



# *leafletJs*



**tutorialspoint**

SIMPLY EASY LEARNING

[www.tutorialspoint.com](http://www.tutorialspoint.com)

 <https://www.facebook.com/tutorialspointindia>

 <https://twitter.com/tutorialspoint>

## About the Tutorial

---

Leaflet.js is an open-source library using which we can deploy interactive, simple, lightweight and simple web maps.

## Audience

---

This tutorial is meant for all those readers who would like to learn Leaflet.js API. After completing this tutorial, you would be able to integrate Leaflet.js JavaScript API on your webpage.

## Prerequisites

---

Before proceeding with this tutorial, you should be familiar with JavaScript and the concepts of object-oriented programming.

## Copyright & Disclaimer

---

© Copyright 2017 by Tutorials Point (I) Pvt. Ltd.

All the content and graphics published in this e-book are the property of Tutorials Point (I) Pvt. Ltd. The user of this e-book is prohibited to reuse, retain, copy, distribute or republish any contents or a part of contents of this e-book in any manner without written consent of the publisher.

We strive to update the contents of our website and tutorials as timely and as precisely as possible, however, the contents may contain inaccuracies or errors. Tutorials Point (I) Pvt. Ltd. provides no guarantee regarding the accuracy, timeliness or completeness of our website or its contents including this tutorial. If you discover any errors on our website or in this tutorial, please notify us at [contact@tutorialspoint.com](mailto:contact@tutorialspoint.com)

## Table of Contents

---

About the Tutorial .....	i
Audience.....	i
Prerequisites.....	i
Copyright & Disclaimer .....	i
Table of Contents.....	ii
<b>1. LEAFLET – GETTING STARTED.....</b>	<b>1</b>
What is Leaflet.js .....	1
Steps to Load the Map on a Webpage.....	1
Leaflet Map Providers .....	5
<b>2. LEAFLET – MARKERS .....</b>	<b>9</b>
Adding a Simple Marker.....	9
Marker Options.....	13
Marker Custom Icons .....	16
<b>3. LEAFLET – VECTOR LAYERS.....</b>	<b>20</b>
Polyline .....	20
Polygon.....	23
Rectangle .....	25
Circle.....	28
<b>4. LEAFLET – MULTI POLYLINE &amp; POLYGON .....</b>	<b>31</b>
Multi-Polyline .....	31
Multi Polygon .....	33
<b>5. LEAFLET – LAYERS GROUPS.....</b>	<b>37</b>
Layer Groups.....	37
Feature Groups .....	41

6. LEAFLET – EVENT HANDLING .....	45
<b>Event Handling</b> .....	<b>45</b>
7. LEAFLET – OVERLAYS.....	47
<b>Image Overlay</b> .....	<b>47</b>
8. LEAFLET – CONTROLS.....	49
<b>Zoom</b> .....	<b>49</b>
<b>Attribution</b> .....	<b>51</b>
<b>Scale</b> .....	<b>54</b>

# 1. Leaflet – Getting Started

## What is Leaflet.js

---

Leaflet.js is an open-source library using which we can deploy simple, interactive, lightweight web maps.

- Leaflet JavaScript library allows you to use layers such as Tile layers, WMS, Markers, Popups, Vector layers (polylines, polygons, circles, etc.), Image overlays and GeoJSON.
- You can interact with the Leaflet maps by dragging the map, zooming (by double click or, wheel scroll), using keyboard, using event handling, and by dragging the markers.
- Leaflet supports browsers such as Chrome, Firefox, Safari 5+, Opera 12+, IE 7–11 on desktop and, browsers like Safari, Android, Chrome, Firefox for mobiles.

## Steps to Load the Map on a Webpage

---

Follow the steps given below to load a map on your webpage –

### Step 1: Create an HTML Page

Create a basic HTML page with **head** and **body** tags as shown below –

```
<!DOCTYPE html>
<html>
  <head>
  </head>

  <body>
    .....
  </body>
</html>
```

### Step 2 : Load the Leaflet CSS Script

Include the Leaflet CSS script in the example –

```
<head>
  <link rel="stylesheet" href="http://cdn.leafletjs.com/leaflet-0.7.3/leaflet.css" />
```

```
</head>
```

### Step 3: Load the Leaflet Script

Load or include the Leaflet API using the script tag –

```
<head>
  <script src="http://cdn.leafletjs.com/leaflet-0.7.3/leaflet.js"></script>
</head>
```

### Step 4: Create the Container

To hold the map, we have to create a container element. Generally, the <div> tag (a generic container) is used for this purpose.

