Back to projects

View on Github

GPS live tracker

Introduction

To familiarize myself more with interactive map integrations (Google Maps, Mapbox, etc..) and WebRTC in mobile applications, I decided on creating a GPS Tracker mobile app.

My GPS tracker app allows users to track their own location, create routes, share their location in realtime and make video calls. This could be used for example to track a traveling family member, to share a roadtrip with a friend or to record your own bike trip.

Users have the ability to share a passcode, that is unique to them, with the people they want to be tracked by. This passcode can in turn be used by others to track the tracker.

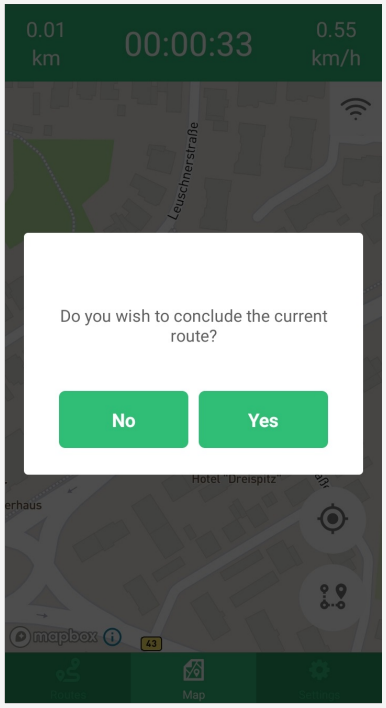
Tech stack

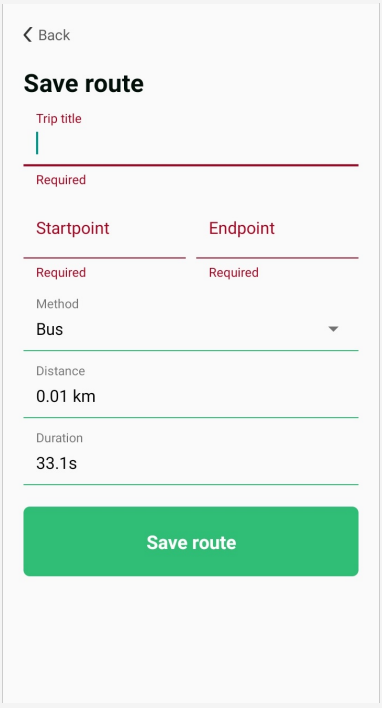
- React Native with Redux (state management)
- React Native WebRTC for peer to peer video and audio streaming
- Firebase's Realtime Database for the transmission of location data
- Socket.io for the STUN and TURN setup needed for WebRTC
- Node.js with Express on top as signaling server and webserver
- Heroku to host the web app for this project
- Typescript for both front and back-end

Functionality

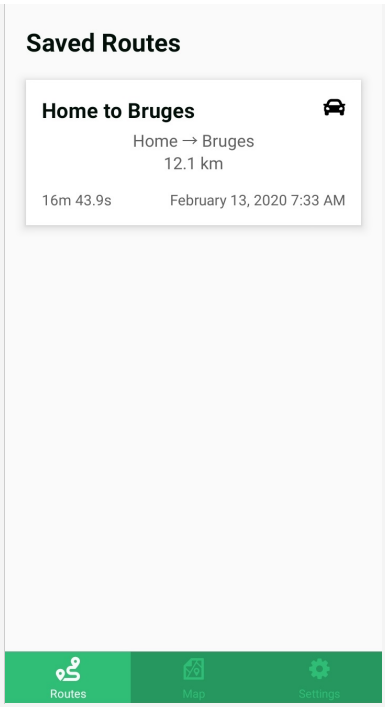
Save, edit and view routes

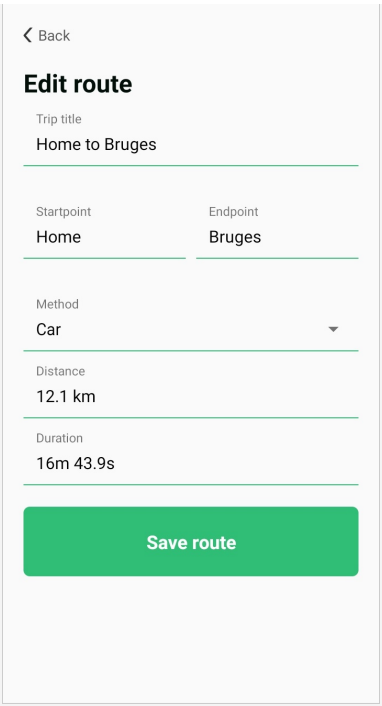
While tracking, after a minimum distance (default is 10 m) has been covered, users can conclude and save the current route. If they choose to save the route, they will be prompted to provide several details about the route.

