

PROJECT X: Automated Attendance Tracking System Requirements Document

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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.

System Users

The system shall support three primary roles:

- **R00.01** Administrator – Responsible for user management and report generation.
- **R00.02** Instructor – Manages class attendance, records student attendance through barcode scanning, and oversees assigned courses.
- **R00.03** Student – Accesses personal information and personal attendance records via the student portal.

1. User Management Requirements

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

- **R01.01** Authorized users shall register instructors and upload their ID photos, full name, instructor ID, program, and faculty details.
- **R01.02** Authorized users shall register students and upload their ID photos, full name, student ID, year level, program, and faculty details.
- **R01.03** Authorized users shall be able to amend, delete and view all data in the system, ensuring proper management and oversight of records.
- **R01.04** Authorized users shall allow an authorized user to have one or more registered devices for attendance recording.
 - **R01.04.01** Each registered device shall be assigned to only one instructor.
 - **R01.04.02** Registered devices can be:
 - **R01.04.02.01** Mobile phones
 - **R01.04.02.02** Computers
- **R01.05** Authorized users shall register courses and assign course details.
- **R01.06** Authorized users shall assign instructors to courses, specifying the sections they will manage and their corresponding schedules.
- **R01.07** Authorized users shall enroll students in courses, specifying the assigned instructor, schedule, and section.

- **R01.08** Authorized users shall unregister an instructor's registered device when necessary to maintain security.
- **R01.09** Authorized users shall track and locate a registered instructor's lost device to prevent unauthorized access.
- **R01.10** Authorized users shall generate reports.
 - **R01.10.01** Reports shall include:
 - **R01.10.01.01** Lists of registered instructors per faculty
 - **R01.10.01.02** List of registered students per faculty
 - **R01.10.01.03** List of registered courses per faculty

2. Attendance Tracking Requirements

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

- **R02.01** Authorized users shall record attendance using barcode scanning via registered devices.
- **R02.02** Authorized users shall mark students as "dropped" if they accumulate three consecutive absences.
- **R02.03** The system shall generate attendance reports and allow authorized users to download attendance records in CSV format on a monthly basis for further analysis and record-keeping.
- **R02.04** The system shall allow students to:
 - **R02.04.01** Access their personal attendance records via a designated student portal.
 - **R02.04.02** Track their attendance history and monitor their presence across different courses.

3. Security Requirements

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

- **R03.01** The system shall implement Role-Based Access Control (RBAC) to ensure appropriate data access permissions.
- **R03.02** The system shall employ data encryption to maintain confidentiality and protect sensitive information.
- **R03.03** The system shall require Multi-Factor Authentication (MFA) for instructor logins to enhance security.
- **R03.04** The system shall utilize HTTPS with SSL encryption to secure all communications.

4. Infrastructure & Deployment Requirements

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

- **R04.01** The system shall utilize a secure and scalable cloud-based database for data storage.
- **R04.02** The system shall be both accessible and scalable to accommodate increased usage.
- **R04.03** The system shall function as a standalone platform and will not include API integration with other university systems at this stage.

5. Project Timeline

- **R05.01** An initial system review shall be conducted on **May 15, 2025**.
- **R05.02** The system shall be fully deployed and operational by **May 22, 2025**.

6. Testing Requirements

- **R06.01** The system shall undergo testing at multiple levels to ensure system reliability and performance.
 - **R06.01.01** The system shall undergo User Acceptance Testing (UAT).
 - **R06.01.02** The system shall undergo System Testing.
 - **R06.01.03** The system shall undergo Unit Testing.