**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.