

# RFID-Integrated Ticketing System

## Group 5: Registration & Batch Management (FR-T3, FR-T5, FR-T6, FR-T7)

**Focus:** Visitor registration, batch creation, group categorization, proximity tracking, payment integration, and kiosk terminal integration.

**Components:** Visitor Registration UI, Batch Creation Module, RFID Tag-Linking API, QR Backup Generator, Payment Gateway Interface, Group Categorization Module, Proximity Tracking Module.

### Tasks and Member Roles:

- **Member 1: Registration UI Developer**
  - **Java:** Develop VisitorRegistrationUI backend APIs (Node.js, REST) for registration (FR-T3). Implement registerVisitor endpoint.
  - **Database:** Design visitors table (id, name, group\_type, organization, rfid\_tag, status, visited\_locations, entry\_time, exit\_time, contact\_number, age\_range, gender, ticket\_type) for 10,000 users (FR-T3).
  - **Hardware:** Integrate kiosk terminals for on-site registration input (FR-T3, Section 1.4).
  - **Other:** Build React UI with multilingual support (Sinhala, Tamil, English) and WCAG 2.1 compliance (Section 3.1).
- **Member 2: Batch Management Specialist**
  - **Java:** Implement BatchCreationModule for batch creation (school: 100, friends: 15, family: 25, FR-T5–T7). Develop createBatch and assignLead methods.
  - **Database:** Design batches table (batch\_id, lead\_visitor\_id, batch\_type, proximity\_radius, max\_members) and optimize queries.
  - **Hardware:** Use kiosk terminals to input batch details during registration (FR-T5–T7).
  - **Other:** Ensure batch constraints and integrate with ProximityTrackingModule for location sharing (FR-T6, FR-T7).

- **Member 3: Tag Linking and QR Developer**
  - **Java:** Build RFIDTagLinkingAPI for tag linking (FR-T3, FR-T8) and QRBackupGenerator for QR codes (Section 1.4).
  - **Database:** Update visitors and rfid\_tags tables for tag linking and store QR code data.
  - **Hardware:** Configure kiosk terminals to display QR codes for visitors (FR-T3).
  - **Other:** Test QR code scanning as a backup for RFID wristbands (Section 1.4).
- **Member 4: Payment and Proximity Specialist**
  - **Java:** Develop PaymentGatewayInterface for payment processing ( $\leq 3s$ , FR-T3) and ProximityTrackingModule for 5s proximity checks (FR-T5, FR-T7).
  - **Database:** Create payments table (payment\_id, visitor\_id, amount, status, timestamp) and optimize proximity queries (10m radius).
  - **Hardware:** Ensure kiosk terminals support payment confirmation display (FR-T3).
  - **Other:** Integrate with university payment gateway (TLS, Section 3.3) and test proximity alerts with ZoneBreachProximityAlertEngine.

## Group 2 Deliverables:

- Java APIs for registration, batch creation, tag linking, QR generation, and payments.
- MySQL schemas for visitors, batches, payments, and proximity data.
- Kiosk terminal integration for registration and QR display.
- React UI, payment gateway integration, and proximity tracking logic.

Member	Enumber	Name
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4	E/21/386	Sivasuthan J.

