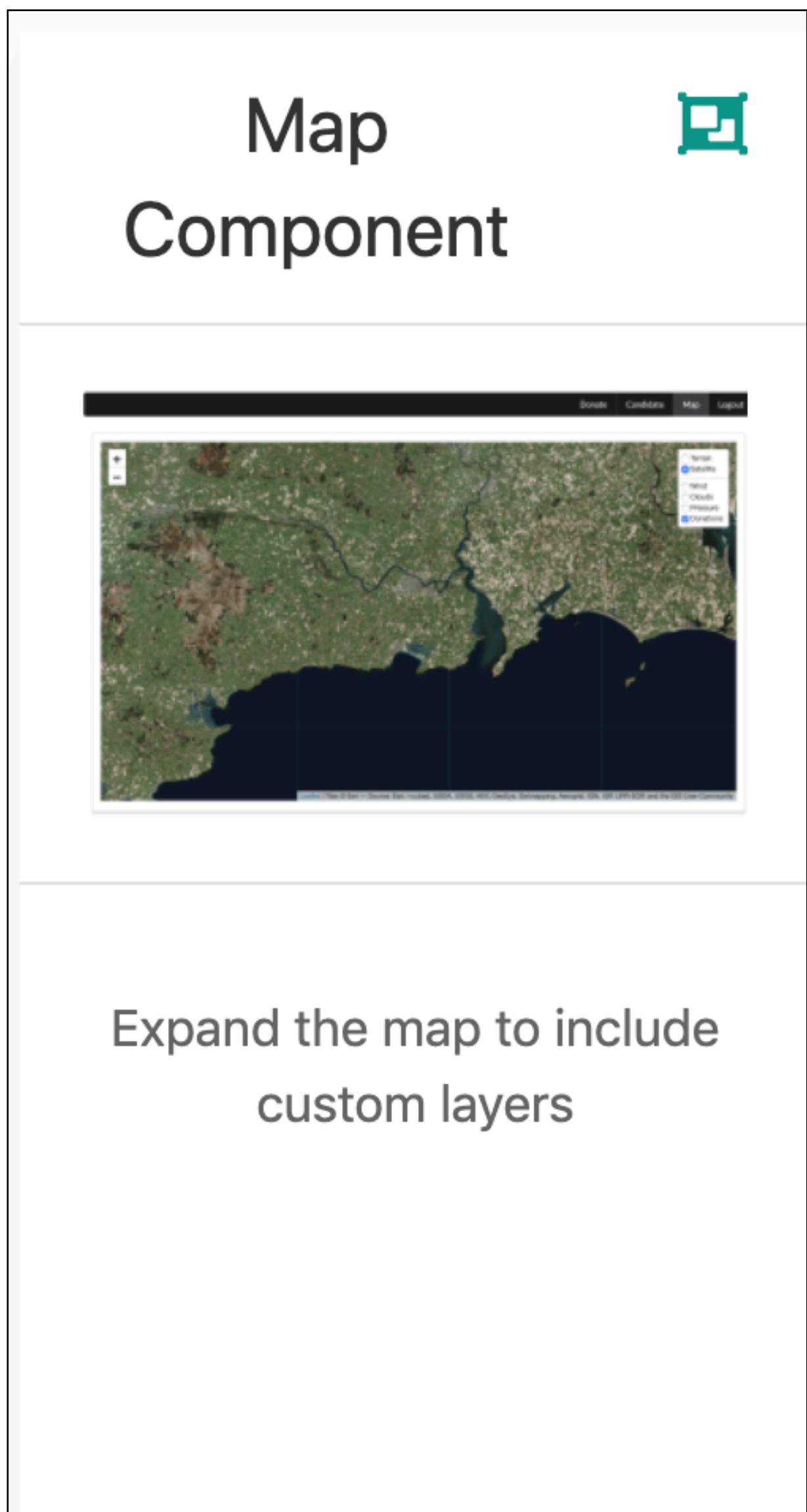


Map Component



Expand the map to include
custom layers



The image shows a map of Ireland with various geographical features. In the top left corner, there is a zoom control with '+' and '-' buttons. The map itself displays terrain, roads, and water bodies. A legend on the right side lists several options: Terrain (selected), Satellite, Wind, Clouds, Pressure, and Donations. Two blue arrows point from text boxes to the legend: one arrow points to the 'Terrain' entry, and another points to the 'Donations' entry.

