myFitMap web app

Development process

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01

Implementing the web app initial structure

Skills used

N.O.

WHY WAS THIS STEP IMPORTANT

*HTML and CSS templates were made available / created by Jonas Schmedtmann.

This step was important to ensure that the initial structure of the web app was properly established (structure on which JavaScript would then be able to work with).

WHAT WAS THE GOAL

Ensuring that all static content for the web app is present in the HTML and CSS documents, with appropriate class names and ids to allow easy reference to it later using JavaScript.

02

Accessing users geolocation

Skills used

Research
Problem solving
Code writing
Debugging

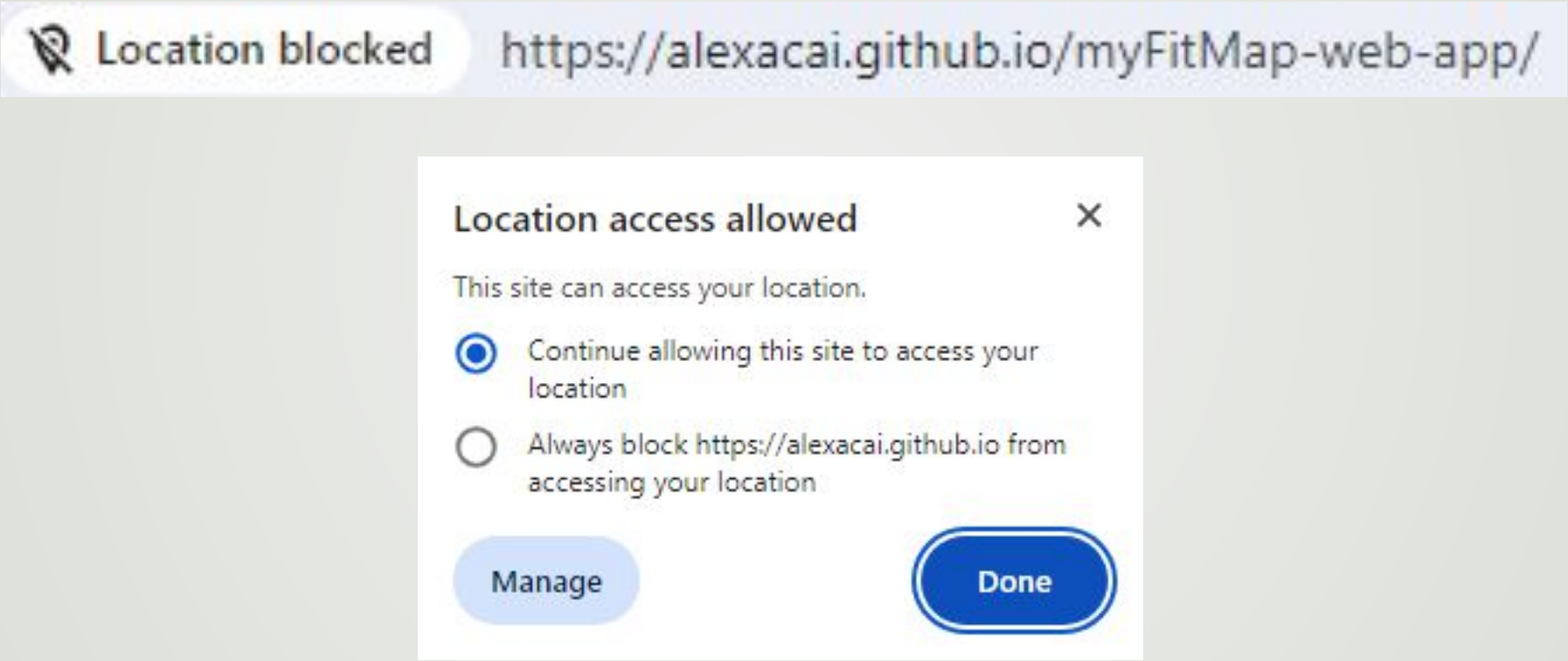
WHY WAS THIS STEP IMPORTANT

This step was important to be able to display the map (later inserted) centered on users' position when the application is opened.

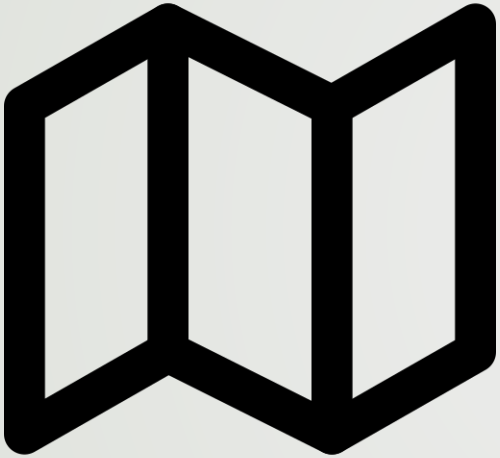
WHAT WAS THE GOAL

- Using the Geolocation API to access users' location, and store their coordinates into variables to eventually be used to center the map on their position.
    - For privacy reasons, users are asked by default for permission to share their location information.

