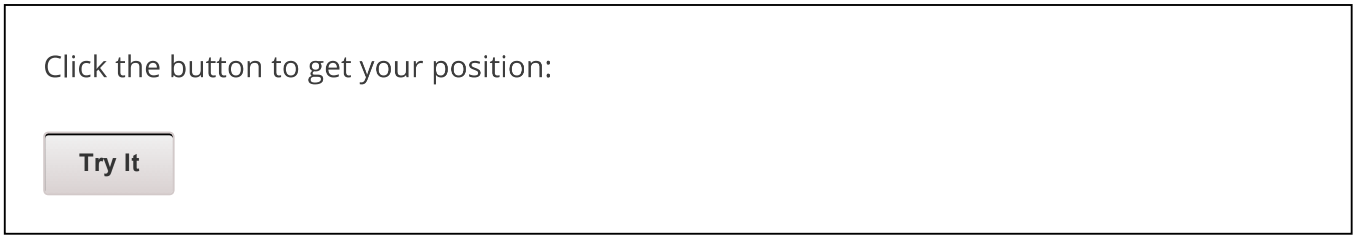
Practical examples: use the geolocation API together with Google Maps

This section presents some examples of how to get a static map (a picture), using the Google Static Map API, how to display an interactive map using the Google Map JavaScript API and even how to get an estimation of a physical address from the longitude and latitude, using the Google Reverse Geocoding JavaScript API.

The following three examples increase in complexity, but most of the code is reused and adapted without even reading the Google documentation about the different APIs.

EXAMPLE 1 (EASY): HOW TO GET A STATIC IMAGE MAP CENTERED ON YOUR LONGITUDE AND LATITUDE

Online example available on JS Bin, or try it here in your browser:



Click the button to get your position:

It also illustrates the use of the error callback from the previous section. The Google Map API is used to get an image centered at the longitude and latitude collected with the HTML5 Geolocation API.

Source code extract:

