Republic of the Philippines
DAVAO ORIENTAL STATE UNIVERSITY
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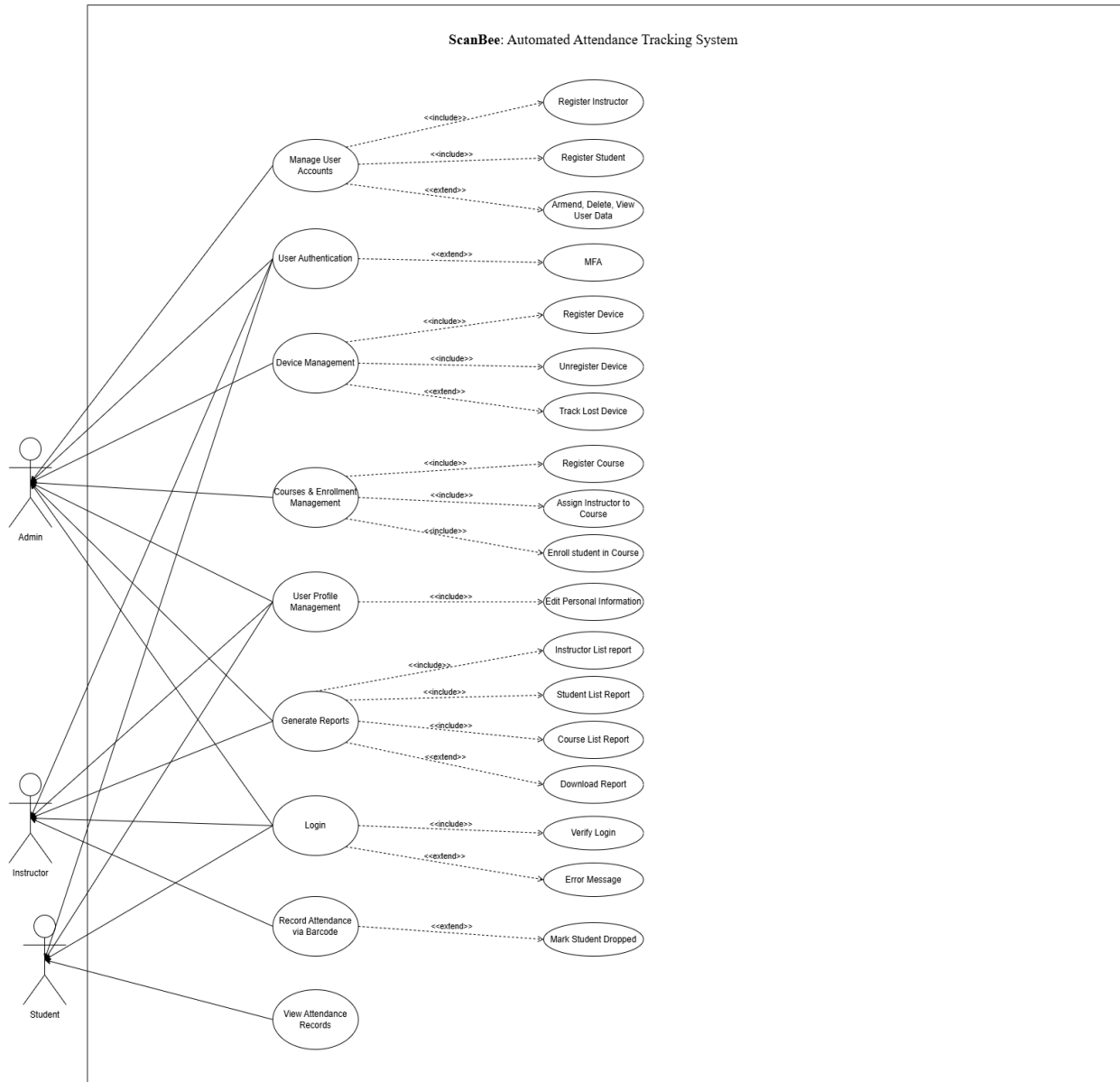ITC 130 – Applications Development in Emerging Technologies

PROJECT X: Automated Attendance Tracking System: High Level Use Diagram

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ScanBee: Automated Attendance Tracking System

Overview

1. Admin

The Admin has the most control in the system. They manage users, courses, devices, and reports. They also handle system-level actions like user authentication and data updates.

2. Instructor

Instructors can record attendance, view reports, and interact with student data relevant to their assigned courses.

3. Student

Students have limited access. Their main actions are logging in and viewing their own attendance records.

Main Use Cases and Descriptions

1. Manage User Accounts

- *Includes:* Register Instructor, Register Student
- *Extends:* Amend, Delete, View User Data
- The Admin creates new accounts and can update or delete existing user information.

2. User Authentication

- *Extends:* MFA (Multi-Factor Authentication)
- Ensures that all users (Admin, Instructor, Student) securely log in using MFA for added security.

3. Device Management

- *Includes:* Register Device
- *Extends:* Unregister Device, Track Lost Device

- Admin manages the devices used for attendance tracking. Only registered devices can be used for scanning.

4. Courses and Enrollment Management

- *Includes:* Register Course, Assign Instructor to Course, Enroll Student in Course
- Admin creates course records, assigns instructors, and enrolls students in the right subjects.

5. User Profile Management

- *Includes:* Edit Personal Information, Instructor List Report
- Users can update their own information, and Admins can view instructor-related reports.

6. Generate Reports

- *Includes:* Instructor List Report, Student List Report, Course List Report
- *Extends:* Download Report
- Admin and Instructor can generate and download reports for monitoring attendance and managing course data.

7. Login

- *Includes:* Verify Login
- *Extends:* Error Message
- All users must log in to access the system. The system verifies credentials and shows error messages for invalid login attempts.

8. Record Attendance via Barcode

- *Extends:* Mark Student Dropped

- Instructors scan student barcodes to record attendance. If a student has 3 consecutive absences, the system may mark them as dropped.

9. View Attendance Records

- by students so they can view their own attendance history.

Real-World Example

Let's say **Instructor A** opens the app and scans the QR code shown by **Student B**. The system:

- Verifies that the device is registered
- Matches the student to the course and instructor
- Logs the attendance with time and date
  If **Student B** misses three classes in a row, the system marks them as "Dropped" automatically.

Meanwhile, the **Admin** can download attendance reports for all students in that course and update student details if needed.

Conclusion

This High-Level Use Case Diagram provides a clear view of the **main operations** and **user interactions** in the system. It ensures that:

- **Admins** manage the system structure
- **Instructors** handle attendance and teaching
- **Students** track their own records

It also emphasizes **security** through features like device registration and multi-factor authentication, making the system **efficient**, **secure**, and **user-friendly**.