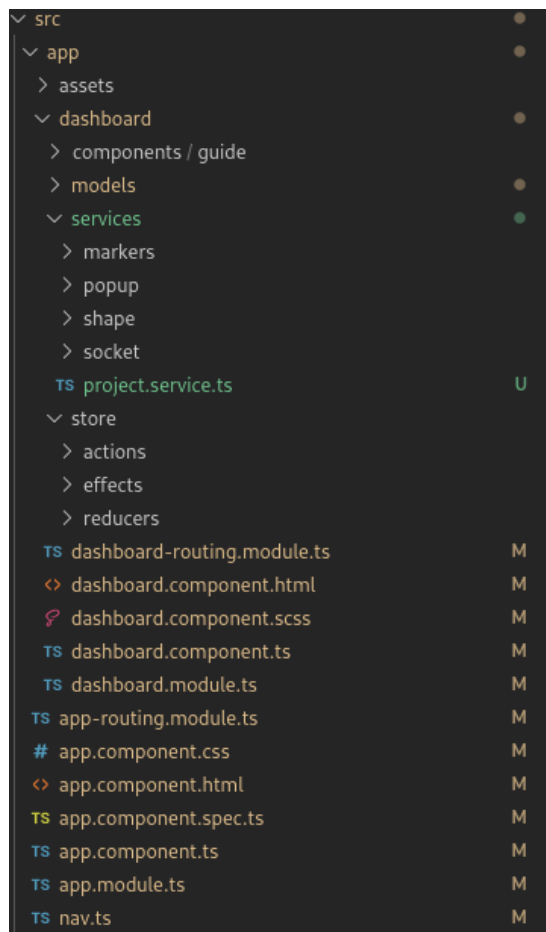


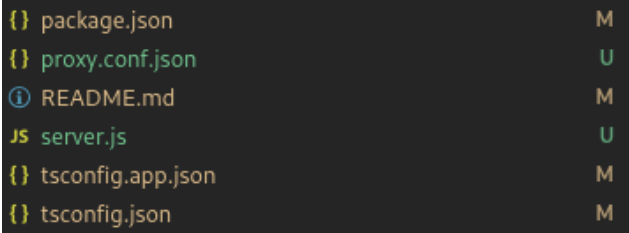
## User Interface Specification Document

- Angular 11.0.5
- NGRX data state management
- PWA
- Socket.io
- Node.js (Express)

## Project Structure



1. Backend services are generated with Nodejs.



{}	package.json	M
{}	proxy.conf.json	U
①	README.md	M
JS	server.js	U
{}	tsconfig.app.json	M
{}	tsconfig.json	M

File **server.js** is used for backend services and its configured to start by default on port 3080. Data are taken from .geojson file and are served to front end.

Cross origin is allowed.

Sockets are initialized as a bridge to communicate with frontend, when a user is connected or not. When user is connected a message is emitted.

A **proxy.conf.json** file is served for interaction between front and back.

In angular.json under the serve part is configured with the proxyConfig key

Application should start when are active with both sides. Scripts pwa and dev are implemented for production use.

In order to serve files in prod mode is used http-server (**lite-server, angular-http-server tried**)

**npm run dev**

**npm start**

2. **PWA** ("@angular/pwa": "^0.1100.5")

**ngsw-config.json** in this configuration file are written resources that are to be cached.

Also API requests are cached.(below dataGroups is served for cache the service from node)

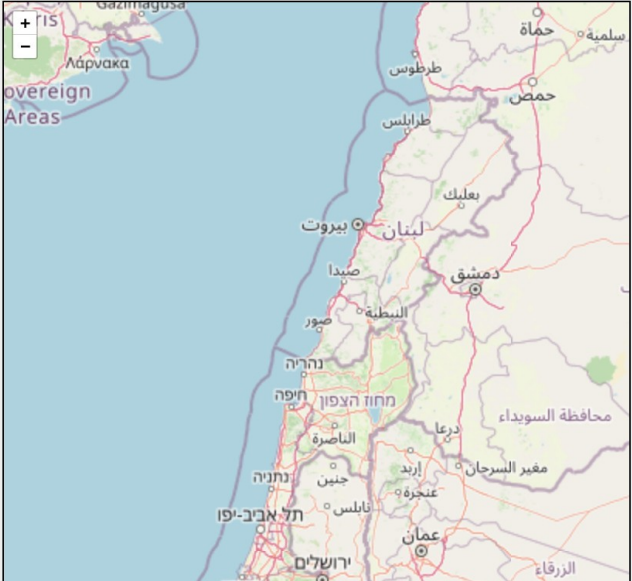
**"installMode": "prefetch"**, is used to fetch any resource for cache since is used with ngrx state

**manifest.webmanifest** – little style for pwa app

Both files are attached at angular.json adding also the attribute **serviceworker** to true. serviceWorker enabling the production configuration in build schematics.