Base Layers

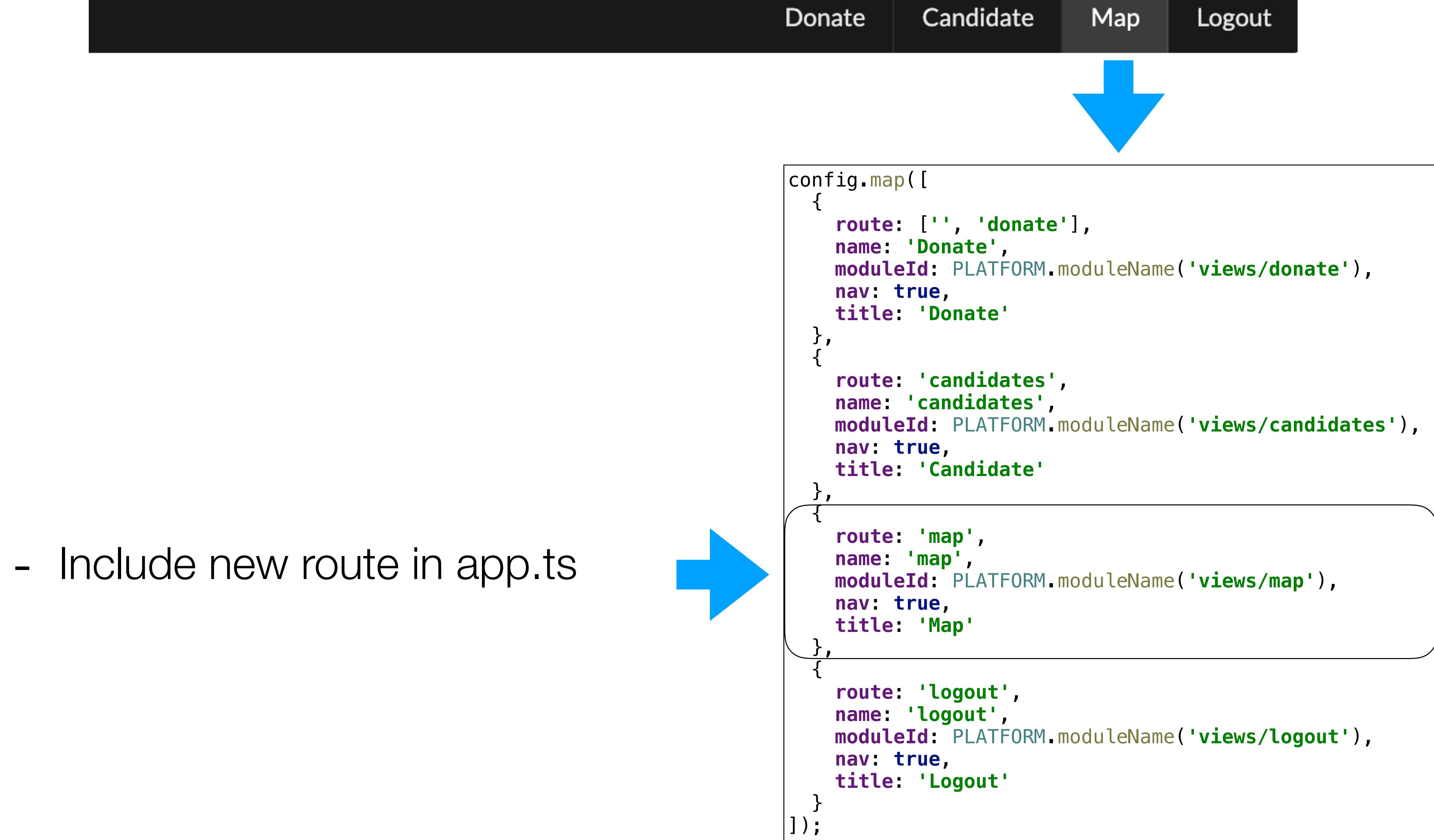
- Only one can be selected

Overlays

- check box to enable/disable some/all

Leaflet | Map data: © OpenStreetMap contributors, SRTM | Map style: © OpenTopoMap (CC-BY-SA)

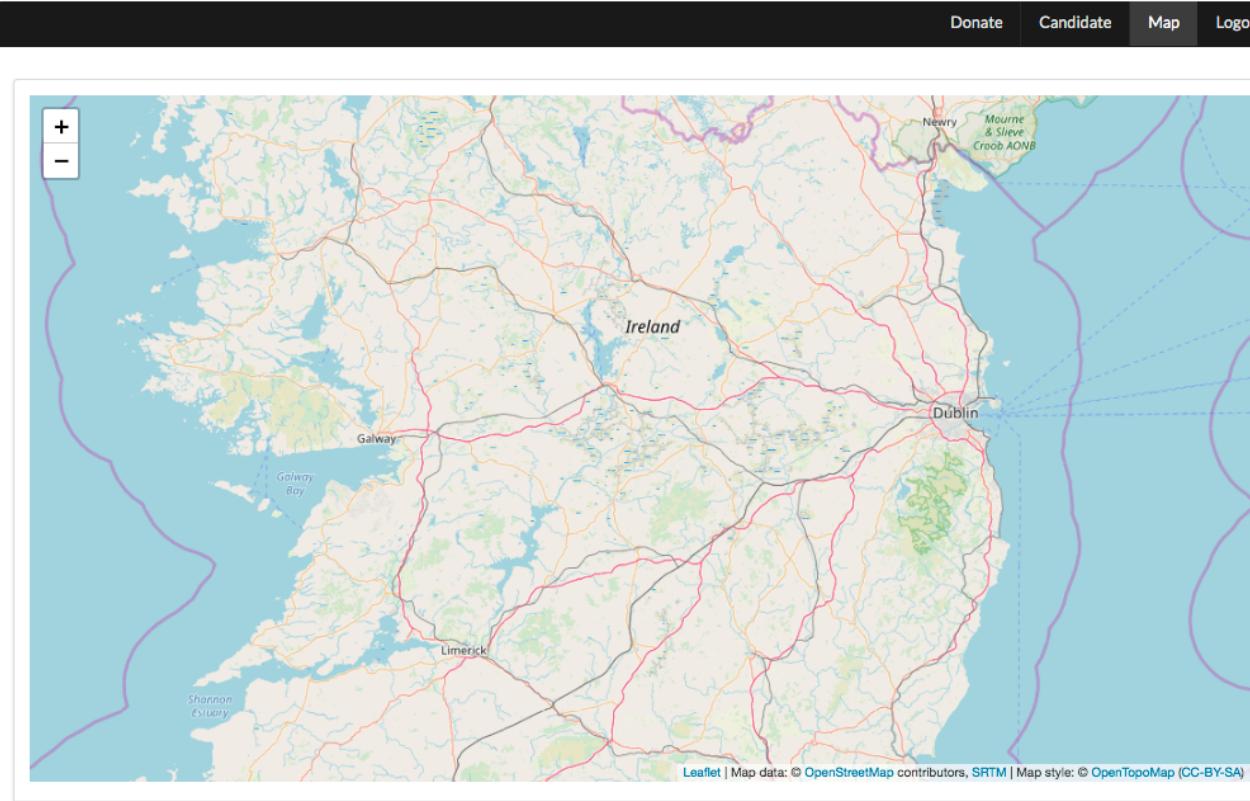
Map View Component - Route



Map View Component - Custom Element

src/views/map.html

```
<template>
  <div class="ui stacked segment">
    <div id="${mapId}" class="ui embed" style="height:${mapHeight}px; z-index: 0"></div>
  </div>
</template>
```



