



Room Schedule & Status Monitoring System

Group 3

Group Members and Their Roles

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Problem Statement

Although the school already maintains a fixed list of subjects, schedules, and assigned rooms, conflicts and confusion still occur. At times, classrooms or other facilities are unexpectedly unavailable, or it is unclear which teacher or class should be occupying them. This often forces teachers and students to search for a vacant room on the spot, disrupting classes and wasting valuable time. Additionally, scheduled and reserved rooms sometimes remain unused because teachers fail to check in, leading to inefficiency and wasted resources.

Objectives

- To provide a centralized system that shows the real-time status of all school establishments (classrooms, laboratories, halls, etc.).
- To allow teachers to reserve vacant rooms and check in/out automatically without admin intervention.
- To reduce wasted time by automatically marking rooms as vacant if teachers fail to check in or out.
- To give students easy visibility into which rooms are available or assigned at specific times.
- To provide admins with tools to manage conflicts, approve reservations, and monitor flagged cases.

Scope

Included

1. Upload and storage of the official semester schedule by admins/staff.
2. Reservation requests by teachers, subject to **admin approval**.
3. Real-time room/facility dashboard showing status: Available, Scheduled, Reserved, Occupied, Auto-Vacant, or Flagged.
4. Automatic check-in/out system for teachers (no admin approval needed).



5. Auto-vacancy rules:

Scheduled classes → Room auto-released if teacher fails to check in within 15 minutes.

Reserved slots → Room auto-released if teacher fails to check in within 30 minutes.

6. Flagging of teachers who fail to check out after their time slot.
7. Pop-up details showing full information (room description, subject, teacher, capacity, schedule, status).
8. Conflict detection to prevent double booking.
9. Search and filtering (by room, subject, teacher, time).
10. Reports and audit logs for admins.

Excluded

- Automatic IoT-based occupancy detection (no sensors).
- Mobile app version (web app only).
- Integration with registrar's official scheduling software (manual upload only).

Users

- I. **Teachers** - Can reserve rooms (with admin approval), check in/out automatically, and view schedules.
- II. **Admins/Staff** - Upload semester schedules, approve reservation requests, monitor flagged teachers, resolve conflicts, and generate reports.
- III. **Students** - View-only access; can see real-time room availability and scheduled/reserved users.

Proposed Features or Functionalities

1. **Admin Schedule Upload** – Upload or manually encode semester schedule.
2. **Facility Dashboard with Real-Time Status** – Display all establishments with color-coded status indicators.
3. **Pop-Up Establishment Information** – Detailed description, subject, teacher, time slot, and capacity.
4. **Teacher Reservation Requests** – Teachers can reserve vacant slots (admin approval required).
5. **Automatic Check-In/Out** – Teachers check in/out directly; no admin approval needed.
6. **Auto-Vacancy & Flagging Rules** – System auto-releases rooms if unused and flags teachers who fail to check out.
7. **Conflict Detection & Management** – System prevents overlapping schedules/reservations.
8. **Search & Filtering** – By establishment, subject, teacher, or time.
9. **Reports & Audit Logs** – Usage statistics, flagged cases, conflict history.

Technology Stack

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** PHP or Node.js
- **Database:** MySQL or Firebase
- **Hosting:** Local server (XAMPP)