

Android Programming

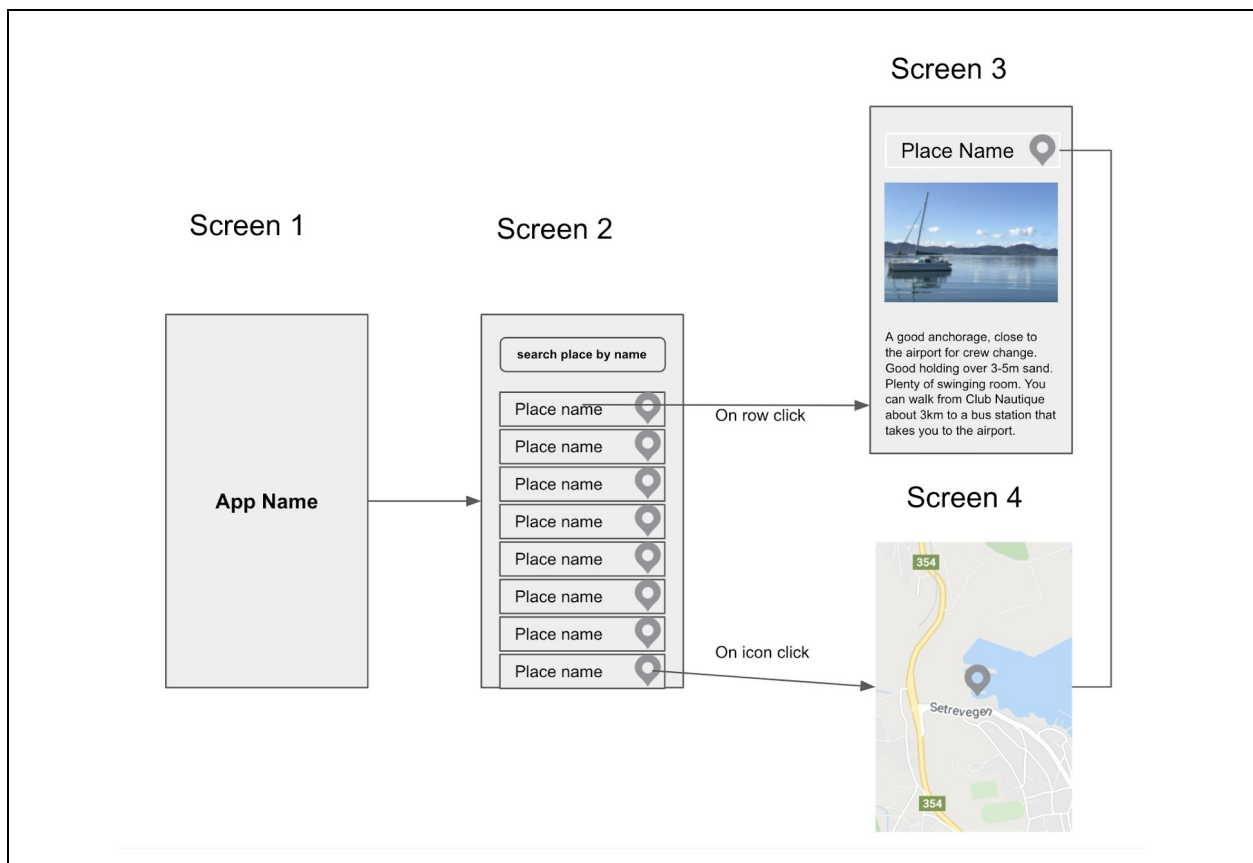
Individual assignment

Assignment

noforeignland.com is a non-commercial web api built and maintained by liveaboard sailors to benefit the sailing community. It provides information about places to visit and boat tracking capabilities to help the community.

In this assignment you have to create an app that shows the list of places from noforeignland.com and shows some of the details of these places using the data provided by the api.

Following diagram shows the navigation between the screens and gives an idea how this app may look.



