Android VPN Test Task

1. Introduction

We are a VPN company which providing VPN solutions for iOS. Our focus to bring the solution to Android phones and tablets. VPN is an application for allowing users to connect to remote secured servers global wide. The application will support multiple protocols, including but not limited to OpenVPN and Shadowsocks.

2. Purpose

This test purpose is to examine the developer skills, creativity, and knowledge. We will test the stickiness to the design reference (colors, positions and in general - 'pixel perfect'). Also, we'll run a code review, mostly focused on code reliability, efficiency, clearance, and basic commenting.

3. Requirements

a. Splash screen

The splash screen intended to fetching and preloading of the remote JSON configuration before presenting the application.

i. Present loading animation

Use Lottie library to present the loading animation in the middle of the splash screen (https://github.com/airbnb/lottie-android). The animation json and images files are located in this URL:
https://cfg.safenetwork.us/android-test/loader.json

ii. Download JSON

Use any popular HTTP library and download the JSON configuration from the following URL:
https://cfg.safenetwork.us/android-test/configuration-15.json
After downloading the JSON, parse it and save the *"vpns"* list in the user shared preferences or other key-value local storage.

Explanation of the fields:

```
{
  "imageUrl": "flags/015/countryFrance.png", (Server image url)
  "isDefault": true,
  "isPremium": true,
  "name": "France", (Server name)
  "serverUrl": "http://mvp-par-01.interoutes.co",
  "configurationUrl": "configurations/mvp-par-01-udp.ovpn",
  "configurationFallbackUrl": "configurations/mvp-par-01-tcp.ovpn",
  "trialConfigurationUrl": "configurations/mvp-par-01-udp.ovpn",
  "vpnProtocol": "openvpn",
  "geohash": "u0b1d6n6m94c", (Server geohash location)
  "group": "fr", (Server group)
  "continent": "Europe",
  "hidden": true (Server is in group or not)
},
```

iii. Preload the user distance

Use any popuplar HTTP library to fetch the user ip using the following or similar service: https://ifconfig.co.
Convert the user IP to a location coordinates and use the server "*geohash"* field for calculating the distance between the user and the server. **You can do this task async, it's up to you.**

b. Servers selection screen

In this screen, the user has the option to choose a preferred server. It's always including a "Default" server and all the other servers from the list we downloaded in the splash screen.

i. Build the UI according to Zeplin

Create the screen and make use of the Zeplin comments to ensure that you sticking to the reference.

ii. Render the servers list from the loaded JSON

Render the list of the servers that saved in the local storage (user preferences or other options), and render it into the list (using the Android default list or with 3rd library).

iii. Connection quality indicator

The connection quality should be calculated based on the user distance from the servers so the farthest servers will receive the worsed

connection indicator, the nearest servers will receive the best connection indicator and all the other will receive the average connection indicator.

iv. Server grouping

Take into account that the servers are separated into “groups”. Each group contains one or more servers. The servers that included positive value of “hidden” field (true), should be inserted as “sub-servers” on the same group. For examples, all the servers with “fr” group should be together as “France 2”, “France 3” and so on. The server with “False” value in the “hidden” field should be the first server and you can take the group server image and the group server name from its values.

v. Server image loading

Load the server image from the fetched JSON field (“imageUrl”). Add the URL prefix before the path:
https://cfg.safenetwork.us/ + imageUrl
For example for the France server:
https://cfg.safenetwork.us/flags/015/countryFrance.png

Save the loaded image into the cache (using a 3rd library or android default).