PERMISSION REQUESTED FOR LOCATION



03



Adding the main map interface

Skills used

Research
Problem solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

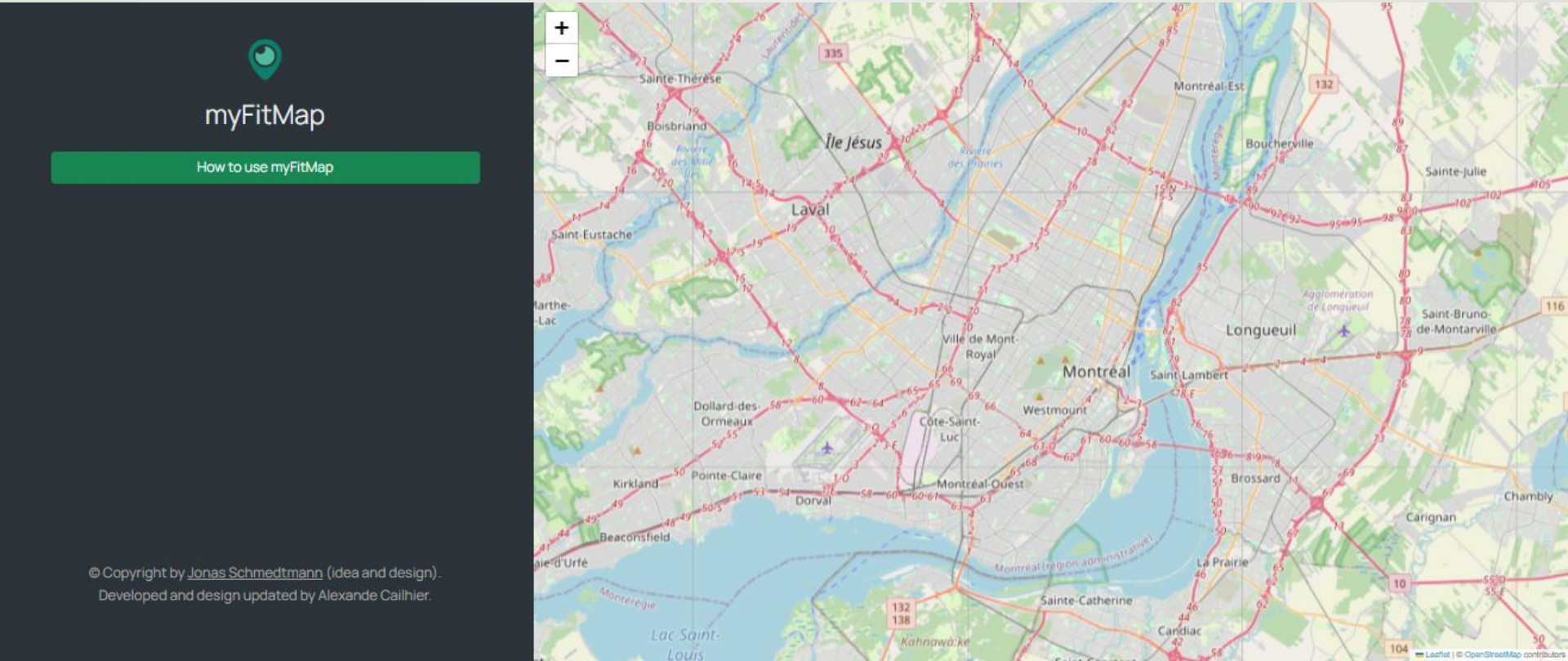
This step was important because the map represents the main element of this application. This is the UI element that users interact the most with.

WHAT WAS THE GOAL

Using Leaflet library to display an *OpenStreetMap* map within the web application, and center it on each user location when the app opens by using the geographic coordinates accessed in the previous step.

- Leaflet is a JavaScript library for interactive maps, working efficiently across all major desktop and mobile platforms.

INITIAL MAP DISPLAYED



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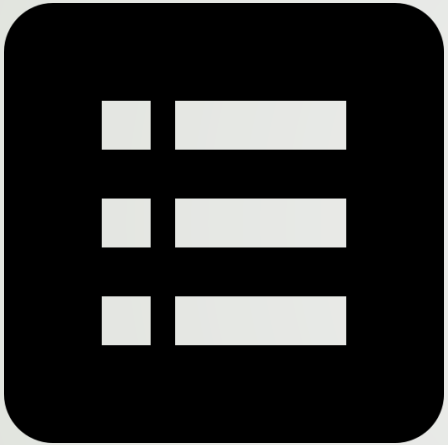