1. **Screen 1:** On clicking the app icon, a **splash screen** should be shown with the app name. After a short delay, the app should automatically navigate to Screen 2 from this screen.
2. **Screen 2:** The app should show a list of all places with an input text field on the top to search places by name.

On this screen, a list will be populated by the data coming from <https://www.noforeignland.com/home/api/v1/places/> endpoint.

- a. On clicking action on the place row in the list. It opens the screen 3
- b. On clicking action on the location icon on the place row in the list. It opens the screen 4 with the place name and location info.
- c. On this screen a user can search places by name. On user input, places list will be filtered with matching places name input.

Going back from this screen 2 . App closes.

3. **Screen 3:** On this screen app should display the name of place image banner if any and 'comments' text.

Place details can be fetched by calling the following endpoint by the id of the place. <https://www.noforeignland.com/home/api/v1/place?id=4776700298657792>

Going back from **Screen 3**. App navigates back to list **Screen 2**.

4. **Screen 4:** This is a map screen that shows the location with location icon marker for the place for which the map screen is opened. This screen should be able to receive the name of the place, latitude and longitude information passed by the launching screens.

Going back from **screen 4**. App navigates back to the screen it was launched from.

Optimization Requirements

1. Places list endpoint (<https://www.noforeignland.com/home/api/v1/places>) returns a fairly large response in the form of a list of all places. App needs to use SQLite database to cache the places from this response on first calling, so that, this endpoint would not need to be called again. This cached data in the SQLite database can also help in searching and filtering the list of places by name input.
2. All the web calls will be performed using async programming techniques.
3. For the list implementation use RecyclerView

Optional

1. **Place of caching:** App needs to fetch places and cache the response in the SQLite database from <https://www.noforeignland.com/home/api/v1/places/>. Being a developer of the app, it is your decision on which point you want to cache the response.
2. You can use any framework, third party libraries that you think will help you for this app.

Noforeignland API

In this assignment we are only interested in two of the GET endpoints that noforeignland.com api provides.

Purpose	Endpoint	Details
Get the list of global places	1 Places list endpoint https://www.noforeignland.com/home/api/v1/places/	<p>Places endpoint returns the list of places inside the JSON Array.</p> <pre> { "type": "Feature", "properties": { "name": "Sidi Bou Said Fuel", "icon": "nfl_fuel", "id": 4579557281628160 }, "geometry": { "type": "Point", "coordinates": [10.350725577156027, 36.86592310537196] } }, </pre>

		<p>Where the name and id of the place are found under properties object.</p> <p>And coordinates (latitude and longitude) are found inside the geometry object.</p>
Provides the details of a place by its id	<p>2 Place details endpoint</p> <p>https://www.noforeignland.com/home/api/v1/place?id=4776700298657792</p> <p>Use the id from the properties object..</p>	<p>Endpoint provides a lot of attributes for the given place.</p> <p>We are only interested in name, lat, lon, comments, banner image link.</p> <p>All of these are available under place JSON Object.</p>

Report

You are supposed to submit a short report. In which you describe what implementation techniques (UI components, patterns, frameworks, ways) you have chosen for your application and what alternatives you could have considered. Reflect on pros and cons for your chosen approach.

Submission

You are required to submit app source code with a report and an app APK file (Android app installation file) in a zip file format.

On unzipping the zip file, app code should be found under 'sourcecode' folder with app APK and the report pdf.

Evaluation

Screen 1	10% Splash screen
Screen 2	20% Implementation of RecyclerView and Search feature
Screen 3	15% Showing the place data with an image.
Screen 4	10% Use of Google Map API and receiving data inside of an Intent from other screens.
Use of SQLite	10% Implementation of caching and use of database
Async fetching and Parsing	10% Students can use frameworks or their own async implementation.
Good practices and techniques	10% Proper and precise use of android concepts and techniques. Or Optionally use frameworks, Third party libraries to perform the tasks.
Navigation between screens and passing of data and receiving	5% Navigation and data passing technique between the screens
Report	10%