Create a container element and define its dimensions –

```
<div id = "sample" style = "width:900px; height:580px;"></div>
```

### Step 5: Map Options

Leaflet provides several options such as types Control options, Interaction Options, Map State Options, Animation Options, etc. By setting values to these, we can customize the map as desired.

Create a **mapOptions** object (it is created just like a literal) and set values for the options center and zoom, where

- **center** – As a value to this option, you need to pass a **LatLng** object specifying the location where we want to center the map. (Just specify the latitude and longitude values within **[]** braces)
- **zoom** – As a value to this option, you need to pass an integer representing the zoom level of the map, as shown below.

```
var mapOptions = {
  center: [17.385044, 78.486671],
  zoom: 10
}
```

### Step 6: Create a Map Object

Using the **Map** class of leaflet API, you can create a map on a page. You can create a map object by instantiating the called **Map** of the Leaflet API. While instantiating this class, you need to pass two parameters:

- As a parameter to this option, you need to pass a String variable representing the DOM id or an instance of the <div> element. Here, the <div> element is an HTML container to hold the map.
- An optional object literal with map options.

Create a Map object by passing the id of the <div> element and mapOptions object created in the previous step.

```
var map = new L.map('map', mapOptions);
```

## Step 7: Creating the Layer Object

You can load and display various types of maps (tile layers) by instantiating the **TileLayer** class. While instantiating it you need to pass an URL template requesting the desired tile layer(map) from the service provider, in the form of a String variable.

Create the tile layer object as shown below.

```
var layer = new L.TileLayer('http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png');
```

Here we have used the **openstreetmap**.

## Step 8: Add Layer to the Map

Finally add the layer created in the previous step to the map object using the **addlayer()** method as shown below.

```
map.addLayer(layer);
```

## Example

The following example shows how to load an **open street map** of Hyderabad city with a zoom value of 10.

```
<!DOCTYPE html>

<html>
  <head>
    <title>Leaflet sample</title>
    <link rel="stylesheet" href="http://cdn.leafletjs.com/leaflet-0.7.3/leaflet.css" />

    <script src="http://cdn.leafletjs.com/leaflet-0.7.3/leaflet.js"></script>
  </head>
```

```
<body>
  <div id = "map" style = "width: 900px; height: 580px"></div>
  <script>
    // Creating map options
    var mapOptions = {
      center: [17.385044, 78.486671],
      zoom: 10
    }

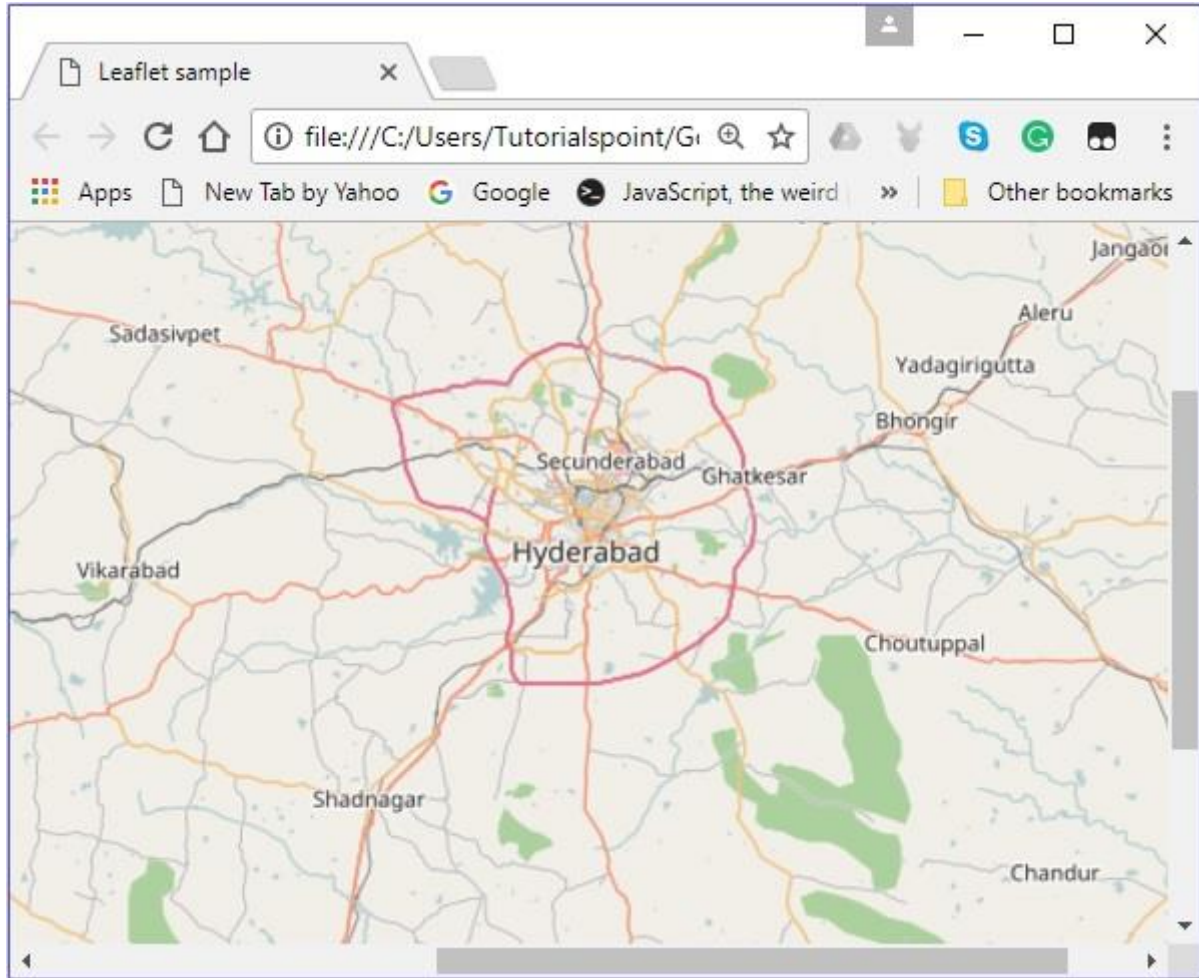
    // Creating a map object
    var map = new L.map('map', mapOptions);

    // Creating a Layer object
    var layer = new L.TileLayer('http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png');

    // Adding layer to the map
    map.addLayer(layer);
  </script>
</body>
</html>
```