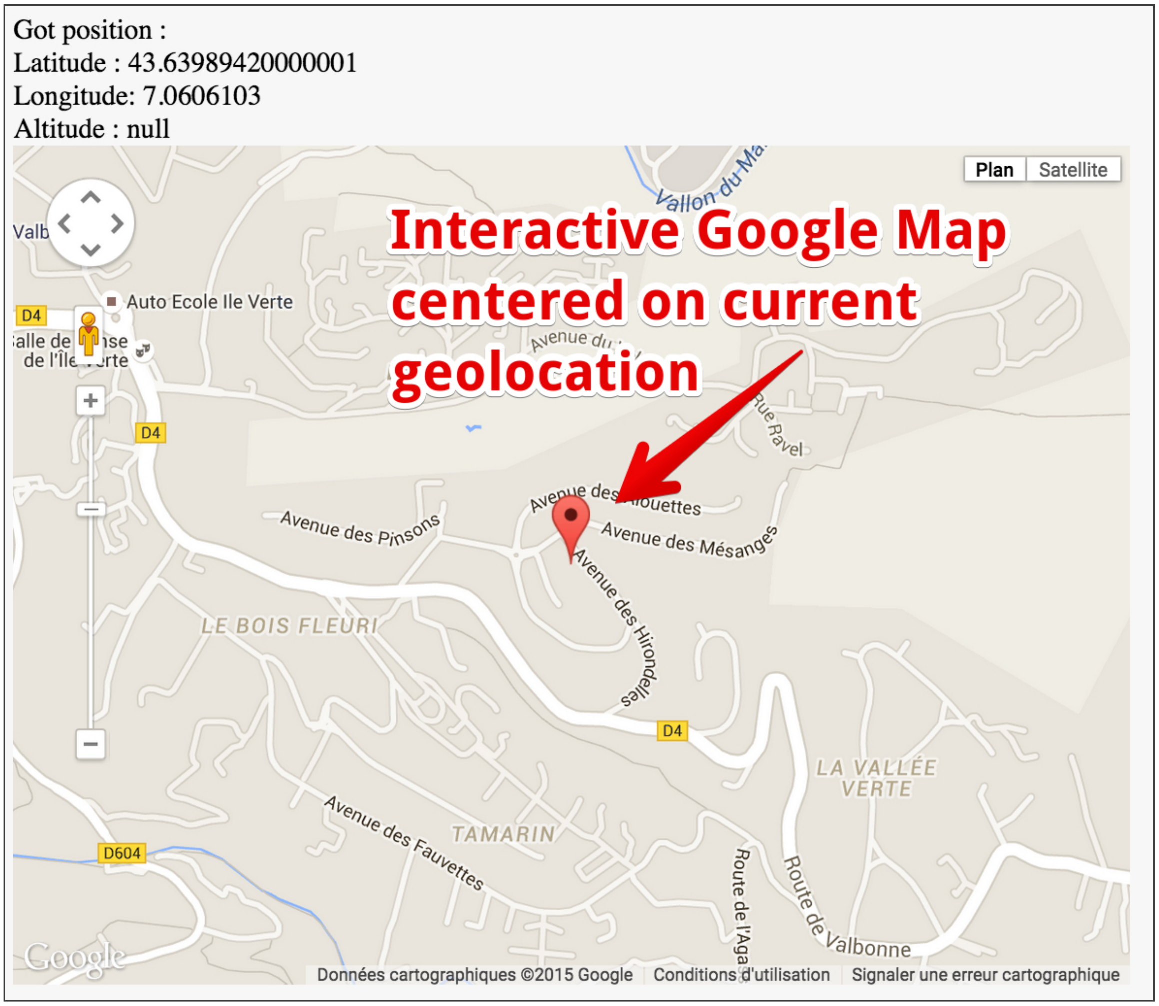
```
<!DOCTYPE html>
<html>
<body>
<p id="demo">Click the button to get your position:</p>
<button onclick="getLocation()">Try It</button>
<div id="mapholder"></div>
<script>
var x=document.getElementById("demo");

function getLocation() {
   if (navigator.geolocation) {
     navigator.geolocation.getCurrentPosition(showPosition,showError);
        } else{
           x.innerHTML="Geolocation is not supported by this browser.";
        }
     }

19.  function showPosition(position) {
        // Google map API needs the latitude and longitude separated by a
     comma
        varlatlon=position.coords.latitude+","+position.coords.longitude;
        // Google map API URL that returns an image centered on the
     longitude and latitude
        varimg_url="http://maps.googleapis.com/maps/api/staticmap?center="
                    +latlon+"&zoom=14&size=400x300&sensor=false";
        document.getElementById("mapholder").innerHTML="<img
     src='"+img_url+"' />";
      }

      function showError(error) {
         ...
      }
     </script>
     </body>
35.  </html>
```

The magic occurs at line 23, where we use the Google Static Map API.

EXAMPLE 2 (A BIT MORE COMPLICATED...) THAT SHOWS HOW TO DISPLAY AN INTERACTIVE GOOGLE MAP CENTERED ON THE CURRENT POSITION

This example is just given "as is", as there are so many possibilities for rendering a map with the Google Map API. However, we think having such a basic example might be useful.

Online example at JS Bin



Got position :
Latitude : 43.63989420000001
Longitude: 7.0606103
Altitude : null

Interactive Google Map centered on current geolocation

Source code of the example:

```
<!doctype html>
<html>
<head>
</head>
<body>
<!-- for position display -->
<div id="myposition"></div>

<!-- for gmap display -->
<div id="map"style="width:640px;height:480px"></div>

<!-- get gmap API -->
<scriptsrc="http://maps.google.com/maps/api/js?sensor=false"></script>

<script>
// Default position
var centerpos = newgoogle.maps.LatLng(48.579400,7.7519);
```