Displaying the workouts form

Skills used

Research
Problem solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

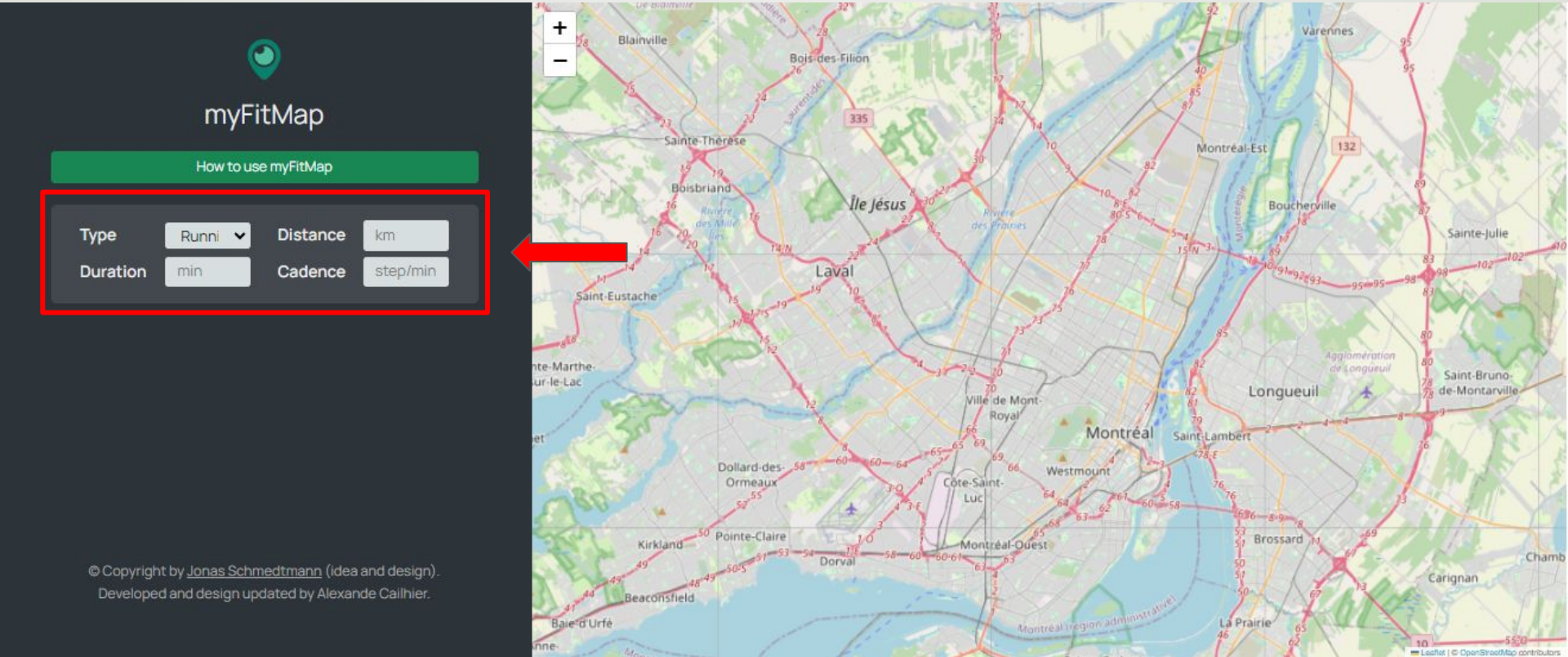
This step was important to allow users to save their workouts in the application, and then display them textually and visually on the map.

WHAT WAS THE GOAL

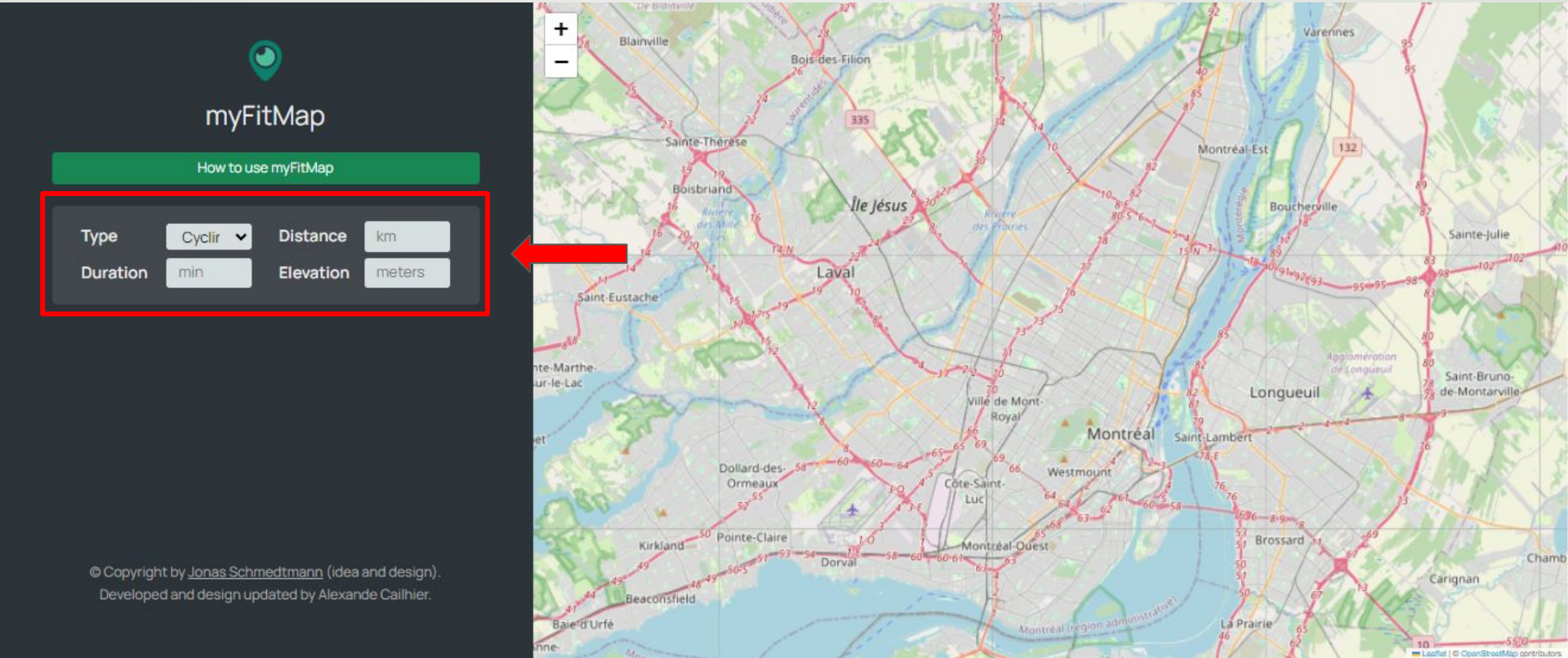
Providing users a simple form to allow them to record their workouts each time they click on a location on the map, using DOM manipulations.