View

src/views/map.ts

```
import { LeafletMap } from '../services/leaflet-map';
import { DonationService } from '../services/donation-service';
import { inject } from 'aurelia-framework';

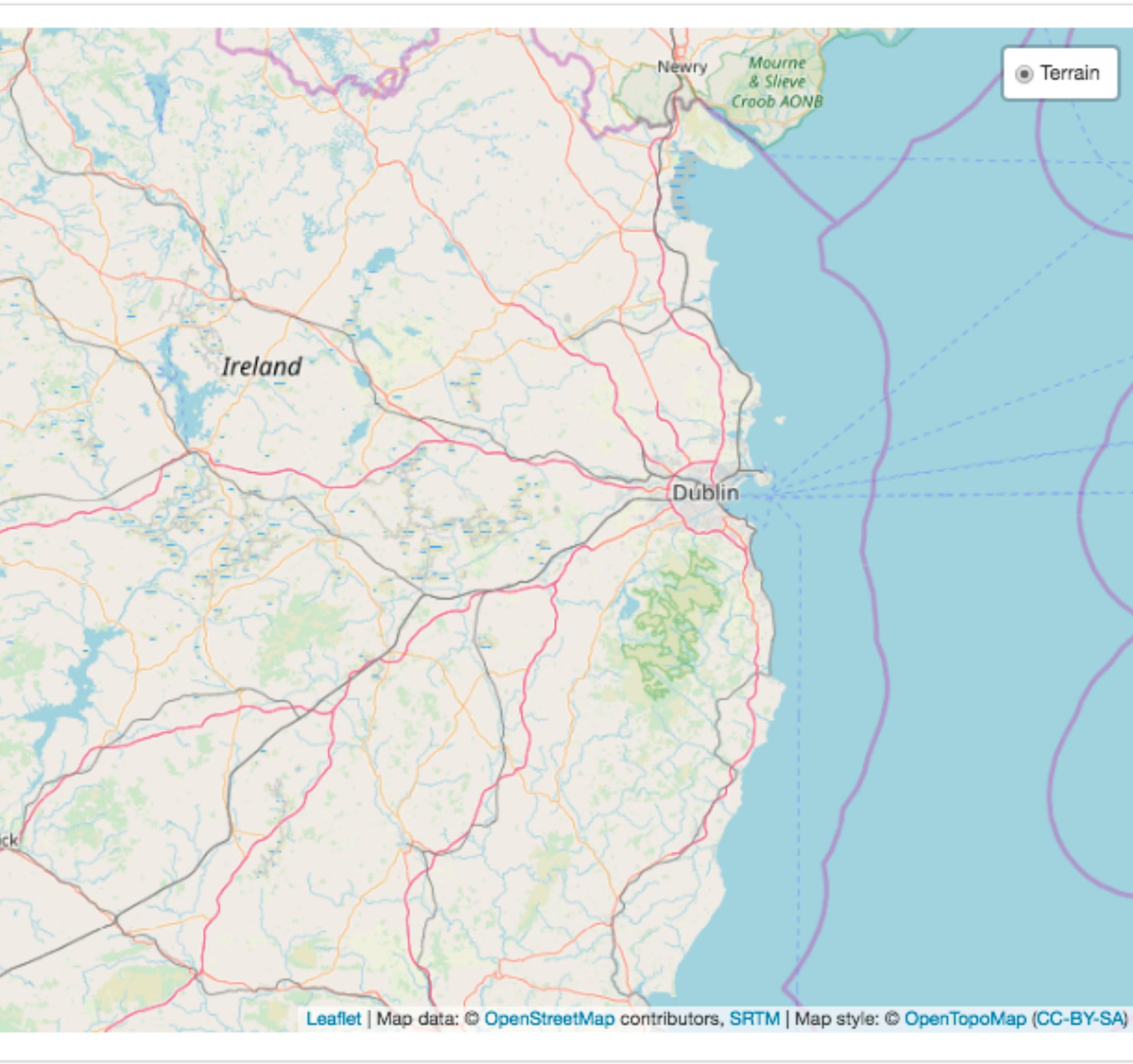
@inject(DonationService)
export class Map {
  mapId = 'main-map';
  mapHeight = 600;
  map: LeafletMap;

  constructor(private ds: DonationService) {}

  attached() {
    const mapConfig = {
      location: { lat: 53.2734, lng: -7.7783203 },
      zoom: 8,
      minZoom: 1
    };
    this.map = new LeafletMap(this.mapId, mapConfig, 'Terrain');
    this.map.showZoomControl();
  }
}
```

View
Model

LayerControl



Default Layer



```
...
  this.map = new LeafletMap(this.mapId, mapConfig, 'Terrain');
  this.map.showZoomControl();
  this.map.showLayerControl();
}
...
```

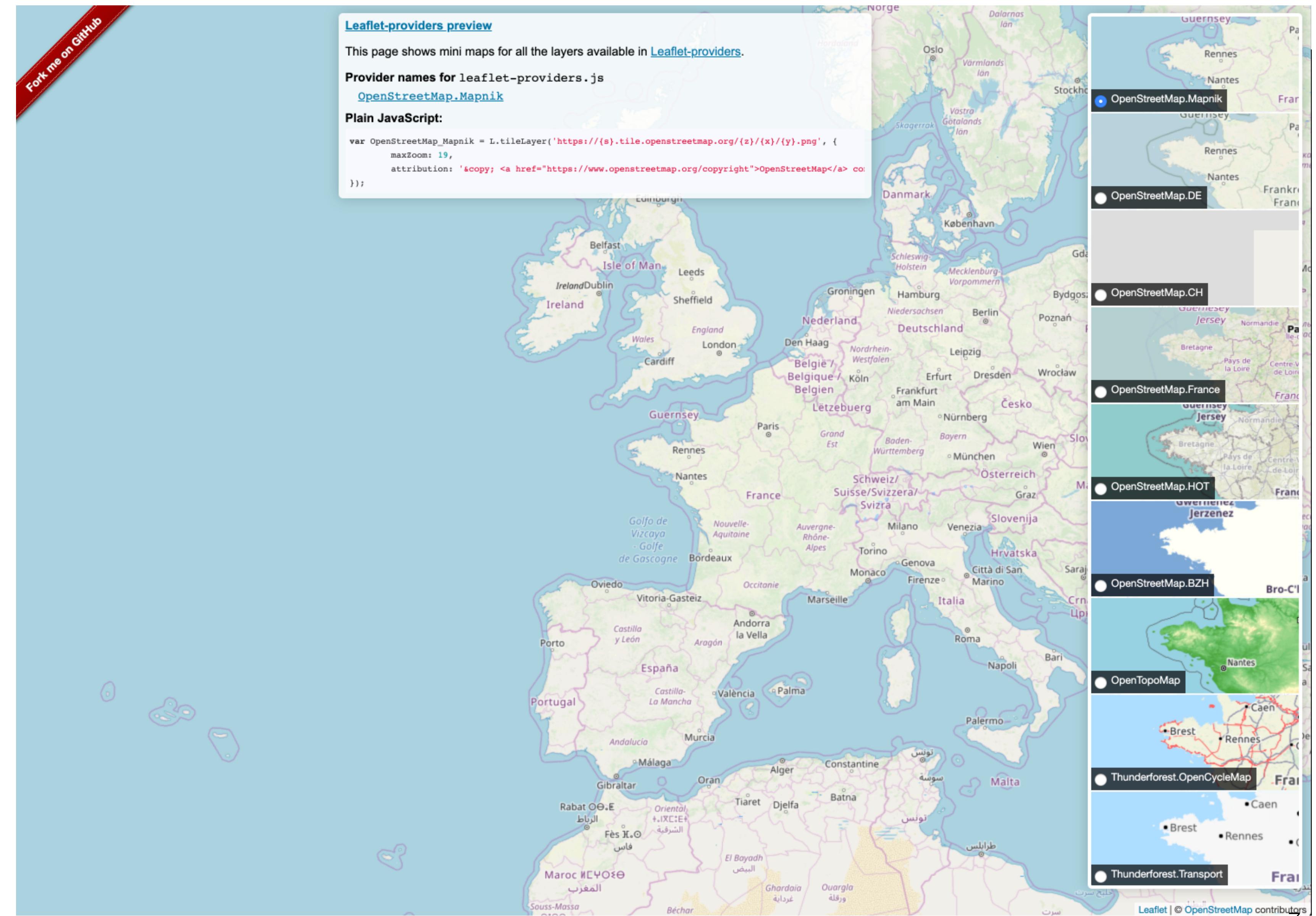
src/services/leaflet-map.ts

```
baseLayers = {
  Terrain: L.tileLayer('https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {
    maxZoom: 17,
    attribution:
      'Map data: &copy; <a href="https://www.openstreetmap.org/copyright">OpenStreetMa
  })
};
```