It generates the following output –





## Leaflet Map Providers

Just like **open street map**, you can load the layers of various service providers such as Open Topo, Thunder forest, Hydda, ESRI, Open weather, NASA GIBS, etc. To do so, you need to pass their respective URL while creating the **TileLayer** object –

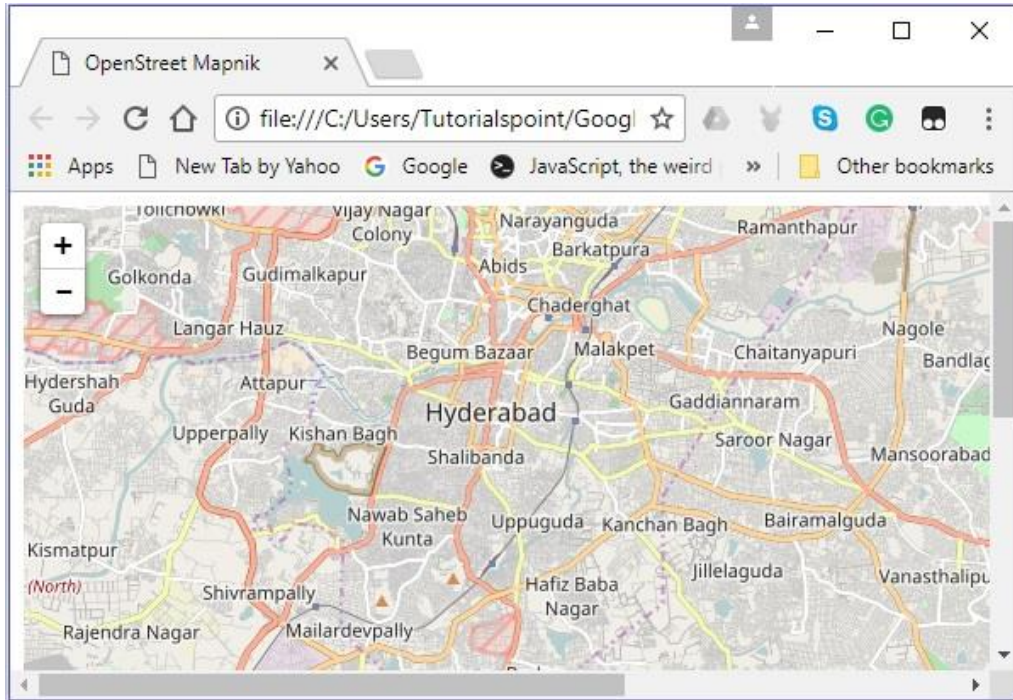
```
var layer = new L.TileLayer('URL of the required map');
```

