Technical requirements GeoPal

Functional requirements

- The app reads the GPS/Pos. Data
- The app converts WiFi information to coordinates (based on IP)
- The app sends a notification up on entering a radius of the set location
- The app has a power-saving-mode dependent high-/low-accuracy mode (refresh interval

Non-functional requirements

- The app has a light- as well as dark-mode
- The app persists the reminder information on the device itself
- The app’s GPS/Pos. Data has an accuracy of “< 10m”
- The app is published to the Google Play Store
    - This process will take some time; this means the app will only be published after the course has ended. I will send an E-Mail with its URL, once it’s uploaded.

Test Concept

Test environment

The tests can be executed on either an emulator or any physical device running Android.*
The tests done by the application's developer were executed on both an emulator and a physical device (S22).

* as long as the *Google Play Services* are not restricted by any geopolitical conflicts (e.g. the CCP has no access to the Google Play Services)

Phone specifications

Physical Device		Emulated device	
Brand	Samsung	Brand	Google
Model	Galaxy S22	Model	Pixel 6
OS	Android	OS	Android
Version	13	Version	11

Types of tests

There are two kinds of tests: **Unit Tests** (UT) and **User Acceptance Tests** (UAT), both of which will be included and done during the process of this project.

Unit Tests

UT's are automatically executed by the application itself. **UT**'s test components of the app by themselves, except UI related classes and methods. They'll target services, which e.g. save reminder-based information to the local storage.

User Acceptance Tests

UAT's are done by, as the name implies, users: Someone, e.g. the developer will go through the list of "to-be-done-UAT's" and do the exact thing these test cases describe by hand.

Test Cases

Name	Grant WiFi access as a user
Requirements	WiFi-access permissions not yet granted
Steps	1. Open the application 2. (Pop-up appears) 3. Click 'allow'
Expected result	The app is now able to access the device's IP address and WiFi list.

Name	Grant location access as a user
Requirements	Location-access permissions not yet granted
Steps	1. Open the application 2. (Pop-up appears) 3. Click ‘allow’
Expected result	The app is now able to access the device’s current GPS-location.

Name	Create GPS-reminder
Requirements	WiFi-access and Location-access granted
Steps	1. Open the application 2. Click create button (+) 3. Enter title 4. Click GPS based 5. Enter location 3. Click ‘Create’
Expected result	A new reminder, with a set location now exists and appears in the application’s dashboard.

Name	Create WiFi-reminder
Requirements	WiFi-access and Location-access granted
Steps	1. Open the application 2. Click create button (+) 3. Enter title 4. Click WiFi based 5. Choose WiFi / Current WiFi 3. Click ‘Create’
Expected result	A new reminder, with a set WiFi now exists and appears in the application’s dashboard.

Name	Delete reminder
Requirements	A reminder has already been created
Steps	1. Open the application 2. Long-press any reminder on dashboard 3. Click delete icon (trashcan)
Expected result	The deleted reminder doesn’t exist anymore