Offering two types of forms with different input fields: one for running workouts and one for cycling workouts.

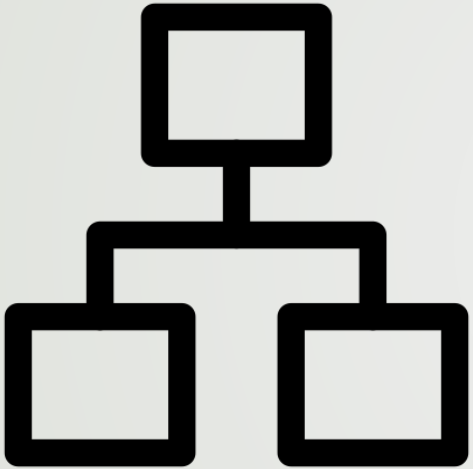
FORM FOR RUNNING WORKOUTS



FORM FOR CYCLING WORKOUTS



05



Structuring the project architecture

Skills used

Research
Problem solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

At this point in the development process, many initial codes were implemented, but many new features still needed to be added later on. It was therefore necessary at this point to take some time and structure the whole code properly before it became too large, following the OOP concept.

WHAT WAS THE GOAL

Creating an ***App*** class, containing the main features/functions of the application by moving existing codes & creating new ones in it to:

- Get users' location
- Load the map
- Show the workout form to users
- Render the saved workouts on the sidebar of the page and on the map with pins/markers
- Allow users to move to workouts locations on the map when clicking on workouts on the sidebar of the page

WHAT WAS THE GOAL (SUITE)

Creating a ***Workout***, ***Running*** and ***Cycling*** class.

- The ***Workout*** class is the parent class. It contains the 3 properties shared by the running workouts (Running class) and the cycling workouts (Cycling class):
  - Coordinates coming from the users' click on the map
  - Workout distance
  - Workout duration

  *No workout objects are created directly from the ***Workout*** class.

- The ***Running*** class inherits properties from the ***Workout*** class and includes its specific property for running workouts (cadence). Running workouts objects are created from this class.

- The ***Cycling*** class inherits properties from the ***Workout*** class and includes its specific property for cycling workouts (elevation). Cycling workouts objects are created from this class.

06

Creating new workouts and **displaying** the workouts on the map

Skills used

Research
Problem solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

Being able to create personalized workouts, and display them in a list on the sidebar of the page as well as on the map where they took place, was the main feature of the application to be implemented.

WHAT WAS THE GOAL

Allowing users to create their workouts using the form, and :

- Validate the input data (only accepting positive numbers in the form)
- Create a new object for each new workout created by users, using the ***Running*** or ***Cycling*** class
- Render the workouts in a list of items on the left side of the page
- Render the workouts on the map where they took place

WHAT WAS THE GOAL (SUITE)

In order to implement all these different functionalities, 3 main functions were created:

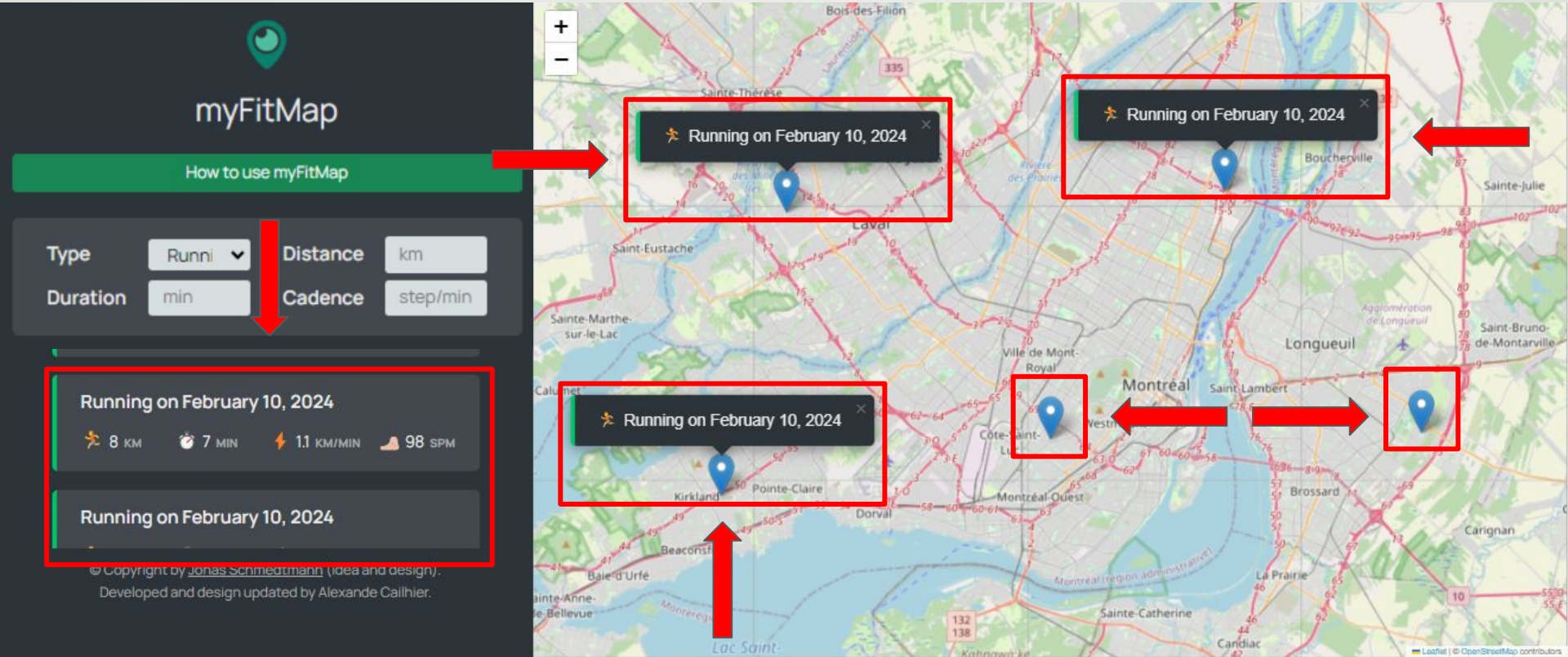
- One function to handle the creation of the workouts: ***_newWorkout***
  - This function handles input validation, and object creation based on the type of workout (running or cycling)
- One function to display the workout created on the left side of the page: ***_renderWorkout***
  - This function uses DOM manipulations to change dynamically the UI after each workout created
- One function to display the workout on the map with pins/markers: ***_renderWorkoutMarker***
  - This function primarily utilizes code taken directly from the Leaflet library documentation. Additionally, the content of the popup over each pin/marker has been modified to display the type of workout and the date.

CODE EXAMPLE TO CREATE OBJECTS

```
// If running workout, create Running object
if (type === 'running') {
    const cadence = Number(inputCadence.value);
    if (!validNumberInput(distance, duration, cadence) || !numberAllPositive(distance, duration, cadence))
        return alert('Inputs have to be a positive number');
    };
    workout = new Running([lat, lng], distance, duration, cadence);
};

// If cycling workout, create Cycling object
if (type === 'cycling') {
    const elevation = Number(inputElevation.value);
    if (!validNumberInput(distance, duration, elevation) || !numberAllPositive(distance, duration)) {
        return alert('Inputs have to be a positive number');
    };
    workout = new Cycling([lat, lng], distance, duration, elevation);
};
```

WORKOUTS DISPLAYED (LIST AND ON MAP)



07

Moving the map over the workouts

Skills used

Research
Problem solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

This step was not essential, but certainly increased the user experience, considering users can have different workouts over a wide region.

WHAT WAS THE GOAL

Implementing a feature that move the map to the position of the workout that was click in the left sidebar. Again, this feature was added using tools taken from Leaflet library documentation.