The following table lists the URL's and their respective sample maps of the layers provided by Openstreetmap.

Map Type	URL and Output
----------	----------------

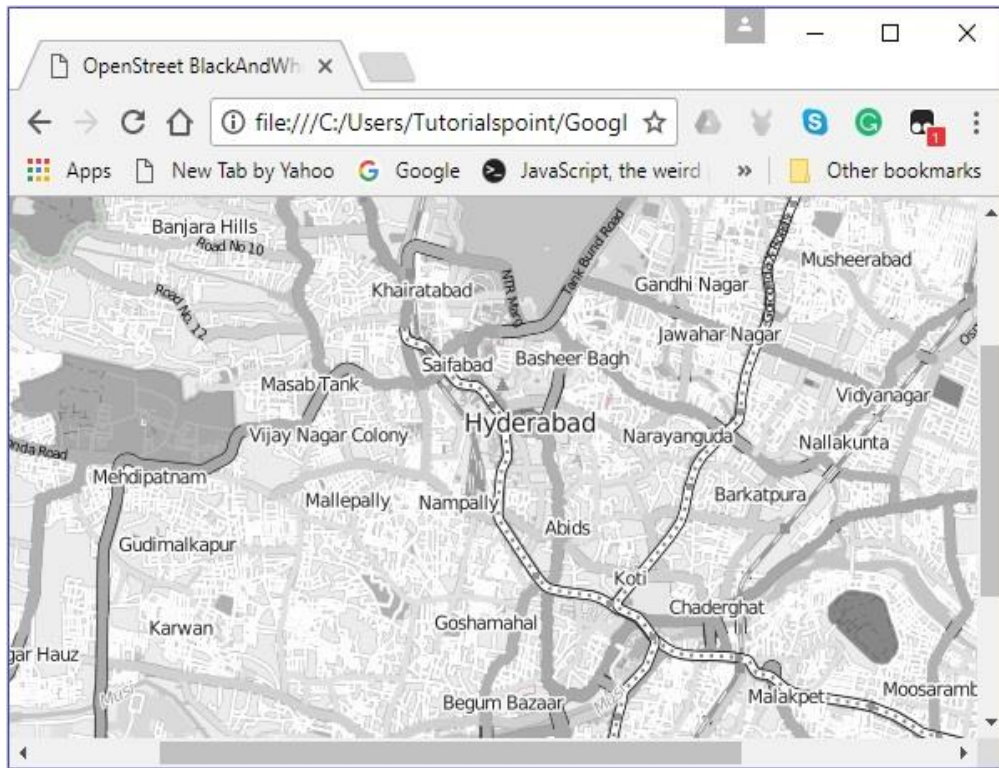
<http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png>

