

# 01. LEAFLET Introduction.

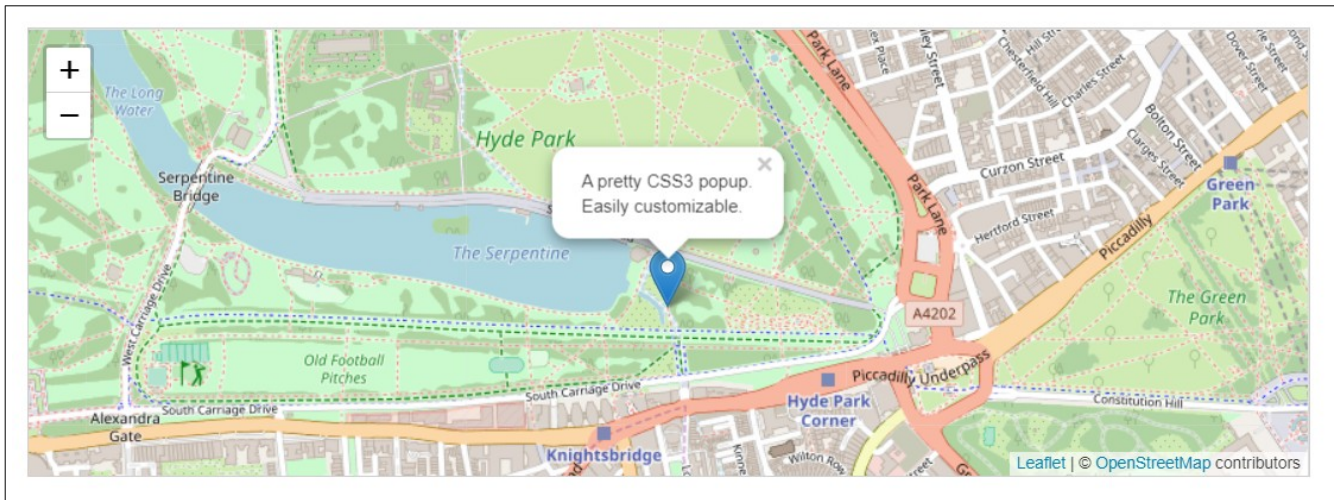
## 1.1. Introduction

an open-source JavaScript library  
for mobile-friendly interactive maps



**Leaflet** is the leading open-source JavaScript library for mobile-friendly interactive maps. Weighing just about 38 KB of JS, it has all the mapping features most developers ever need.

**Leaflet** is designed with simplicity, performance and usability in mind. It works efficiently across all major desktop and mobile platforms, can be extended with lots of plugins, has a beautiful, easy to use and well-documented API and a simple, readable source code that is a joy to contribute to.



Here we create a map in the '*map*' div, add tiles of our choice, and then add a marker with some text in a *popup*:

**Example:**

```
var map = L.map('map').setView([51.505, -0.09], 13);

L.tileLayer('https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {
  attribution: '&copy; <a href="https://www.openstreetmap.org/copyright">OpenStreetMap</a> contributors'
}).addTo(map);

L.marker([51.5, -0.09]).addTo(map)
  .bindPopup('A pretty CSS3 popup.<br> Easily customizable.')
  .openPopup();
```

## 1.2. Features

*Leaflet* doesn't try to do everything for everyone. Instead it focuses on making the basic things work perfectly.

### Layers Out of the Box

- Tile layers, WMS
- Markers, Popups
- Vector layers: polylines, polygons, circles, rectangles
- Image overlays
- GeoJSON

### Interaction Features

- Drag panning with inertia
- Scroll wheel zoom
- Pinch-zoom on mobile
- Double click zoom
- Zoom to area (shift-drag)
- Keyboard navigation
- Events: click, mouseover, etc.
- Marker dragging

### Visual Features

- Zoom and pan animation
- Tile and popup fade animation
- Very nice default design for markers, popups and map controls
- Retina resolution support

### Customization Features

- Pure CSS3 popups and controls for easy restyling
- Image- and HTML-based markers

- A simple interface for custom map layers and controls
- Custom map projections (with EPSG:3857/4326/3395 out of the box)
- Powerful OOP facilities for extending existing classes

## Performance Features

- Hardware acceleration on mobile makes it feel as smooth as native apps
- Utilizing CSS3 features to make panning and zooming really smooth
- Smart polyline/polygon rendering with dynamic clipping and simplification makes it very fast
- Modular build system for leaving out features you don't need
- Tap delay elimination on mobile

## Map Controls

- Zoom buttons
- Attribution
- Layer switcher
- Scale

## Browser Support

- Desktop
- Chrome
- Firefox
- Safari 5+
- Opera 12+
- IE 7–11
- Edge

## Mobile

- Safari for iOS 7+
- Android browser 2.2+, 3.1+, 4+
- Chrome for mobile
- Firefox for mobile
- IE10+ for Win8 devices

## **Misc**

- Extremely lightweight
- No external dependencies