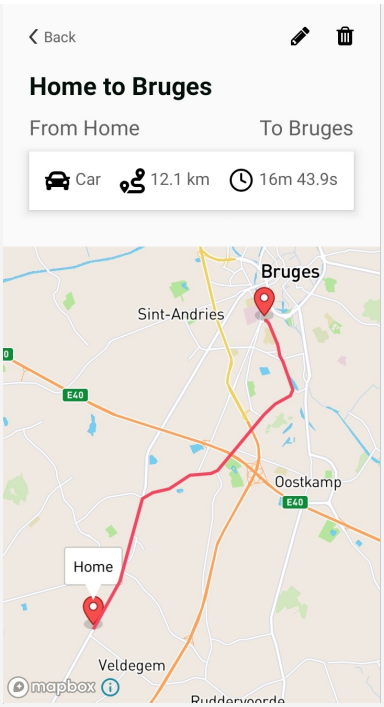




Users can later view and edit their saved routes.

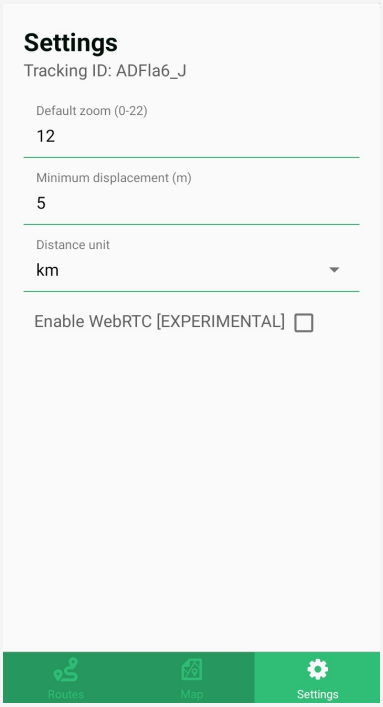




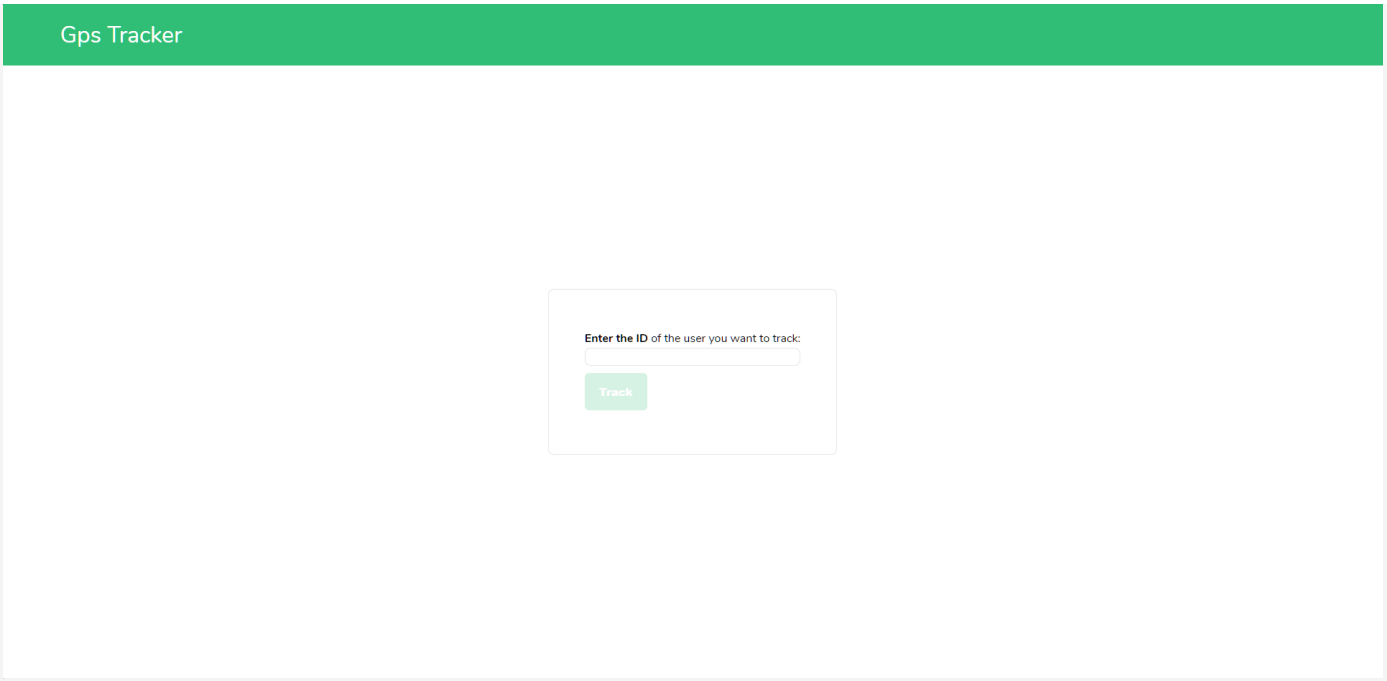


Sharing location

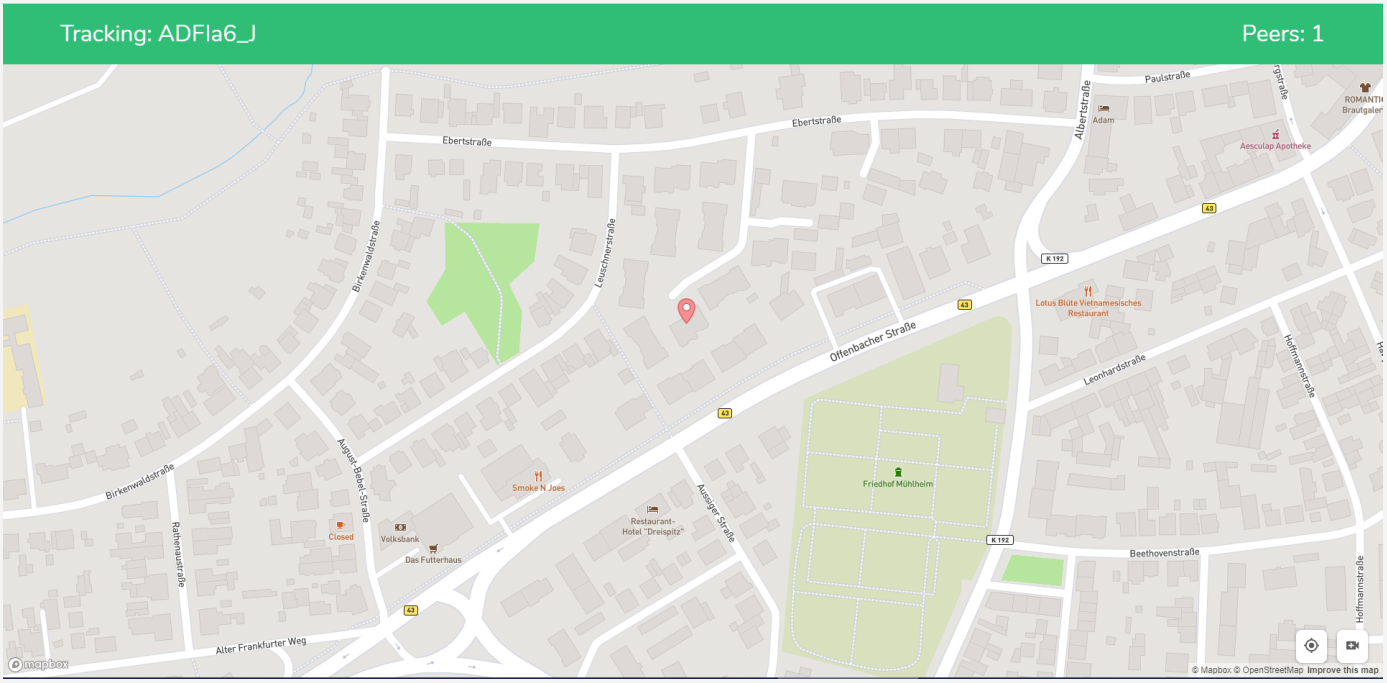
When the mobile app is first started a random id is generated. This id is unique to the mobile app and can be reset by clearing the app's data.



This id can be used to view the GPS location of the person concerned using the standalone web application.