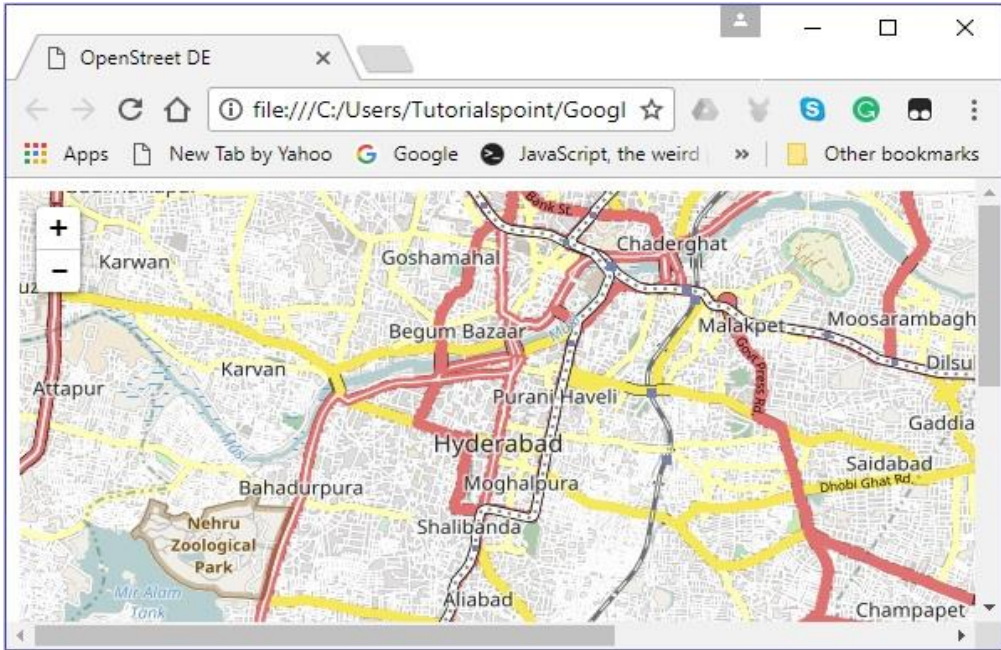
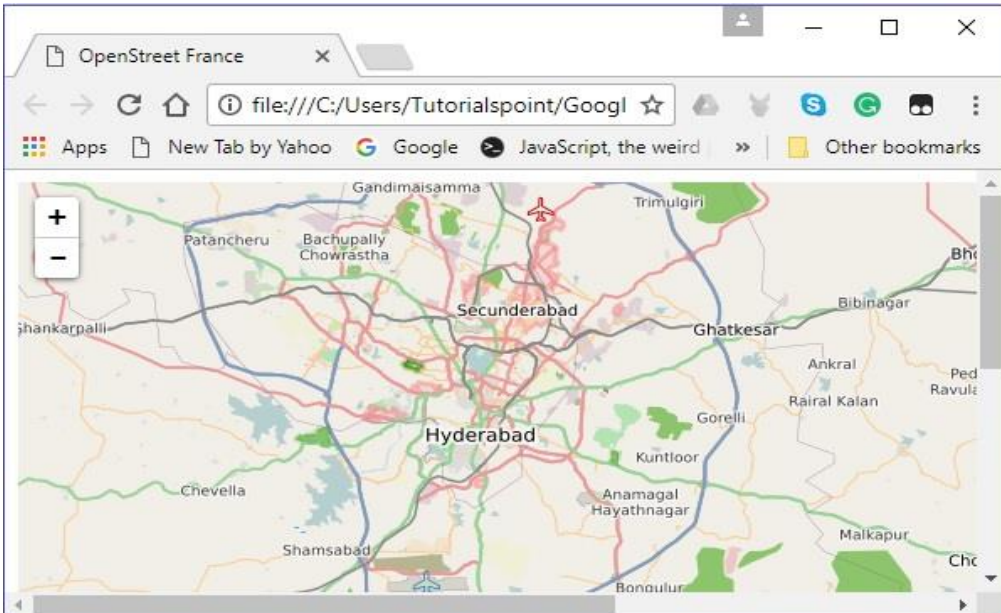
Mapnik