**ServiceWorkerModule** for registering ngsw-config.js (only for production mode).

# Welcome to Cyprus



Elements Console Sources Network Performance Memory Application

Preserve log Disable cache Online

Filter Hide data URLs XHR CSS Img Media Font Doc WS Manifest Other

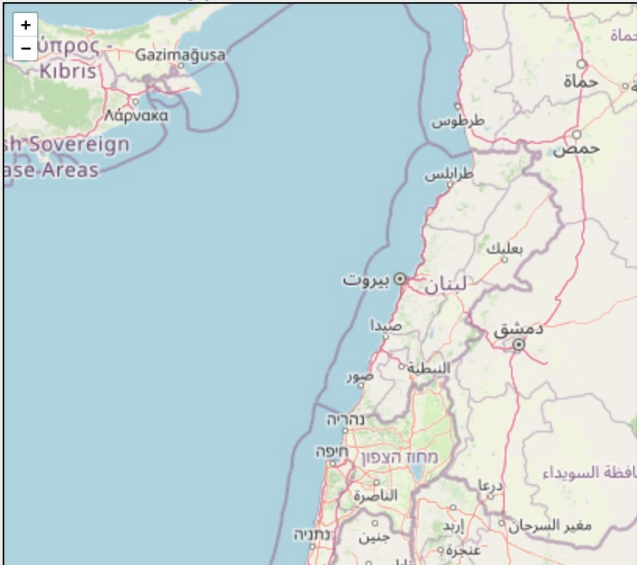
Has blocked cookies Blocked Requests

10 ms	20 ms	30 ms	40 ms	50 ms	60 ms	70 ms	80 ms	90 ms	100 ms

## Online

Recording network activity...  
Perform a request or hit Ctrl+R to record the reload.  
[Learn more](#)

# Welcome to Cyprus



Elements Console Sources Network Performance Memory Application

Preserve log Disable cache Offline

Filter Hide data URLs XHR CSS Img Media Font Doc WS Manifest Other

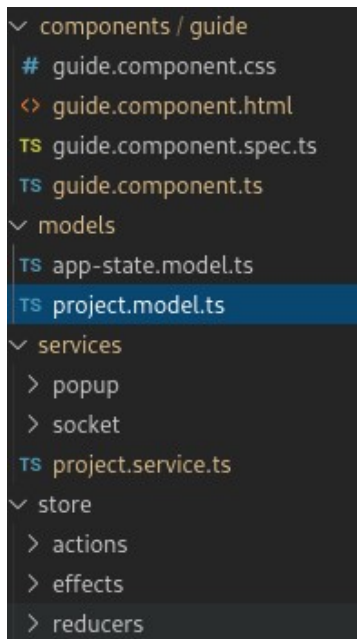
Has blocked cookies Blocked Requests

10 ms	20 ms	30 ms	40 ms	50 ms	60 ms	70 ms	80 ms	90 ms	100 ms

## Offline

Record (Ctrl+E) or reload (Ctrl+R) to display network activity.  
[Learn more](#)

### 3. Map generation through leaflet "leaflet": "^1.7.1", (@ng-maps/google tried)



**Data** are available on store.

**Map** is initialized after view is initialized.

Action to mark the path of map is dispatched on Init. Sockets too.

Inside guide component is constructed map.

Map is initialized with a colorfull path for all the data that are representative.

**Buttons** play /stop are the actions of movement of a car.

**Polyline** is used for the movement and **animationMarker**. (movingMarker tried)

For every node that might stop the car a popup with information of cordinates will be provided.

### 7. Optimization for slow cpu devices

**a) compress the bundle files that are created when building the angular project**

broccoli-webpack-plugin ([@angular-builders/custom-webpack](https://github.com/angular-builders/custom-webpack) tried)

```
"pwa": "ng build --prod && tar -zcvf archive.tar.gz dist/Cyprus/* && http-server -p 8080 dist/Cyprus",
```

*custom-webpack.config.js – a custom webpack is generated to postpone the default one.*

**c) Serve static assets with an efficient cache policy**

nginx configured

```
add_header Cache-Control "public, max-age=31536000";
```