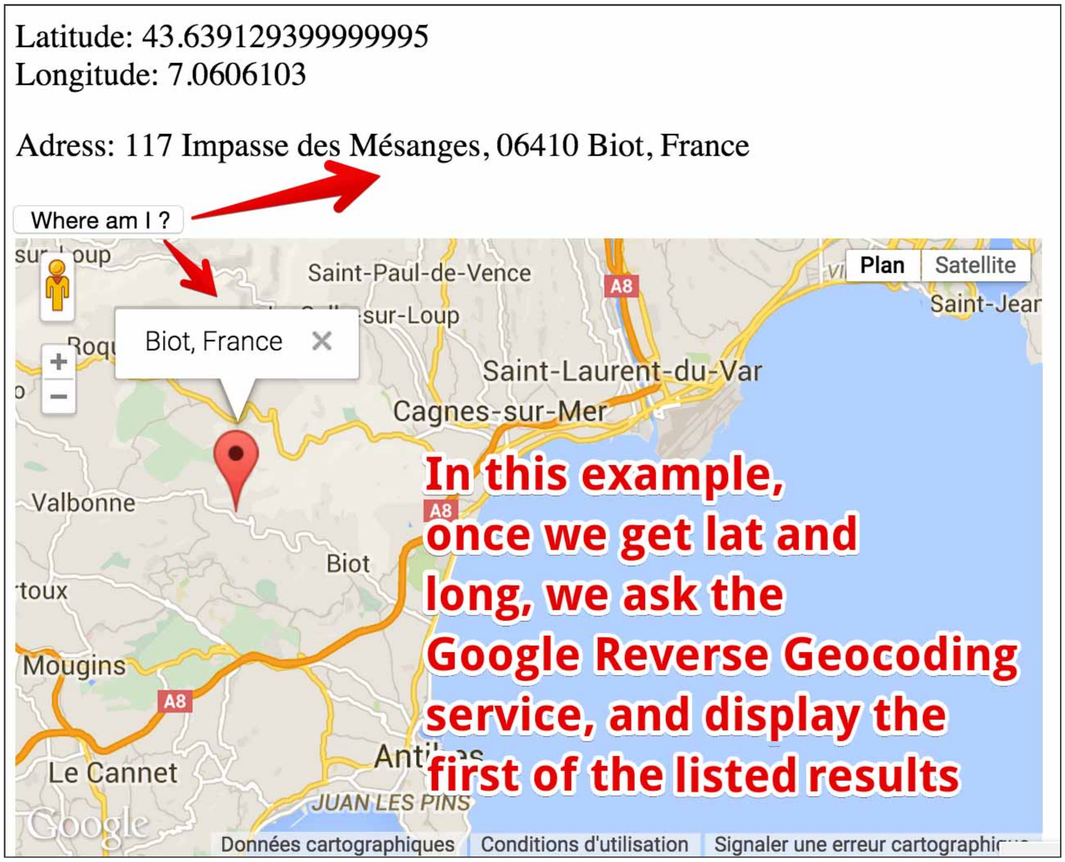
```

// default options for the google map
var optionsGmaps = {
    center:centerpos,

navigationControlOptions: {style:google.maps.NavigationControlStyle.SMALL},
    mapTypeId:google.maps.MapTypeId.ROADMAP,
    zoom: 15
};

// Init map object
var map = newgoogle.maps.Map(document.getElementById("map"),optionsGmaps);

if(navigator.geolocation) {

    // callback function, called by getCurrentPosition() in case of
success
    function drawPosition(position) {
       var infopos = "Got position : <br>";
       infopos += "Latitude : "+position.coords.latitude +"<br>";
       infopos += "Longitude: "+position.coords.longitude+"<br>";
       infopos += "Altitude : "+position.coords.altitude +"<br>";
       document.getElementById("myposition").innerHTML= infopos;

       // Make new object LatLng for Google Maps
       var latlng = newgoogle.maps.LatLng(position.coords.latitude,

                                           position.coords.longitude);

       // Add a marker at position
       var marker = newgoogle.maps.Marker({
                             position:latlng,
                             map: map,
                             title:"You are here"
       });

       // center map on longitude and latitude
       map.panTo(latlng);
    }

    // callback function, called by getCurrentPosition() in case of
error
    function errorPosition(error) {
       ...
    }
navigator.geolocation.getCurrentPosition(drawPosition,errorPosition);
} else {
    alert("Geolocation API not supported by your browser");
}
</script>
</body>
</html>
```

EXAMPLE 3 (ADVANCED) SHOWS HOW TO GET A PHYSICAL ADDRESS FROM THE LONGITUDE AND LATITUDE

This is another example that obtains an address from longitude and latitude. It uses the Google Reverse Geocoding JavaScript API. For those of you who are really interested to know how this API works, please read the Google documentation and tutorials.

