

Justin McCartney

Colorado State University - Global

CSC475

Professor Pensado

Mar. 16, 2025

Location Tracker: Overview

Purpose of the Program

The primary objective of the Location Tracker App is to display the integration of location services in an Android application. This app retrieves the user's current location periodically via GPS or network services and displays it on a Google Map using the Google Maps SDK. Designed for simplicity, it features zoom controls, marker updates, and automatic map centering to visually represent the user's position in real-time.

Development Challenges

Several obstacles arose during development. One of the major issues was configuring the Google Maps API key correctly. Initially, the map displayed a blank screen due to restrictions or incorrect API setup. Troubleshooting this involved validating API key permissions, enabling the Maps SDK for Android in the Google Cloud Console, and confirming emulator internet connectivity. Additionally, updating the emulator's location sometimes led to rendering failures, which required restarting the app and verifying data permissions.

Skills Acquired

Throughout the development process, skills in Android Studio, Kotlin programming, and Google Maps integration were strengthened. Key takeaways include...

- Configuring and securing API keys in Google Cloud Console
- Using *FusedLocationProviderClient* for efficient location retrieval
- Handling runtime permissions and map lifecycle callbacks
- Debugging emulator tools like location simulation and API key restrictions

