Klivvr Android Assignment

The goal of this assignment is to evaluate the problem-solving skills, UX judgment, and code quality of the candidate.

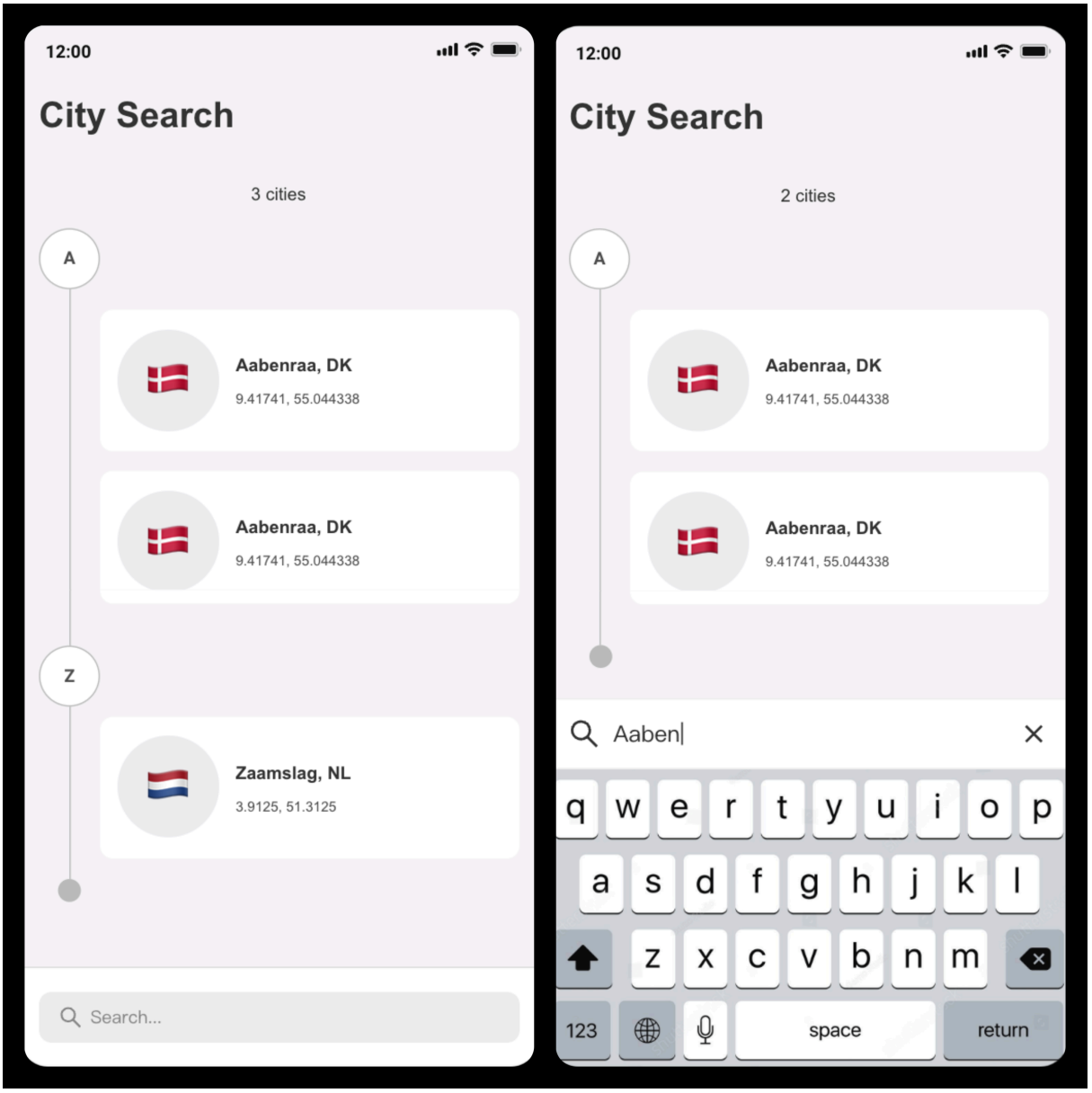
We have a list of cities containing around 200k entries in JSON format. Each entry contains the following information:

```
{
  "country": "UA",
  "name": "Hurzuf",
  "_id": 707860,
  "coord": {
    "lon": 34.283333,
    "lat": 44.549999
  }
}
```

Your task is to:

- Load the list of cities from here.
- Be able to filter the results by a given prefix string, following these requirements:
    - Follow the prefix definition specified in the clarifications section below.
    - Implement a search algorithm optimized for fast runtime searches. Initial loading time of the app does not matter.
    - Search is case-insensitive. Time efficiency for the filter algorithm should be better than linear.
- Display these cities in a scrollable list, in alphabetical order (city first, country after). Hence, "Denver, US" should appear before "Sydney, Australia".
- The UI should be as responsive as possible while typing in a filter. The list should be updated with every character added/removed to/from the filter.

Design Requirements



Prototype: https://mockitt.com/proto/xQ2D8Qi3suszki68EKdfSS/sharing?view_mode=read_

- **Each city's cell should:**
  - Show the country flag as the asset
  - Show the city and country code as the title.
  - Show the coordinates as the subtitle.
  - When tapped, show the location of that city on Google Maps.
- **Group Letter and Sticky Header:**
  - On the left-hand side, they should display the current group letter.

    - The group letter section should function as a sticky header while scrolling.
    - The group letter section should maintain a connecting line between each group.
- **Search Bar Animation:** The search bar states (focused/out of focus) must be animated (size, colors, etc.).
- UI states must be animated (initial loading, empty state, and search result)

Additional Requirements/Restrictions

The list will be provided to you as a plain text JSON format array. You can preprocess the list into any other representation that you consider more efficient for searches and display. Provide information on why that representation is more efficient in the comments of the code. Database implementations are forbidden.

The code of the assignment has to be delivered along with the git repository (.git folder). We want to see the progress evolution.

Screen rotation should be allowed.

The language must be Kotlin and the UI must be implemented using jetpack compose.

3rd party libraries are only allowed for:

- JSON serialization
- Dependency Injection

Android Jetpack Suite is allowed.

Compatibility with Android 5.+

Assessment

Once submitted, your solution will be checked on the requirements/restrictions mentioned above as well as:

- Technical Skills
- Documentation
- Coding/Problem Solving Skills

- Code Efficiency, Maintainability, Scalability
- Architecture and Design Patterns
- Version Control
- Platform Knowledge
- UI structure and UX considerations

Clarifications

We define a prefix string as: a substring that matches the initial characters of the target string.

For instance, assume the following entries:

Alabama, US

Albuquerque, US

Anaheim, US

Arizona, US

Sydney, AU

If the given prefix is "A", all cities but Sydney should appear. Contrariwise, if the given prefix is "s", the only result should be "Sydney, AU". If the given prefix is "Al", "Alabama, US" and "Albuquerque, US" are the only results. If the prefix given is "Alb" then the only result is "Albuquerque, US"