

QR-Based Attendance System - Use Case Scenarios

System: Attendance System (QR-Based)

Actors:

- Student
- Instructor

Use Case 1: Student Scans QR Code

Main Flow:

1. The student opens the attendance system on their device.
2. The student logs in using their student number and password.
3. The instructor generates a QR code for the ongoing class.
4. The student scans the QR code using the system.
5. The system verifies:
 - The IP/Wi-Fi network (to ensure the student is inside the campus).
 - The device ID (to prevent multiple devices for one student).
6. If both verifications succeed, attendance is marked as successful.

Alternative Flows:

- Invalid IP/Wi-Fi: The system displays "Invalid network connection."
- Different Device: The system displays "Access denied: unregistered device."
- Absence Limit Exceeded: The system displays "Attendance failed: absence limit reached."

Use Case 2: Instructor Starts Attendance

Main Flow:

1. The instructor logs into the system.
2. The instructor selects the course and starts the attendance session.
3. The system generates a unique QR code valid for a limited time.
4. Students scan this QR code to mark attendance.

Use Case 3: Instructor Views Attendance Report

Main Flow:

1. The instructor selects a course from the list.
2. The instructor views the attendance report for that course.
3. The report shows the date, time, and attendance status of each student.

Use Case 4: Manage Absences

Main Flow:

1. The instructor can update the absence status of a student manually if necessary.
2. The system updates the absence count and flags students who exceed the allowed limit.