

PROJECT X: Automated Attendance Tracking System Requirements Document

Team JAK of all Trades

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System Overview

The Automated Attendance Tracking System is designed to enhance the efficiency, accuracy, and security of student attendance monitoring. By incorporating barcode scanning technology, cloud-based storage, and secure access protocols, this system will provide a reliable solution for educational institutions seeking improved attendance management processes.

1. System Users

R1.0 The system shall support three primary roles:

- **R1.1** Administrator – Responsible for user management and report generation.
- **R1.2** Instructor – Manages class attendance, records student attendance through barcode scanning, and oversees assigned courses.
- **R1.3** Student – Accesses personal information and personal attendance records via the student portal.

2. User Management Requirements

The system shall enable authorized users to manage accounts for both students and instructors in a secure and efficient manner.

- **R2.1** Authorized users shall register instructors and upload their ID photos, full name, instructor ID, program, and faculty details.
- **R2.2** Authorized users shall register students and upload their ID photos, full name, student ID, year level, program, and faculty details.
- **R2.3** Authorized users shall be able to amend, delete, and view all data in the system, ensuring proper management and oversight of records.
- **R2.4** Authorized users shall allow an authorized user to have one or more registered devices for attendance recording.
 - **R2.4.1** Each registered device shall be assigned to only one instructor.
- **R2.5** Registered devices can be:
 - **R2.5 1** Mobile phones
 - **R2.5 2** Computers
- **R2.6** Authorized users shall register courses and assign course details.

- **R2.7** Authorized users shall assign instructors to courses, specifying the sections they will manage and their corresponding schedules.
- **R2.8** Authorized users shall enroll students in courses, specifying the assigned instructor, schedule, and section.
- **R2.9** Authorized users shall unregister an instructor's registered device when necessary to maintain security.
- **R2.10** Authorized users shall track and locate a registered instructor's lost device to prevent unauthorized access.
- **R2.11** Authorized users shall generate reports.
 - **R2.11.1** Reports shall include:
 - **R2.11.1.1** Lists of registered instructors per faculty
 - **R2.11.1.2** List of registered students per faculty
 - **R2.11.1.3** List of registered courses per faculty

3. Attendance Tracking Requirements

The system shall deliver a comprehensive attendance tracking solution to ensure accurate and efficient monitoring.

- **R3.1** Authorized users shall record attendance using barcode scanning via registered devices.
- **R3.2** Instructors shall view a list of students enrolled in their assigned courses.
- **R3.3** The system shall allow students to:
 - **R3.3.1** Access their personal attendance records via a designated student portal.
 - **R3.3.2** Track their attendance history and monitor their presence across different courses.

4. Security Requirements

The system shall incorporate stringent security measures to ensure data protection and privacy.

- **R4.1** The system shall implement Role-Based Access Control (RBAC) to ensure appropriate data access permissions.
- **R4.2** The system shall employ data encryption to maintain confidentiality and protect sensitive information.
- **R4.3** The system shall require Multi-Factor Authentication (MFA) for instructor logins to enhance security.
- **R4.4** The system shall utilize HTTPS with SSL encryption to secure all communications.

5. Infrastructure & Deployment Requirements

The system shall leverage cloud-based solutions to ensure scalability, accessibility, and effective data management.

- **R5.1** The system shall utilize a secure and scalable cloud-based database for data storage.
- **R5.2** The system shall be both accessible and scalable to accommodate increased usage.
- **R5.3** The system shall function as a standalone platform and will not include API integration with other university systems at this stage.