Professors can record attendance for a lecture manually or automatically.
 - Professors can update students' attendance for a particular lecture.
 - Professors can export students' attendance for a particular section.
 - Login/logout.
- Student side:
 - Students can update their email preferences for courses.
 - Students can get their attendance report for a section.
 - Students can select a lecture to submit their attendance code.
 - Login/logout.
- Attendance Tracking:
 - Automated recording of attendance through dynamic code generation for student self-check-ins.
- Automated Alerts:
 - The system sends email notifications to students regarding attendance updates.

4. Network Communication

- Utilizes client-server architecture for data exchange.

- Secure transmission of data using serialization and encrypted connections.
5. Security and Data Integrity
- Implementation of robust error handling and data validation mechanisms.
 - Ensures secure and consistent data handling through the use of DAOs and server-side validations.
6. Graphical User Interface (GUI)
- User-Friendly Interface:
 - Distinct interfaces for students, professors, and admins.
 - Interactive menus for managing courses, attendance, and user accounts.
 - Responsive Design:
 - GUI adapts to various user roles and provides relevant functionality and data visualization.
7. Extra Credit: Automatic Attendance System
- Dynamic Attendance Verification:
 - Geolocation checks to ensure student presence on campus.
 - IP and ISP verification to prevent fraudulent attendance.