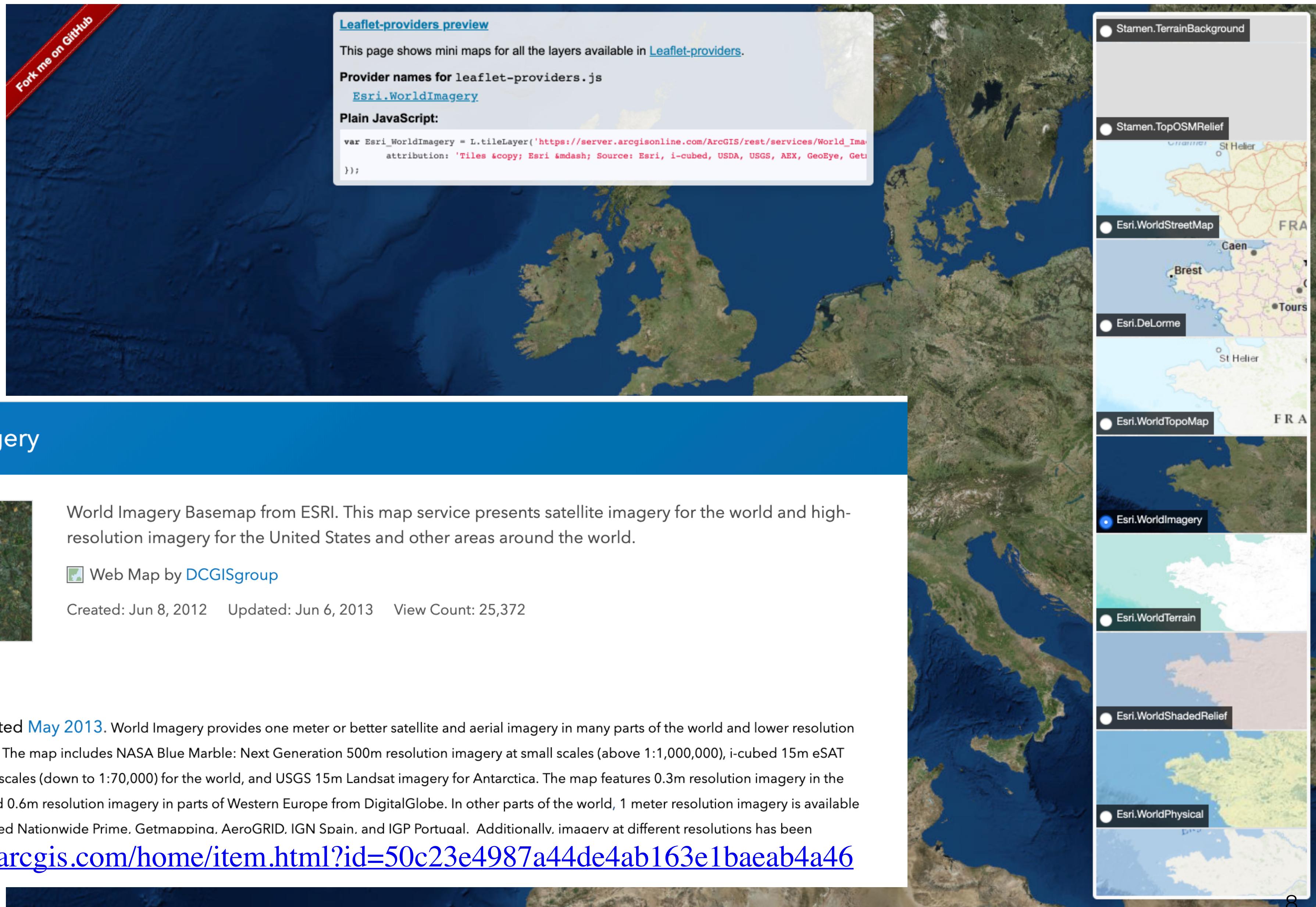
Base Layers defined as objects in
leaflet-map.ts

<https://leaflet-extras.github.io/leaflet-providers/preview/>

- Demonstration of free base layers compatible with Leaflet
- (Some require API key)



Satellite Imagery Layer



The image shows a satellite imagery map of Europe centered on the British Isles and Northern France. A red diagonal banner in the top-left corner of the map area says "Fork me on GitHub". To the right of the map is a sidebar titled "Leaflet-providers preview" which lists various map providers:

- Stamen.TerrainBackground
- Stamen.TopOSMRelief
- Esri.WorldStreetMap
- Esri.DeLorme
- Esri.WorldTopoMap
- Esri.WorldImagery
- Esri.WorldTerrain
- Esri.WorldShadedRelief
- Esri.WorldPhysical

Below the map, a blue header bar reads "Esri World Imagery". Underneath it, there's a thumbnail image of a satellite view of a coastal area, followed by a description of the map service.