BEFORE CLICKING ON THE WORKOUT IN THE SIDEBAR

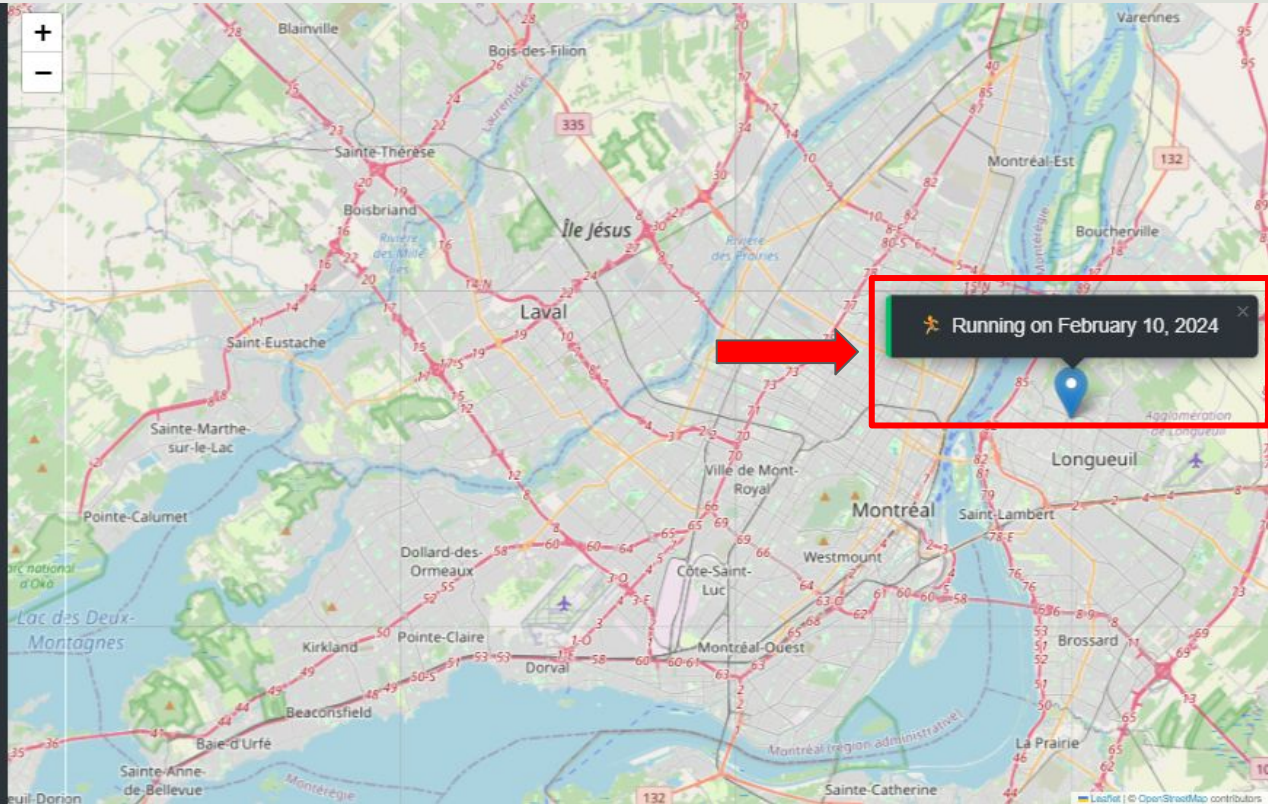
myFitMap

How to use myFitMap

Remove workouts

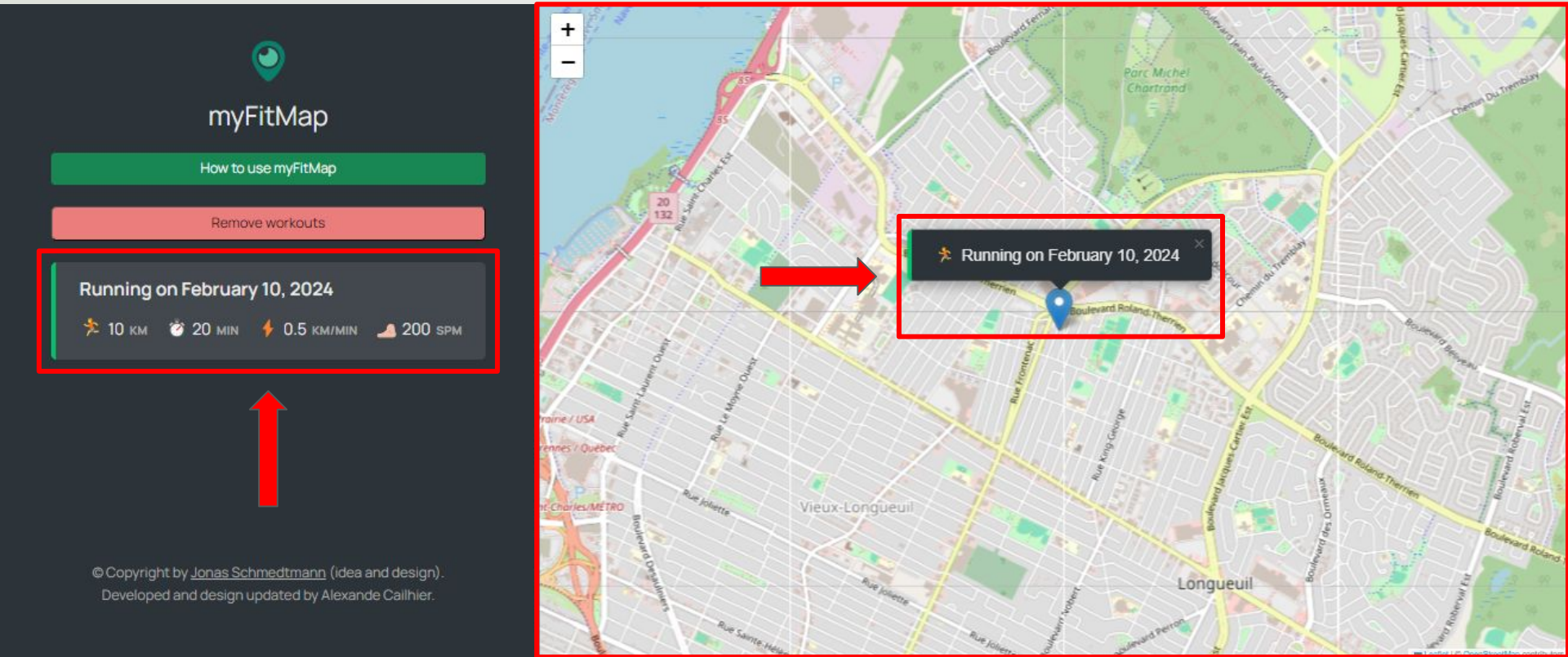
Running on February 10, 2024

10 KM 20 MIN 0.5 KM/MIN 200 SPM

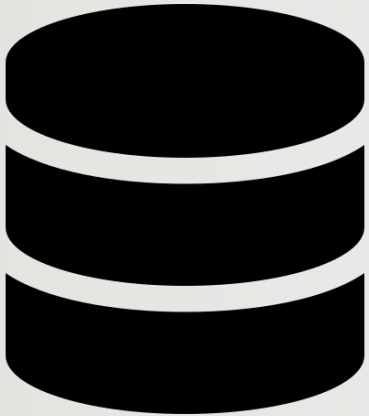


AFTER CLICKING ON THE WORKOUT IN THE SIDEBAR

(VIEW CENTERED ON THE WORKOUT WITH GREATER ZOOM)



08



Implementing *localStorage*

Skills used

Research
Problem solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

This step was important to ensure that users' created workouts persist between sessions, allowing them to access previously created workouts whenever they return to the web app.

