



## Geolocation Services with Google Maps Javascript API

By Fred Morgan

As our society becomes increasingly mobile, more page hits are coming from mobile devices than any other platform. Consequently, it is more important than ever for your web site and web applications to be mobile friendly. Of course responsive design is an important first step in your mobile marketing strategy, but once that is accomplished, how can you enhance the usability of your site and make it even more mobile friendly? One way is by implementing geolocation services.

This tutorial will use the [Google Maps Javascript API](#) in conjunction with [HTML5 geolocation API](#) and the [Gmap3 JQuery plugin](#) to generate a map of a physical address and provide turn-by-turn directions and a map from the user's location to the provided destination. [View demo](#).

1) The first thing we will do is display a map of the destination when the page loads..

The first thing we will do is load JQuery, the Gmap3 plugin, and the Google Maps API:

```
<script type="text/javascript" src="https://code.jquery.com/jquery-1.11.0.min.js"></script>
<script type="text/javascript" src="../../js/gmap3.min.js"></script>
<script src="http://maps.googleapis.com/maps/api/js?sensor=false"></script>
```

Then we will use JQuery to load the map when the document is ready. We simply pass the address variables to the script and then load the map into a div with the id "gmap".

```
<script>
$(document).ready(function() {
    var google_map_address = '1600 Pennsylvania Ave NW, Washington, DC, 20500';
    $(function(){
        $('#gmap-display').gmap3({
            marker: {
                address: google_map_address
            },
            map: {
                options: {
                    zoom: 14
                }
            }
        });
    });
});
```

</script>

In this example we are simply statically hard coding the address in the script, however, for dynamic applications, the address can be retrieved from a database and passed to the API script like so:

```
<script>
$(document).ready(function() {
    var google_map_address = '<?php echo $ADDRESS[0]->address_1 .', '$ADDRESS[0]->address_2.', '$ADDRESS[0]->city.', '$ADDRESS[0]->state_abbr.', '$ADDRESS[0]->zip; ?>';
    $(function(){
        $('#gmap-display').gmap3({
            marker: {
                address: google_map_address
            },
            map: {
                options: {
                    zoom: 14
                }
            }
        });
    });
});
</script>
```