Esri World Imagery

World Imagery Basemap from ESRI. This map service presents satellite imagery for the world and high-resolution imagery for the United States and other areas around the world.

 Web Map by [DCGISgroup](#)

Created: Jun 8, 2012 Updated: Jun 6, 2013 View Count: 25,372

Description

This map was last updated [May 2013](#). World Imagery provides one meter or better satellite and aerial imagery in many parts of the world and lower resolution satellite imagery worldwide. The map includes NASA Blue Marble: Next Generation 500m resolution imagery at small scales (above 1:1,000,000), i-cubed 15m eSAT imagery at medium-to-large scales (down to 1:70,000) for the world, and USGS 15m Landsat imagery for Antarctica. The map features 0.3m resolution imagery in the continental United States and 0.6m resolution imagery in parts of Western Europe from DigitalGlobe. In other parts of the world, 1 meter resolution imagery is available from GeoEye IKONOS, i-cubed Nationwide Prime, Getmapping, AeroGRID, IGN Spain, and IGP Portugal. Additionally, imagery at different resolutions has been

[co](https://www.arcgis.com/home/item.html?id=50c23e4987a44de4ab163e1baeab4a46) <https://www.arcgis.com/home/item.html?id=50c23e4987a44de4ab163e1baeab4a46>

Leaflet | Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, AeroGRID, IGN, IGP, UPR-EGP, and the GIS User Community

From <https://leaflet-extras.github.io/leaflet-providers/preview/>

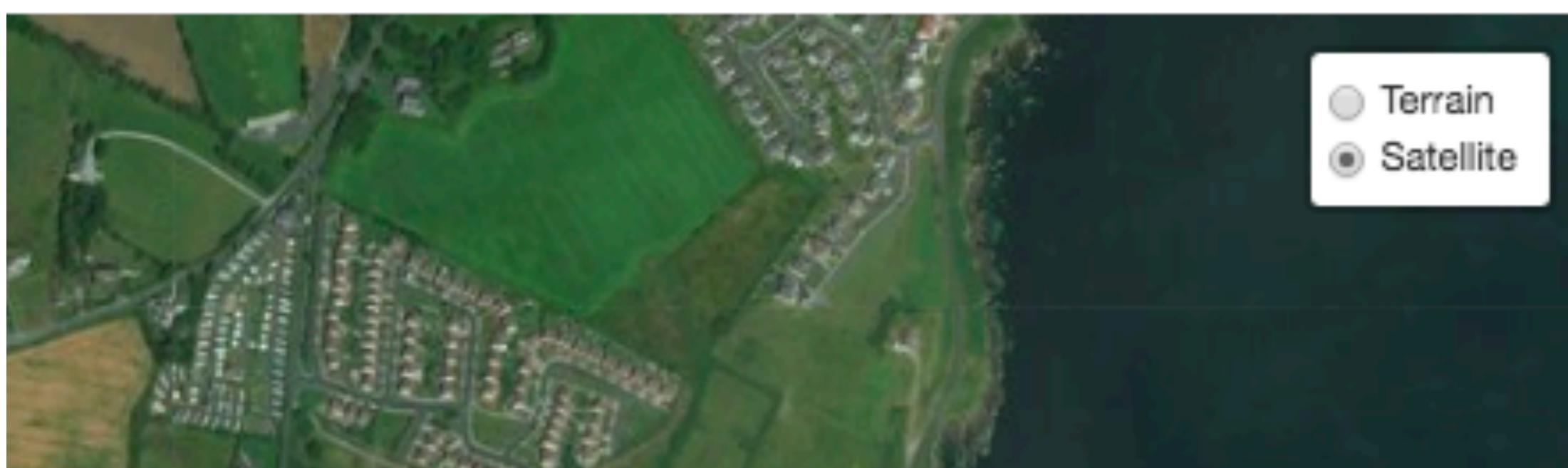
```
var Esri_WorldImagery = L.tileLayer('https://server.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer/tile/{z}/{y}/{x}', {
  attribution: 'Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community'
});
```

- Adjusted to object literal format

```
Satellite: L.tileLayer(
  'https://server.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer/tile/{z}/{y}/{x}',
  {
    attribution:
      'Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community'
  }
);
```

