

# Integrating a Mobile app with Students Manager API

Connect a mobile app to new REST API endpoints in **StudentsManager** so the mobile client can submit and retrieve data. Expose secured API endpoints in StudentsManager.Mvc to collect and retrieve registered users' mobile device telemetry: geolocation (lat/long), battery status (level, plugged), and network state.

## Functional Requirements

- Authentication: Mobile app must authenticate against StudentsManager.Mvc before sending telemetry.
- Telemetry Capture (client):
  1. Geolocation (latitude, longitude).
  2. Battery status (level %, isPlugged).
  3. Network state (WiFi, CELL\_4G, NONE, etc).
- Telemetry Submission:
  1. POST endpoint to store a snapshot.
  2. Snapshot includes timestamp (UTC) server-side.
- Telemetry Retrieval:
  1. GET latest snapshot for current user.
  2. GET recent N snapshots (query parameter take).
  3. Authorization: Endpoints reject unauthenticated requests (401).
  4. Server-Side Tasks (StudentsManager.Mvc)
    5. Add DeviceTelemetry entity, migration, DbSet.
    6. Add DTO.
    7. Service layer.
    8. Register service in Program.cs.
    9. API controller.
- Migration:
  1. dotnet ef migrations add AddDeviceTelemetry
  2. dotnet ef database update
- Client-Side Tasks
  1. Add API base URL and JWT usage (assume login implemented separately).
  2. Send telemetry after each update (debounced).
  3. Optional button to fetch latest telemetry.