ITC 130 – Applications Development in Emerging Technologies

PROJECT X: Automated Attendance Tracking System: Traceability Matrix

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Traceability Matrix

UC1- Authentication & Access Control

UC2- Attendance Recording

UC3- Device Registration & Tracking

UC4- Student Enrollment & Management

UC5- Reporting & Data Access

Requirement ID	Requirement Description	UC1	UC2	UC3	UC4	UC5	Check
1.1	Automated attendance tracking for university lecturers	☑	☐	☐	☐	☐	☑
1.2	Support multiple registered devices (smartphones, tablets, computers)	☑	☐	☐	☐	☐	☑
1.3	Restrict attendance recording to registered devices	☑	☑	☐	☐	☐	☑
1.4	Store attendance records in a cloud-hosted MySQL database	☐	☑	☑	☐	☐	☑
1.5	Provide REST API endpoints for data access and modification	☐	☐	☑	☐	☐	☑
2.1.1	Lecturers can register devices, record attendance, manage students, and generate reports	☑	☑	☐	☐	☐	☑
2.1.2	Administrators can manage lecturers, students, courses, and attendance records	☐	☑	☑	☐	☐	☑
2.1.3	Students are identified in the system and associated with attendance records	☐	☑	☐	☐	☐	☑
2.2	Only registered devices can record attendance	☐	☑	☐	☐	☐	☑
2.3	Persist user-related data (lecturers, students, courses)	☐	☑	☑	☐	☐	☑

No.	Requirement						
3.1	Lecturers can record attendance using a registered device	☑	☐	☐	☐	☐	☑
3.2	Attendance records are stored in a database	☐	☑	☑	☐	☐	☑
3.3	Prevent unauthorized devices from recording attendance	☐	☑	☐	☐	☐	☑
3.4	Generate attendance reports	☐	☐	☑	☐	☑	☑
4.1	Lecturers can register one or more devices	☑	☐	☐	☐	☐	☑
4.2	Functionality to locate a registered device	☐	☑	☐	☑	☐	☑
5.1	Store student profiles (name, university ID)	☐	☑	☐	☐	☐	☑
5.2	Capture and store passport-style photos for students	☐	☑	☐	☐	☐	☑
6.1	Store and manage courses	☐	☑	☐	☐	☐	☑
6.2	Associate students with courses	☐	☑	☐	☐	☑	☑
6.3	Associate lecturers with courses	☐	☑	☐	☐	☑	☑
7.1.1	Generate attendance records reports	☐	☐	☑	☐	☐	☑
7.1.2	Generate student lists	☐	☐	☑	☐	☐	☑
7.1.3	Generate lecturer lists	☐	☐	☑	☐	☐	☑
7.1.4	Generate course lists	☐	☐	☑	☐	☐	☑
7.1.5	Generate student enrollments in courses	☐	☐	☑	☐	☐	☑
7.2.1	Support adding new records	☐	☐	☑	☐	☐	☑
7.2.2	Support modifying records	☐	☐	☑	☐	☐	☑
7.2.3	Support deleting records	☐	☐	☑	☐	☐	☑
7.2.4	Support viewing records	☐	☐	☑	☐	☐	☑
8.1	Use a cloud-hosted MySQL database	☐	☑	☑	☐	☐	☑
8.2	Provide database access via a REST API	☐	☐	☑	☐	☐	☑
9.1.1	Conduct User Acceptance Testing (UAT)	☐	☐	☐	☐	☑	☑
9.1.2	Conduct System Testing	☐	☐	☐	☑	☐	☑
9.1.3	Conduct Unit Testing (where applicable)	☐	☐	☐	☑	☐	☑