- Embed in LeafletMap class

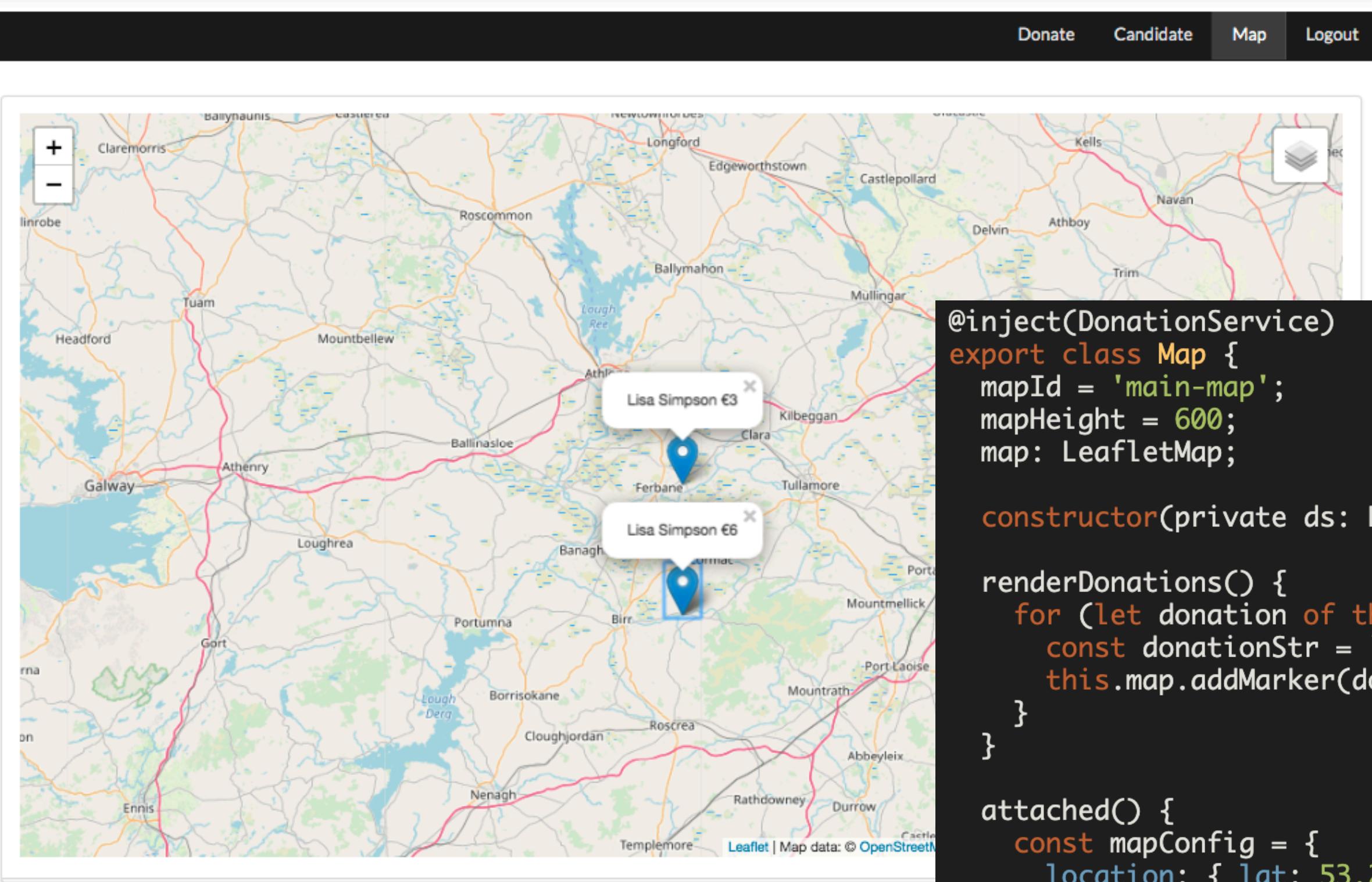
```
baseLayers = {
  Terrain: L.tileLayer('https://s.tile.openstreetmap.org/{z}/{x}/{y}.png', {
    maxZoom: 17,
    attribution:
      'Map data: © <a href="https://www.openstreetmap.org/copyright">OpenStreetMap</a> contributors, <a href="http://viewfinderpanoramas.org">SRTM</a>',
  }),
  Satellite: L.tileLayer(
    'https://server.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer/tile/{z}/{y}/{x}',
    {
      attribution:
        'Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community'
    }
  );
};
```



Adding Satellite Layer

Donations Markers + Popups

- Call renderDonations when ‘attached’
- Fetch donations from DonationService and add markers

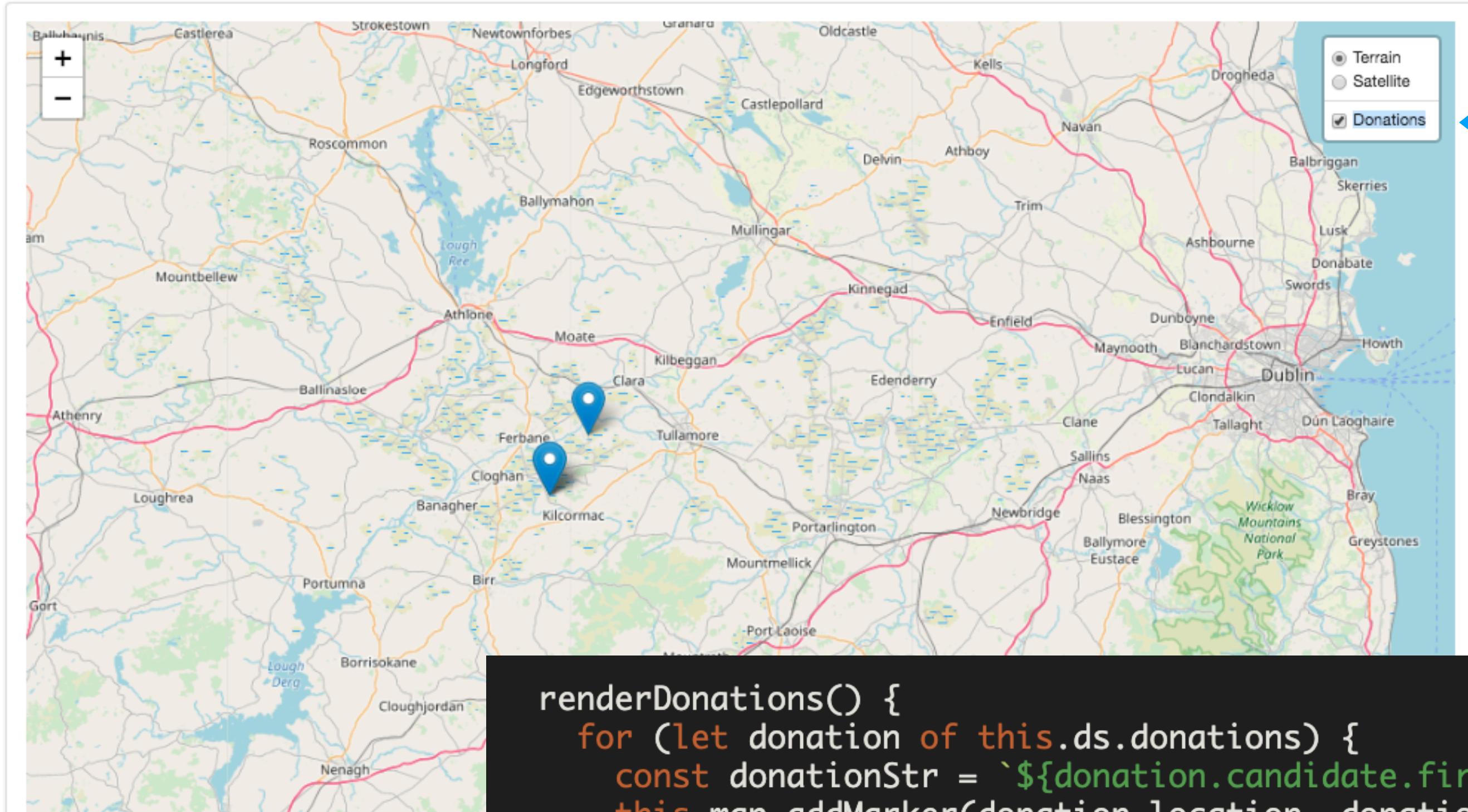


```
@inject(DonationService)
export class Map {
    mapId = 'main-map';
    mapHeight = 600;
    map: LeafletMap;

    constructor(private ds: DonationService) {}

    renderDonations() {
        for (let donation of this.ds.donations) {
            const donationStr = `${donation.candidate.firstName} ${donation.candidate.lastName} €${donation.amount.toString()}`;
            this.map.addMarker(donation.location, donationStr);
        }
    }

    attached() {
        const mapConfig = {
            location: { lat: 53.2734, lng: -7.7783203 },
            zoom: 8,
            minZoom: 1
        };
        this.map = new LeafletMap(this.mapId, mapConfig, 'Terrain');
        this.map.showZoomControl();
        this.map.showLayerControl();
        this.renderDonations();
    }
}
```



