



**FREE eBook**

# LEARNING openlayers-3

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#openlayers

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# About

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# Chapter 1: Getting started with openlayers-3

## Remarks

This section provides an overview of what openlayers-3 is, and why a developer might want to use it.

It should also mention any large subjects within openlayers-3, and link out to the related topics. Since the Documentation for openlayers-3 is new, you may need to create initial versions of those related topics.

## Examples

### Installation or Setup

OpenLayers 3 or as it is referred OL-3 is a Javascript Library for web mapping, so in order to use it you'll need to add it in your html:

- first add the ol.css file to use the map styling of OL-3 :
- then add the ol.js file :

you can also download OL-3 from the official site [www.openlayers.org](http://www.openlayers.org) and call the files in the html by changing the src and href

### setting up OL-3

```
<link rel="stylesheet" href="http://openlayers.org/en/v3.17.1/css/ol.css" type="text/css">
<script src="http://openlayers.org/en/v3.17.1/build/ol.js"></script>
```

### Getting started with a simple map

```
<html>
  <head>
    <title>Getting started</title>
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/ol3/3.17.1/ol.css"
type="text/css">
    <script src="https://cdnjs.cloudflare.com/ajax/libs/ol3/3.17.1/ol.js"></script>
  </head>
  <body>
    <div id="map" class="map"></div>
    <script>
      var baseLayer= new ol.layer.Tile({ //a Tile layer is a the background layer for the map
        // here we choose an OpenStreetMap base layer
        source: new ol.source.OSM({
          url: 'https://a.tile.openstreetmap.org/{z}/{x}/{y}.png'
        })
      });
```

```

var map = new ol.Map({ // we create our map
  layers: [baseLayer], // and add the layers to it ( in our case we only have one)
  target: 'map', // the div element that will serve as a map
  controls: ol.control.defaults({ // we leave the map controls to default
    attributionOptions: /** @type {olx.control.AttributionOptions} */ ({
      collapsible: false
    })
  }),
  view: new ol.View({ // we define the initial view of the map
    center: ol.proj.fromLonLat([0, 0]), //the default projection is the spherical
    mercator (meter units) so we get coordinates of the center by degrees
    zoom: 2 // the initial zoom level
  })
});
</script>
</body>
</html>

```

## Example using Bing Maps

```

var baseLayer = new ol.layer.Tile({
  visible: true,
  preload: Infinity,
  source: new ol.source.BingMaps({
    // We need a key to get the layer from the provider.
    // Sign in with Bing Maps and you will get your key (for free)
    key: 'Ap9VqFbJYRNkatdxt3KyzfJxXN_9GlfABRyX3k_JsQtkMQLfK_-AzDyJHI5nojyP',
    imagerySet: 'Aerial', // or 'Road', 'AerialWithLabels', etc.
    // use maxZoom 19 to see stretched tiles instead of the Bing Maps
    // "no photos at this zoom level" tiles
    maxZoom: 19
  })
});

var map = new ol.Map({
  layers: [baseLayer],
  target: 'map',
  controls: ol.control.defaults({
    attributionOptions: /** @type {olx.control.AttributionOptions} */ ({
      collapsible: false
    })
  }),
  view: new ol.View({
    center: ol.proj.fromLonLat([0, 0]),
    zoom: 2
  })
});

```

Read Getting started with openlayers-3 online: <https://riptutorial.com/openlayers-3/topic/5203/getting-started-with-openlayers-3>

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# Chapter 2: Draw the different types of geometry

## Examples

### Draw a Multi Line Geometry

### Create a vector source

```
var vectorSource = new ol.source.Vector({});
```

### Initiate Map Object and add vector Layer to the map and Source as the vectorSource

```
var map = new ol.Map({
  layers: [
    new ol.layer.Tile({
      source: new ol.source.OSM()
    }),
    new ol.layer.Vector({
      source: vectorSource
    })
  ],
  target: 'map',
  view: new ol.View({
    center: [45, 5],
    zoom: 5
  })
});
```

### Transform the projection from source projection system to target project system.

```
var points=[];
for (i = 0; i < 10; i++) {
  var xx = Math.random() * (xmax - xmin) + xmin;
  var yy = Math.random() * (ymax - ymin) + ymin;
  points.push(ol.proj.transform([xx,yy], 'EPSG:4326', 'EPSG:3857'));
}
```

### pass points to the ol.geom.MultiLineString([]) constructor

```
var thing = new ol.geom.MultiLineString([points1]);
```

## Create a feature and add geometry as a thing

```
var featurething = new ol.Feature({
  name: "Thing",
  geometry: thing,
  style : new ol.style.Style({
    stroke : new ol.style.Stroke({
      color : 'red'
    })
  })
});
```

## Finally add it to source

```
vectorSource.addFeature( featurething );
```

Note : It is very important to put proper source and target projection systems

Read Draw the different types of geometry online: <https://riptutorial.com/openlayers-3/topic/8004/draw-the-different-types-of-geometry>

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# Credits

S. No	Chapters	Contributors
1	Getting started with openlayers-3	<a href="#">chrki</a> , <a href="#">Community</a> , <a href="#">Hicham Zouarhi</a> , <a href="#">unibasil</a>
2	Draw the different types of geometry	<a href="#">Nagaveer Gowda</a>