About

This is implementation of the DriveBC Open 511 development assignment. The program retrieves a list of events from the DriveBC Open 511 API and filter them based on the criteria that has been selected, such as: area, severity, event and start date.

Prerequisite:

Download and install latest docker engine and docker compose tool from the docker website for your own OS.

In Windows 10, Docker will require access to the volume, so it needs to be shared. You can either do this in the Shared Drives tab of Docker settings or it will prompt you when you run the compose.

Quick Start:

```
$ cd web-application
$ docker-compose up -d
```

Now the application should be running in your local environment and can be accessed at: http://localhost:4680/

Design Overview:

This is a single page application written in react.js. It runs on node.js and along with react the project makes use of node.js, npm, ES6 and typescript, for easier code maintenance, reuse, compilation and deployment. The react components are lightweight, based on decorator pattern and follow single-responsibility principle. For good UI/UX experience reactstrap and react-data-table-component libraries have been used. Conversion from ES6 to JS code gets done through babel. Webpack-devserver enables hot deploys and makes testing efficient.

Additionally, application is containerized via docker platform. A docker image gets deployed to Docker Hub, where *dcola584* repository has been created for deployment purposes. The testing strategy is currently based on a unit tests only, but this can be improved by adding integration and automation tests. Visual Studio Code was used for code development, run and test.

Assumptions:

- End-user wants to see all events by default.
- End-user wants to see the relevant information only, such as ID, AREA, SEVERITY, EVENT TYPE, START DATE.
- End-user wants to see 10 events per page.
- End-user wants to reset all filters to default state, because of that 'ALL' filter item has been added to each category.
- End-user wants to see a spinner while events are being fetched from the server, as some HTTP requests might take 2-3s to execute.
- End-user wants to filter start date by year only. User will see the results where start_date => than selected year.

Development

Prerequisite:

```
1. Download and install node.js and npm.
2. Install docker and docker compose.
```

Getting Started:

```
$ cd web-application
$ npm install
$ npm start
```

Build:

```
$ npm run-script build
```

Testing:

```
$ npm test
```

Note: it picks up the written unit tests for the react app.

Run:

```
$ npm start
```

Note: this command sets up the environment and starts a server, hot module reloading is available.

Deployment and hosting

Docker platform is used to support cross-platform development and deployment. The containerized application is defined in docker-compose.yml configuration file and gets created by docker-compose tool.

Deployment config structure:

```
| Application | Config Files      |
|-------------|-------------------|
| react.js    | Dockerfile        |
|             | docker-compose.yml |
```

Build and deployment of fresh docker web-app image:

In order to build a fresh web-application docker image and deploy it to the public Docker Hub please do the following:

```
$ docker build -t dcola584/web-app:latest .
$ docker tag dcola584/web-app:latest dcola584/web-app:latest
$ docker push dcola584/web-app:latest
```