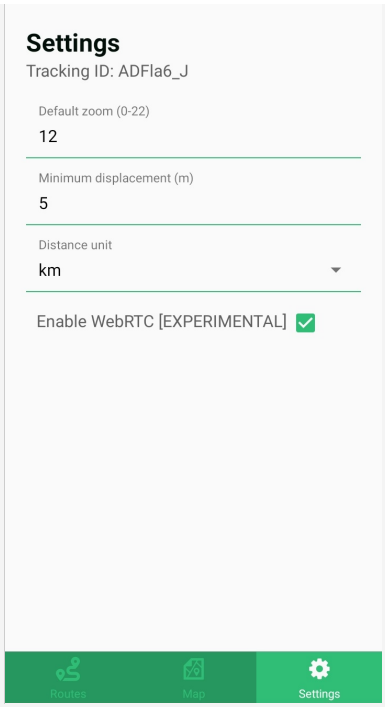


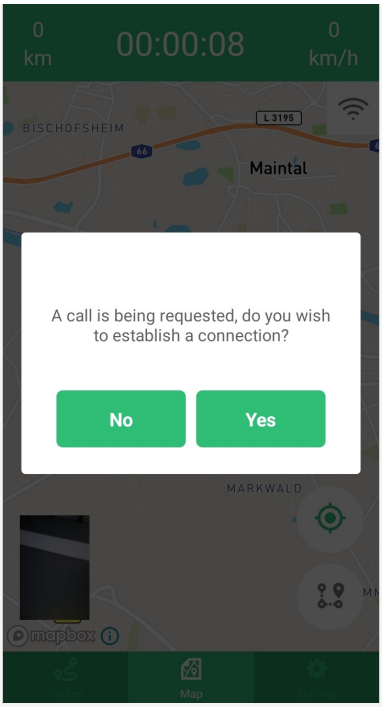
When a valid id has been entered, the tracker's GPS location is shown on an interactive map.



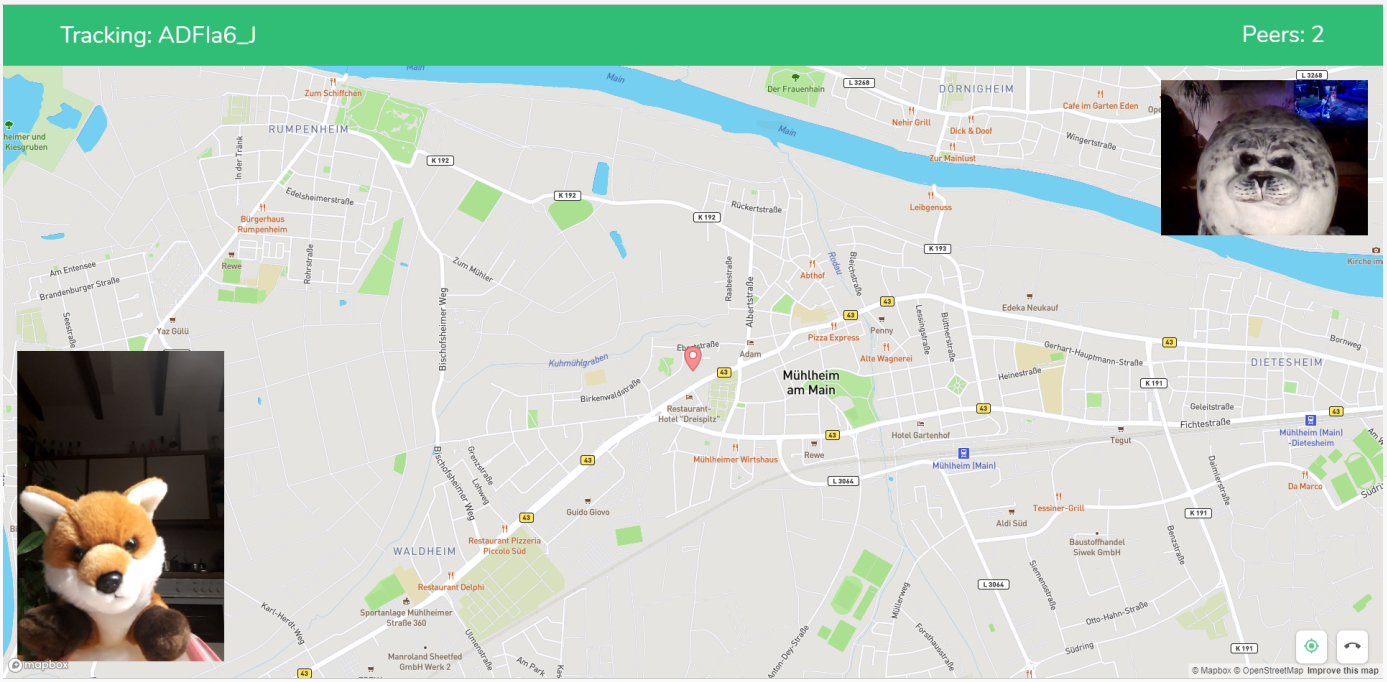
Video call **(max. 2 peers in latest version)**

When the WebRTC option is enabled on the settings menu, the tracker can then request a video call via the web application.





WebRTC uses STUN and/or TURN servers to establish a peer to peer connection between users.



Release

The apk of the GPS Tracker mobile app can be downloaded here.

Since I don't have a computer with macOS I was not able to build this project for iOS. However, if needed, the app can be built for iOS using the source code on Github.

If you wish to track another user's location, the GPS Tracker webapp is hosted on Heroku.

Back to projects