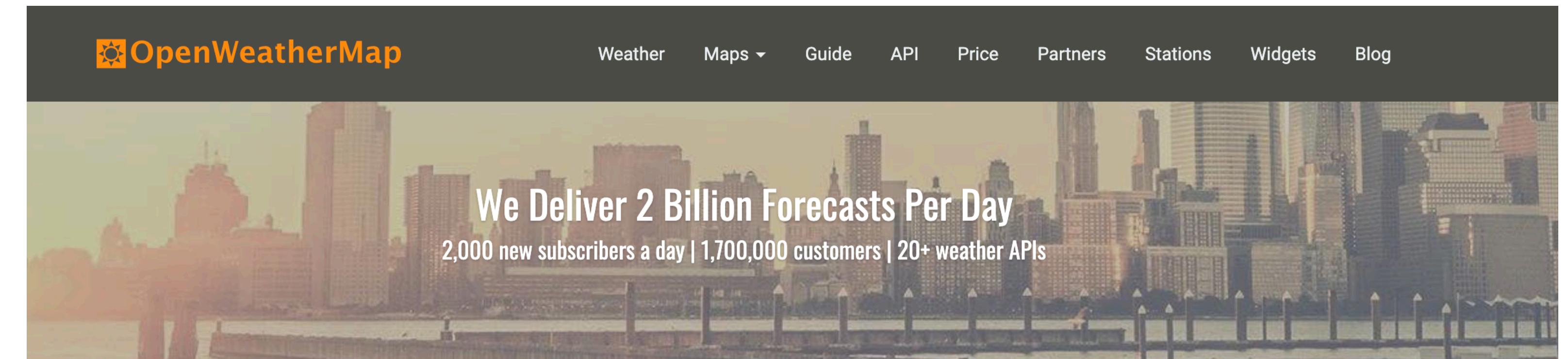
Donations Layer

```
renderDonations() {
  for (let donation of this.ds.donations) {
    const donationStr = `${donation.candidate.firstName} ${donation.candidate.lastName} €${donation.amount.toString()}`;
    this.map.addMarker(donation.location, donationStr, 'Donations');
  }
}
```

- When adding marker, also specify layer name

OpenWeather Map

<https://openweathermap.org/>



Your city name

Current weather and forecasts in your city

Weather in Waterford, IE



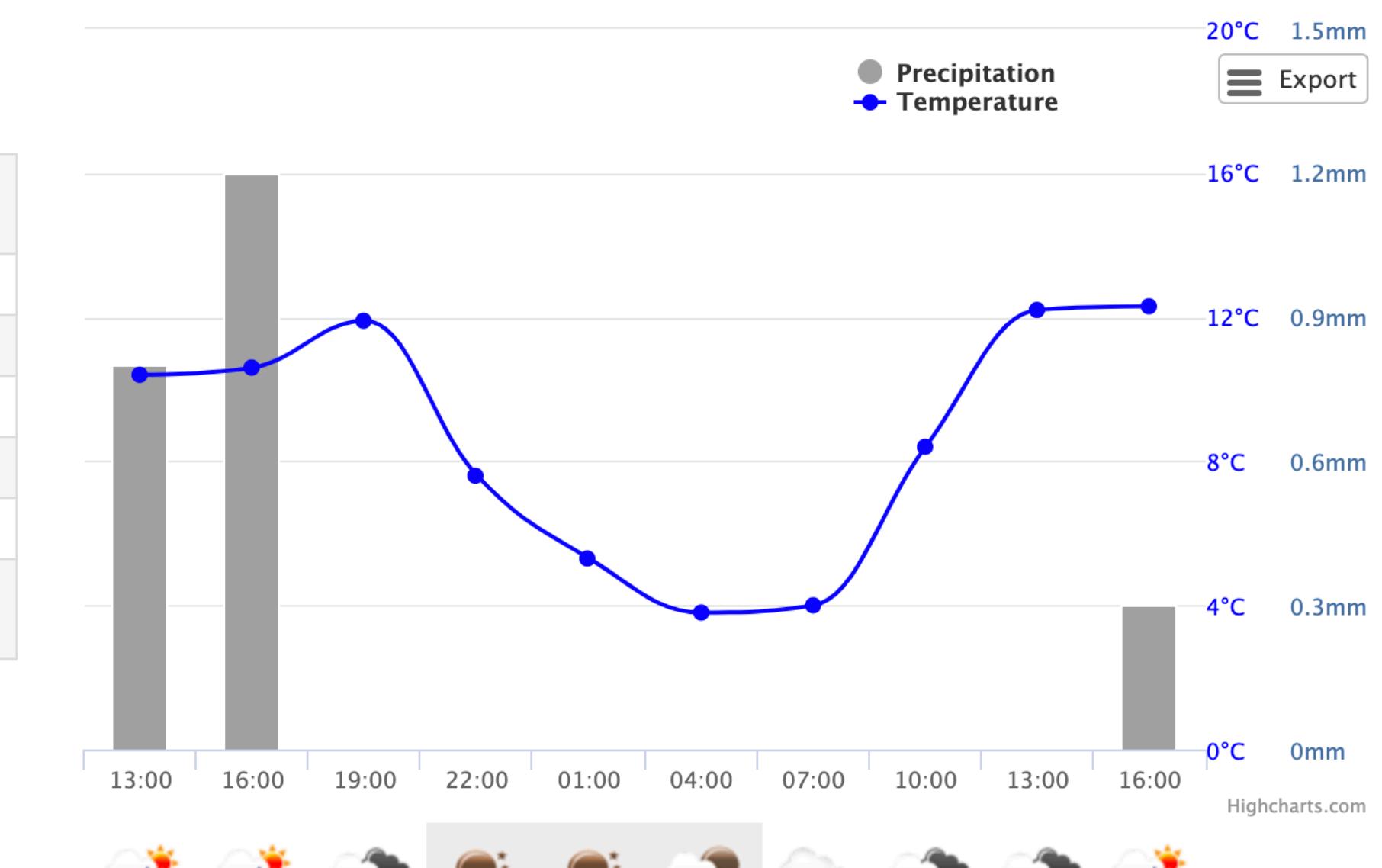
Broken clouds

10:36 May 2 [Wrong data?](#)

