Problem Statement for Laboratory Booking system
SANAS M.M. – 2022/E/099
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1. High Level Problem Summary

Elevator Statement:

The university lacks a centralized and efficient system to manage student enrolment, subject practical, staff assignments, and laboratory resources including instruments and technical staff.

Primary Success Criteria:

- Ensure accurate mapping of students to subjects and practical.
- Enable transparent assignment of instructors and lecturers.
- Facilitate tracking of instruments and labs with responsible personnel.
- Support future integration with a relational database system.

Scope of the Project:
This project focuses on the conceptual design (ER model) for managing the academic and laboratory components of a university's engineering faculty. It includes entities such as students, lecturers, instructors, subjects, practicals, labs, instruments, and technical officers, along with their relationships.

2. Detailed Problem Statement

2.1 FUNCTION

The system must:

- Track student enrolment in subjects.
- Manage which lecturers conduct which subjects.
- Manage assignment of instructors by lecturers.
- Map subjects to practical and practical to laboratories.
- Track laboratory instruments and their maintenance.
- Assign technical officers to maintain laboratories.

2.2 TIME

Past: Processes were likely done manually via spreadsheets or isolated systems.

Present: This ER model offers a unified academic-lab management structure.

Fucture: Can be extended into a full database-backed web system with analytics.

3. Key Stakeholders

Name	Role
Academic Coordinator	Oversees subject offerings, enrollment, and staff assignments.
Head of Laboratory Unit	Manages laboratory operations, practical allocations, and lab resources
Lecturers	Conduct subjects and assign instructors to practicals.
Instructors	Support practical sessions and assist students.
Technical Officers (TOs)	Maintain instruments and ensure lab functionality
Students	Primary users who enroll in subjects and attend practicals.