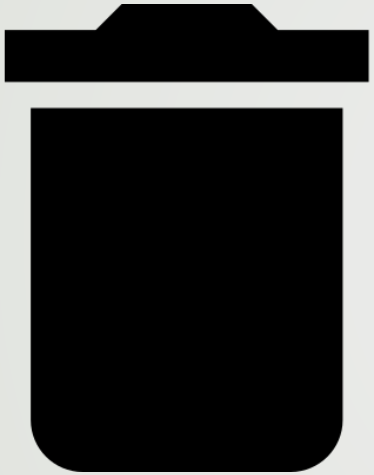
WHAT WAS THE GOAL

Adding the data for each newly created workout inside each user localStorage.

Loading the workout data from localStorage each time the web application is opened (if any), and then display those workouts in the sidebar, and on the map.

```
_setLocalStorage() {
    localStorage.setItem('workouts', JSON.stringify(this.#workout));
};
```

09



Implementing final supporting features

Skills used

Code writing

WHY WAS THIS STEP IMPORTANT

This step was important to make the web application easier to use for users, by adding a few simple additional features.

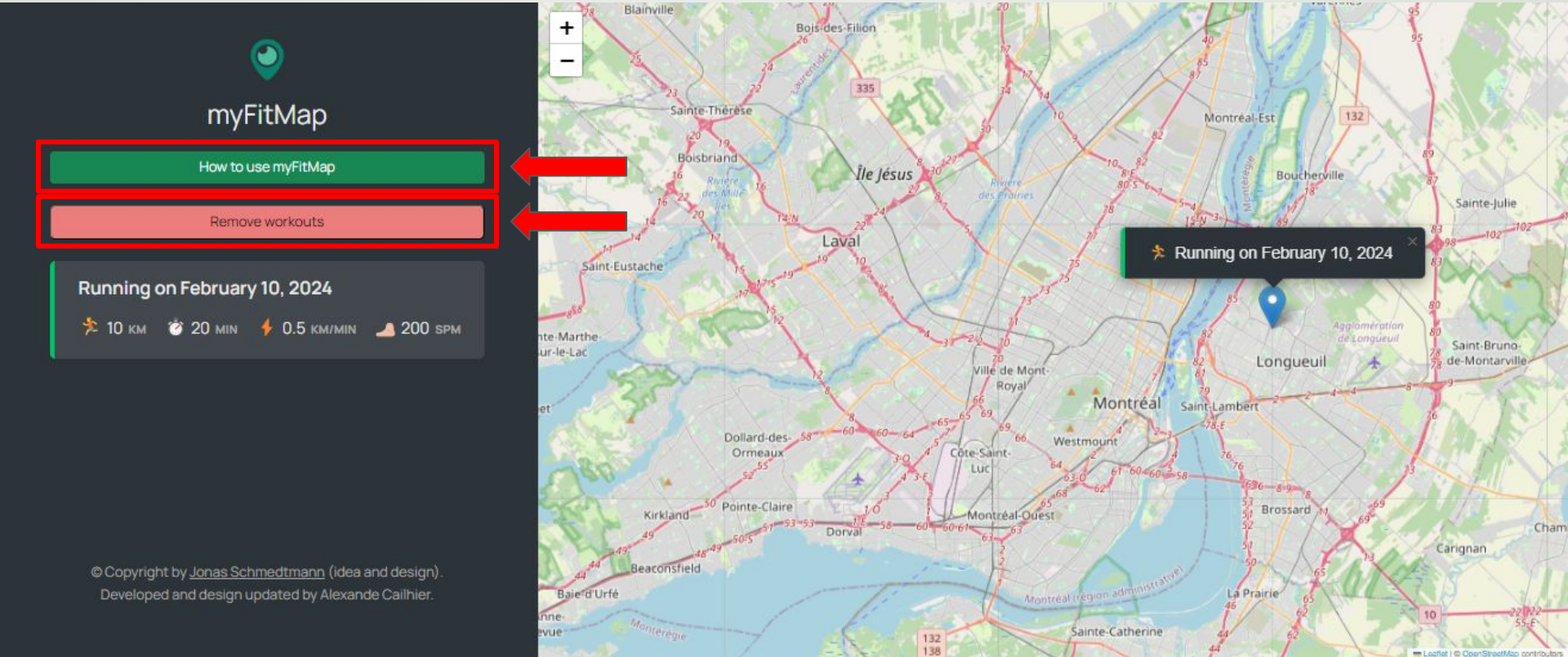
WHAT WAS THE GOAL

Adding a modal explaining how to use myFitApp (using Bootstrap).

