Software Design Specification (Phase-1)

1. Architecture Overview

Client-Server architecture.

Frontend: React.

Backend: Node.js + Express.

Database: Google Sheets via API.

Loose coupling for Phase-2 migration.

2. Module Design

QR Session Module.

Location Validation Module.

Attendance Module.

Storage Abstraction Module.

CSV Export Module.

3. Phase-2 Readiness

sessionId acts as future Session entity.

Storage module replaceable with MongoDB.

Auth middleware injectable.