RAJALAKSHMI ENGINEERING COLLEGE

Department of Information Technology

GE23627 DESIGN THINKING AND INNOVATION

AY 2025-2026

S.C.O.P.E.S – Team Scope Sheet

Scoping of design challenge When you want to work on real project using Design Thinking, begin the process with a specific and purposeful situation or problem to solve called Design Challenge. The Design Challenge should be doable, clear, actionable and hopefully inspiring. Your problem statement should be an outcome and not a solution.
You can use SCOPES as a tool to brainstorm and frame your problem.

TEAM NAME	**Thrifty**
TEAM MEMBERS	**Sriman Viyasen S J (231001208)** **Vishal S (231001248)**
DOMAIN NAME	**EdTech - Smart Attendance Tracking System using Geo-Fencing and Flickering QR**
DATE	**27 - 01 - 2026**
FACULTY INCHARGE	**Mrs.L.Leena Jenifer**

S – Situation / Problem • What is the real situation you want to address? • Where does this problem occur? • Describe without mentioning any solution.	Current classroom attendance methods like roll call or static QR codes waste valuable lecture time and are vulnerable to proxy attendance. Students often share screenshots/photos or live streams of QR codes, enabling absent students to mark attendance remotely. This reduces discipline, affects genuine students, and makes attendance records unreliable for teachers.

C – Constraints What are the CONSTRAINTS when trying to address the situation or problem?	• Must prevent screenshot/photo/remote QR sharing • Attendance should be possible only inside classroom. • Must be fast . • Should work in low network conditions • Must respect privacy. • Android support. • Should scale across multiple classrooms/floors.
O – Objectives & Outcomes What are the OBJECTIVES and intended OUTCOME of this design challenge?	• Save class time by enabling quick attendance marking without roll call. • Ensure correct, verified attendance so students don't request changes later, reducing follow-up workload for teachers. • Reduce proxy attendance by preventing QR sharing and ensuring physical presence. • Provide clear attendance proof/logs for easy dispute resolution.
P – People Who are the PEOPLE that you are trying to help? Whose problem are you trying to address? Primary Stakeholders Secondary Stakeholders Decision Makers	• **Primary Stakeholders :** Students, Faculty/Instructors • **Secondary Stakeholders :** Department Admins, Class Coordinators • **Decision Makers :** College Management
E – Estimates What are the ESTIMATED resources required for this design challenge?	• Location Validation Technologies - Geofencing, GPS. • Secure QR Generation system. • Mobile Application Platform. • Backend Server and Database. • User Authentication and Security Modules. • Manpower for development and Testing.

S – Scope to Explore Is there ample SCOPE to explore multiple alternatives to address the problem?	• Different methods can be explored to verify student presence inside the classroom like hybrid geo-fencing techniques. • Multiple anti-proxy detection techniques can be implemented, such as detecting fake GPS, preventing token reuse and identifying suspicious login patterns. • Alternative classroom interaction features can be explored, such as attendance time windows, late entry marking, or integration with college ERP/LMS systems.
Frame the Design Challenge	How might we design an attendance system that saves lecture time, records attendance accurately in real-time, and prevents proxy attendance by ensuring QR codes cannot be shared and students must be physically present inside the classroom?

SIGNATURE