

# Requirement Analysis Lab Task — AUTOMATED CAMPUS FLOW

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## Group Members

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## Part 1 — Requirement Elicitation

1. Room browsing & search (capacity, equipment, building).
2. Room booking for specific date, time, and course.
3. Conflict detection and prevention of double booking.
4. Real-time availability of rooms/labs.
5. Booking modification & cancellation with notifications.
6. Personalized timetable view for teachers.
7. Notifications for booking confirmations and updates.
8. Authentication via university credentials (Firebase).
9. App loads room/timetable data within 3 seconds.
10. Admin generates usage reports.
11. Offline grace & sync of cached timetable.
12. Usability and accessibility (simple UI, readable fonts).

## Part 2 — Requirement Categorization & Analysis

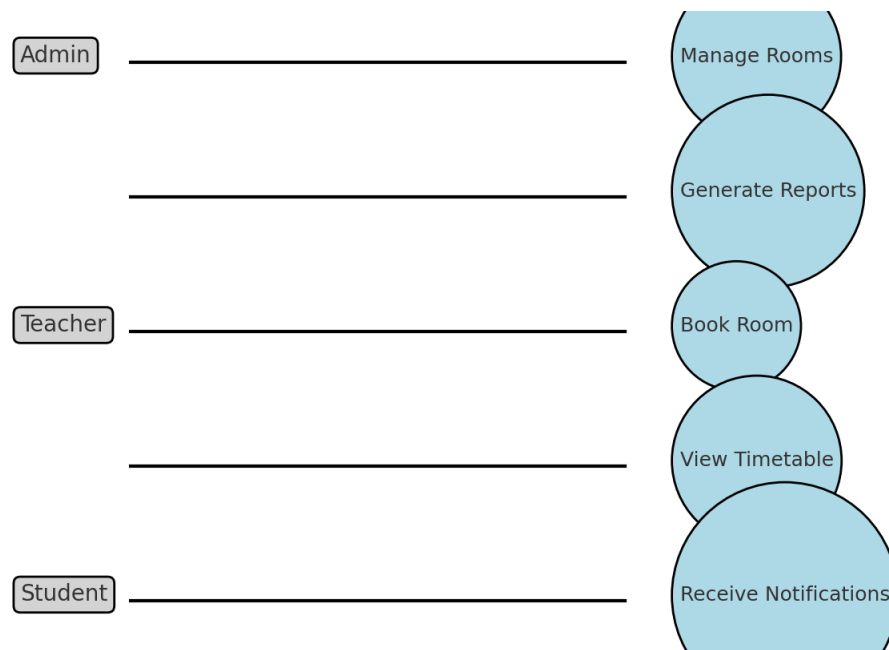
Table showing classification, ambiguities, and resolutions.

ID	Description	Type (F/NF)	User/System	Ambiguity/Conflict	Resolution
R1	Room browsing & search	F	User	Which equipment attributes supported?	Define list: projector, PC, whiteboard, etc.
R2	Room booking	F	User-System	Duration & advance booking window unclear.	Set min 30 min, max 4 hours; up to 6 months advance.
R3	Conflict detection	F	System	Simultaneous booking race.	Use atomic DB check.
R4	Real-time availability	F	System	Definition of 'occupied' unclear.	Base on booking schedule initially.
R5	Modify/cancel booking	F	User-System	Who gets notifications?	Notify teacher & students of affected class.
R6	Timetable view	F	User	Image or structured data?	Use structured DB entries for filtering.
R7	Notifications & alerts	NF	System	Which channels (push/email)?	Support push + email, allow preferences.
R8	Authentication	NF	System	Temporary staff onboarding?	Allow admin-created

					temp accounts.
R9	Performance	NF	System	Network/dataset size unspecified.	Define SLA: ≤3s under 4G/WiFi, 1000 rooms.
R10	Reports	F	System	Report format unclear.	Provide CSV/PDF export.

### Part 3 — Requirement Modeling

#### Use Case Diagram



#### DESCRIPTION:

**Book Room:**Teacher selects date, time, room; system checks conflicts and reserves.

**View Timetable:**Teachers/Students view personalized class schedule with details.

**Manage Rooms:** Admin adds or edits room details, capacity, and availability.

**Receive Notifications:** Users receive alerts about booking confirmations or changes.

**Generate Reports:** Admin produces reports on room usage and exports data.

## Part 4 — Reflection

During the elicitation phase, the biggest challenge was interpreting vague or conflicting requirements from teachers and admins. Teachers wanted flexibility in bookings, while admins prioritized control and data integrity. It was also difficult to define how 'real-time occupancy' should work , whether based on schedules or physical sensors.

The hardest requirements were related to real-time availability, offline access, and notification scope. Poor requirement analysis can lead to system failures like double bookings or frustrated users. Clear, analyzed requirements ensure the developed system meets actual campus needs and avoids rework.