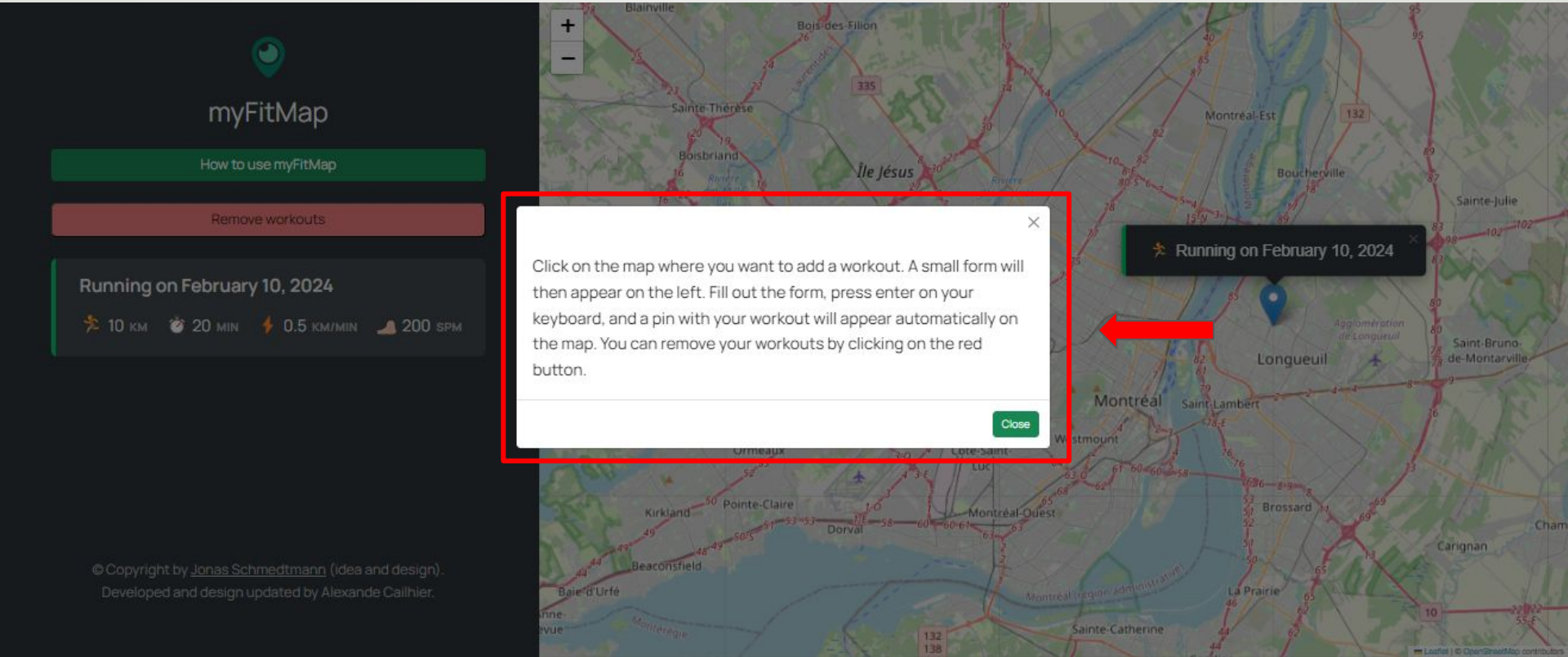
Adding a button allowing users to remove their workouts (using Bootstrap).

- To remove all workouts, a logic to clear users' *localStorage* on the myFitApp web page has been linked to the remove button.

INSTRUCTION BUTTON & REMOVE BUTTON



INSTRUCTION MODAL



10

Finalizing code refactoring and **running** final tests

Skills used

Code writing

WHY WAS THIS STEP IMPORTANT

When possible, it is good practice to refactor codes. When there are a lot of duplicate codes, and some functionalities need to be changed for example, multiple identical updates may be necessary across various locations and files, leading to a potentially lengthy and error-prone process. Code refactoring helps prevent this by making the code cleaner, more logical, and more concise.

WHAT WAS THE GOAL

Replacing some previously duplicated lines of code to accomplish the same actions, but with fewer code lines, thus significantly reducing the length of the code.

Testing the web app with all possible scenarios that users might encounter to ensure everything works as expected.

Adding comments where necessary.

11

github-pages

Deploying the web app online

Skills used

N.O.

WHY WAS THIS STEP IMPORTANT

This step was important to make the myFitMap web app publicly available by hosting it on GitHub Pages (gh-pages).

12

README.md

Completing the README document

Skills used

Communication
Content writing

WHY WAS THIS STEP IMPORTANT

Ensure the project is well documented and easily accessible by anyone interested.

WHAT WAS THE GOAL

Updating and completing the README file located in the *myFitMap-web-app* Github repository. The goal was to ensure that all relevant information regarding this project is accessible under these three categories:

- Project description
- User interface
- Technical aspects

README SAMPLE - FULL VERSION ON GITHUB

README

myFitMap web app

Table of content

Project description

This web application was created to allow users to record, in a list and on a map, all the workouts they have performed, along with their location.

To do so, users can click anywhere on the map and add a workout they did there, whether it's a run or a bike ride. They can then indicate the number of kilometers they did and the duration, as well as the pace (for run) or the elevation covered (for bike).

User interface

The interface is divided into two distinct parts.