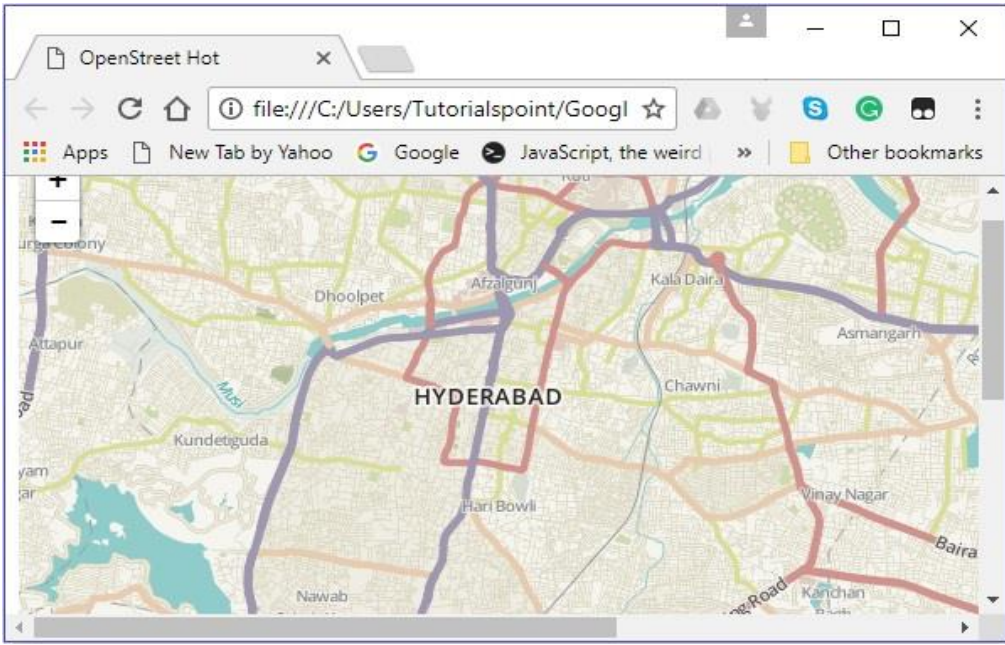
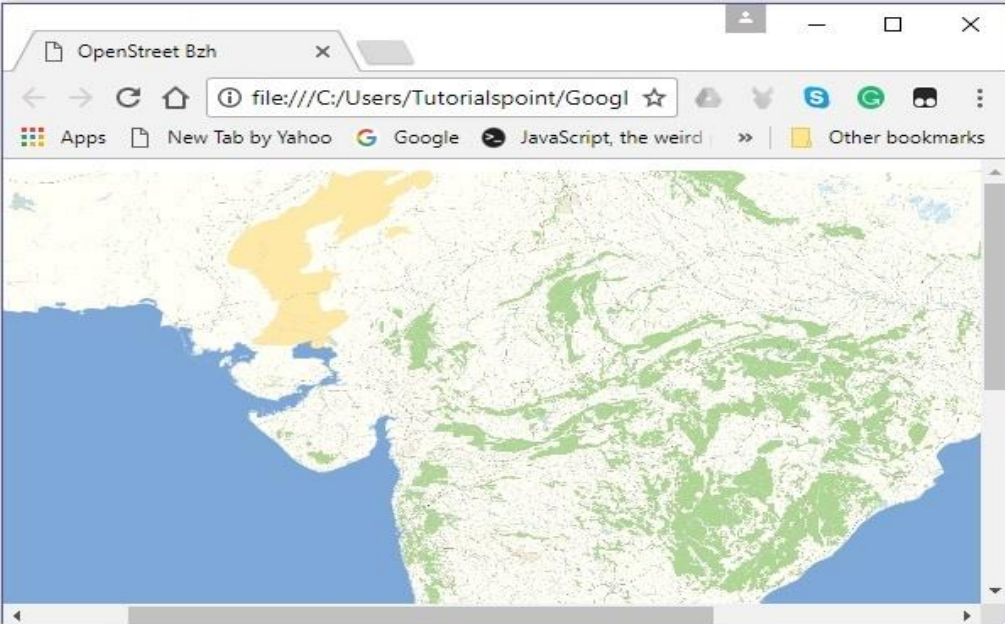


<http://{s}.tiles.wmflabs.org/bw-mapnik/{z}/{x}/{y}.png>

Black  
And  
White



<p>DE</p>	<p><a href="http://{s}.tile.openstreetmap.de/tiles/osmde/{z}/{x}/{y}.png">http://{s}.tile.openstreetmap.de/tiles/osmde/{z}/{x}/{y}.png</a></p> 
<p>France</p>	<p><a href="http://{s}.tile.openstreetmap.fr/osmfr/{z}/{x}/{y}.png">http://{s}.tile.openstreetmap.fr/osmfr/{z}/{x}/{y}.png</a></p> 

<p>Hot</p>	<p><a href="http://{s}.tile.openstreetmap.fr/hot/{z}/{x}/{y}.png">http://{s}.tile.openstreetmap.fr/hot/{z}/{x}/{y}.png</a></p> 
<p>BZH</p>	<p><a href="http://tile.openstreetmap.bzh/br/{z}/{x}/{y}.png">http://tile.openstreetmap.bzh/br/{z}/{x}/{y}.png</a></p> 

End of ebook preview  
If you liked what you saw...  
Buy it from our store @ <https://store.tutorialspoint.com>