Without going into detail, the below example might be useful to copy/paste/adapt for trying to pre-fill a form where one is asked for an address. Geolocation is useful for guessing the country, city, zip code, street, etc. Some examples that use this feature will be given in the next section of the course.

Online example at JS Bin.



Latitude: 43.639129399999995
Longitude: 7.0606103

Adress: 117 Impasse des Mésanges, 06410 Biot, France

In this example, once we get lat and long, we ask the Google Reverse Geocoding service, and display the first of the listed results

Source code of the example:

```
<!DOCTYPE html>
<html lang="en">
 <head>
    <scriptsrc="https://maps.googleapis.com/maps/api/js?
v=3.exp&sensor=false"></script>
 <script>
 // p elements for displaying lat / long and address
 var displayCoords, myAddress;
 // used with the google apis
 var geocoder;
 var map;
 var infowindow = newgoogle.maps.InfoWindow();
 var marker;
 // Called when the page is loaded
 function init() {
    displayCoords=document.getElementById("msg");
    myAddress =document.getElementById("address");
    geocoder = newgoogle.maps.Geocoder();
    // In order to show something even before a user clicks on the
button
    var latlng = newgoogle.maps.LatLng(34.0144, -6.83);
    var mapOptions = {
       zoom: 8,
       center: latlng,
       mapTypeId: 'roadmap'
    }

map = newgoogle.maps.Map(document.getElementById('map_canvas'),mapOptions);
 } // end of init()
 // Called when the button is clicked
 function getLocation() {
    if (navigator.geolocation) {
       navigator.geolocation.getCurrentPosition(showPosition);
    } else {
       displayCoords.innerHTML="Geolocation API not supported by your
browser.";
    }
 }
 // Called when a position is available
 function showPosition(position) {
    displayCoords.innerHTML="Latitude: "+ position.coords.latitude +
                            "<br />Longitude:
```

```
" +position.coords.longitude;
    // Display the map
    showOnGoogleMap(newgoogle.maps.LatLng(position.coords.latitude,


 position.coords.longitude));
 }
 function showOnGoogleMap(latlng) {
   // Ask google geocoder for an address once we get a longitude and
   // a latitude. In fact, the reverse geocoder sends back an array of
"guesses"
   // i.e. not just one address object, but several. Each entry in
this array
   // has several properties such as street, city, etc. We use the
"formatted_address"
   // one here, but it might be interesting to get the detailed
properties in other
   // applications like a form with street, city, zip code etc.
   geocoder.geocode({'latLng':latlng},reverseGeocoderSuccess);
   functionreverseGeocoderSuccess(results, status) {
     if (status ==google.maps.GeocoderStatus.OK) {
        if (results[1]) {
           map.setZoom(11);
           marker = newgoogle.maps.Marker({
                                position:latlng,
                                map: map
                        });
           infowindow.setContent(results[1].formatted_address);
           infowindow.open(map, marker);
           // Display address as text in the page
           myAddress.innerHTML="Adress:
"+ results[0].formatted_address;
        } else {
           alert('No surface address found');
        }
      } else {
         alert('Geocoder failed due to: '+ status);
      }
    } // end of reverseGeocoderSuccess
 } // end of showOnGoogleMap
 </script>
 </head>
 <body onload="init()">
 <title>HTML5 + Geolocalisation + Google Maps API Reverse
Geocoding</title>
```

```
 <p id="msg">Click the button to get your coordinates:</p>
 <p id="address"></p>
 <button onclick="getLocation()">Where am I ?</button>
 <div id="map_canvas" style="width:500px; height: 300px"></div>
 </body>
</html>
```