Wind	Light breeze, 1.8 m/s, West-northwest (293)
Cloudiness	Broken clouds
Pressure	1017 hpa
Humidity	78 %
Sunrise	05:56
Sunset	20:54
Geo coords	[52.26, -7.11]

The weather forecast is displayed in accordance with your local time. Please pay

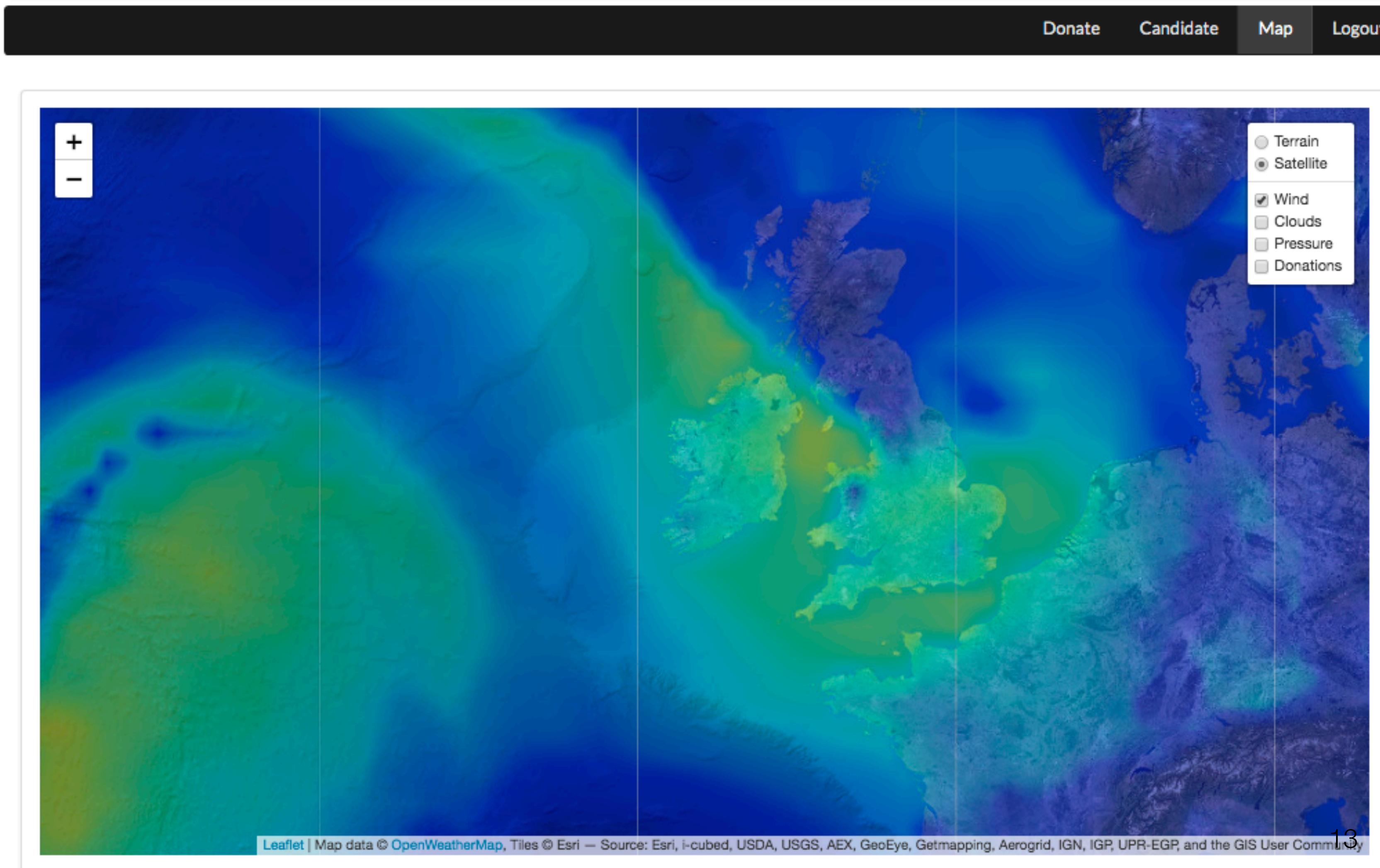
Weather and forecasts in Waterford, IE



```

overlays = {
  Wind : L.tileLayer('http://{s}.tile.openweathermap.org/map/wind/{z}/{x}/{y}.png?appid={apiKey}', {
    maxZoom: 19,
    attribution: 'Map data &copy; <a href="http://openweathermap.org">OpenWeatherMap</a>',
    apiKey: 'YOURKEYHERE',
    opacity: 0.5
}),
  Clouds : L.tileLayer('http://{s}.tile.openweathermap.org/map/clouds/{z}/{x}/{y}.png?appid={apiKey}', {
    maxZoom: 19,
    attribution: 'Map data &copy; <a href="http://openweathermap.org">OpenWeatherMap</a>',
    apiKey: 'YOURKEYHERE',
    opacity: 0.5
}),
  Pressure : L.tileLayer('http://{s}.tile.openweathermap.org/map/pressure/{z}/{x}/{y}.png?appid={apiKey}', {
    maxZoom: 19,
    attribution: 'Map data &copy; <a href="http://openweathermap.org">OpenWeatherMap</a>',
    apiKey: 'YOURKEYHERE',
    opacity: 0.5
})
}

```



- Register with OpenWeatherMap and include api key