Location: 1600 Pennsylvania Ave NW, Washington, DC 20500



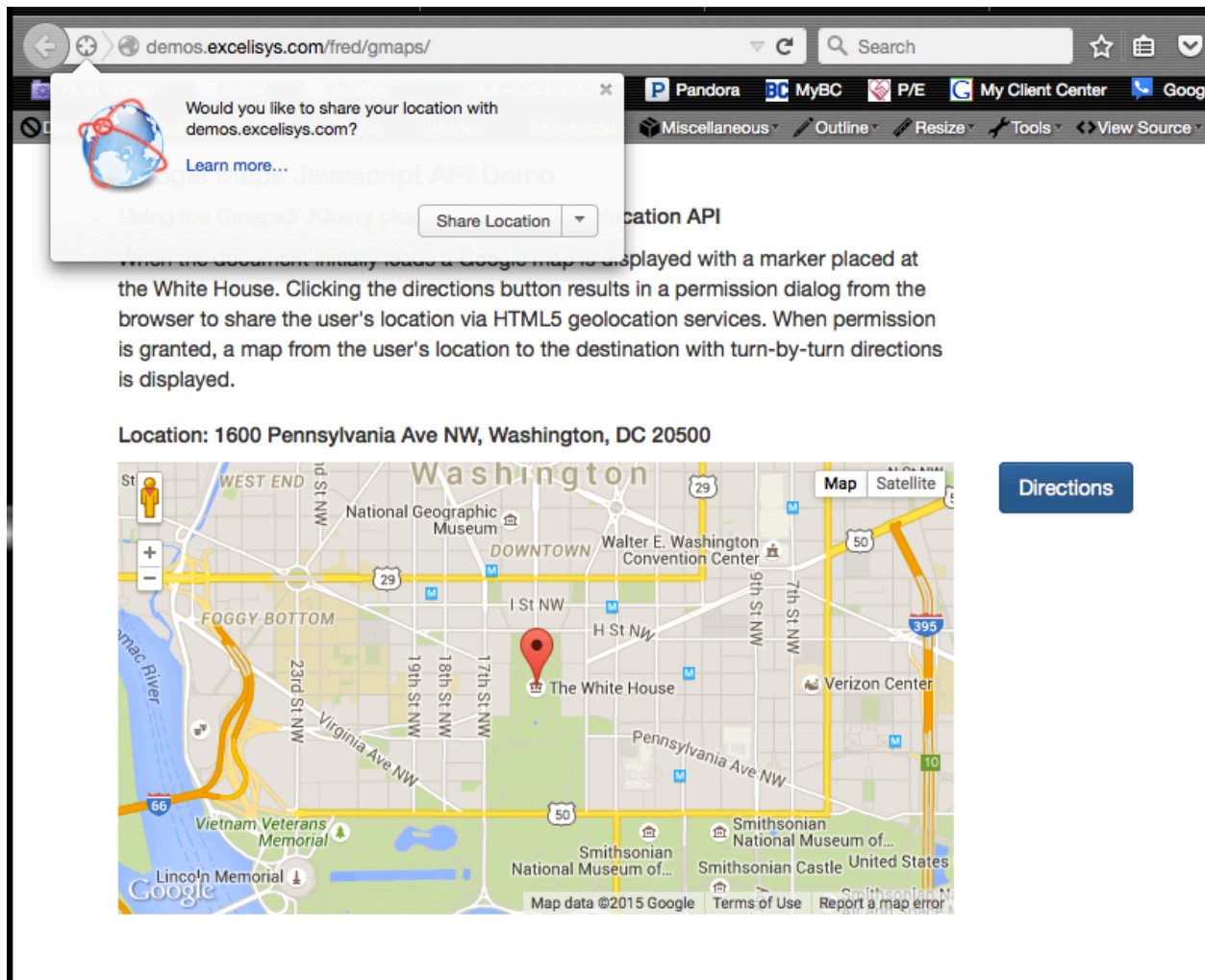
Directions

2) That was easy enough, but if we want to generate turn-by-turn directions to this destination, we need to get the user's starting point. To do this we will utilize the geolocation API in HTML5 to retrieve the user's location as the starting point for the map when they click the "directions" button.

First we need to check that the browser has this capability and provide error handling in the event that it does not.

```
function get_location() {  
    if (navigator.geolocation) {  
        navigator.geolocation.getCurrentPosition(success, fail);  
    } else {  
        alert("Geolocation is not supported by this browser.");  
    }  
}
```

If the browser is capable, we will attempt to retrieve the user's location. In order for this to take place, the user must first give their permission. Notice the permission dialog presented by the browser when the location request is initiated by the navigator.geolocation.getCurrentPosition method.



The method results in either success or failure and allows us to define call backs for either event. In the case of failure, we will provide graceful error handling to notify the user based on the error code returned by the method.

```
function fail(error)
{
    switch(error.code) // Returns 0-3
    {
        case 0:
            // Unknown error alert error message
            alert('Error: ' + error.message + '.');
            break;

        case 1:
            // Permission denied alert error message
            alert('Error: ' + error.message + '. Location services for your browser must be
enable on your device to get directions from your current location.');
```

enable on your device to get directions from your current location.');

```
            break;
        case 2:
            // Position unavailable alert error message
            alert('Error: ' + error.message + '. Your current position is unavailable. Please
try again later.');
```

try again later.');

```
            break;
    }
}
```

If the method is successful, we will initiate the `get_directions` function defined below.

```
function success(position) {
    get_directions(position.coords.latitude + ',' + position.coords.longitude);
}
```

The `get_directions` function will take the starting position retrieved from the HTML5 object. Our destination address is retrieved from the database and the Gmap3 JQuery plugin will generate the map with turn-by-turn directions and display it in the same div used to display the original map.

```
function get_directions(start_position) {

    $(function(){$("#gmap-display").gmap3({
        getroute:{
            options:{
                origin: start_position,
                destination: "1600 Pennsylvania Ave NW, Washington, DC, 20500",
                travelMode: google.maps.DirectionsTravelMode.DRIVING
            },
        },
    });
}
```

```

callback: function(results){
  if (!results) return;
  $(this).gmap3({
    map: {
      options: {
        zoom: 13,
        center: [-33.879, 151.235]
      }
    },
    directionsrenderer: {
      container:
$(document.createElement("div")).addClass("googlemap").insertAfter($("#gmap-display")),
      options: {
        directions: results
      }
    }
  });
}
}
});
});
}
}

```

3) Finally, we need the markup to display the maps (using Bootstrap 3 styling):

```

<div class="container">
  <div class="row">
    <div class="col-md-6">
      <h5>Location: 1600 Pennsylvania Ave NW, Washington, DC
20500</h5>
    </div>
  </div>

  <div class="row">
    <div class="col-md-6">
      <!-- GOOGLE MAP -->
      <div class="gmap" id="gmap-display"></div>

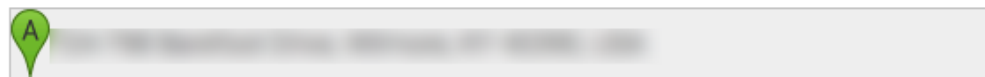
      <div class="col-md-3">
        <button id="directions" class="btn btn-primary"
onclick="get_location()">Directions</button>
      </div>
    </div>
  </div>
</div>

```

Location: 1600 Pennsylvania Ave NW, Washington, DC 20500



Directions



557 mi - about 8 hours 28 mins

1. Head north on	180 ft
2. Turn left onto	0.2 mi
3. Turn right onto	0.4 mi
4. Turn left onto	0.5 mi
5. Turn right onto	2.0 mi
6. Slight right onto	10.7 mi
7. Turn left onto the	0.2 mi
8. Merge onto US-60 W	2.3 mi
9. Continue onto KY-4 N	2.7 mi
10. Continue onto KY-4 N/US-421 BYP S/New Circle Rd	1.9 mi
11. Take exit 9B for KY-922 N/Newtown Park toward I-64/I-75	0.2 mi
12. Merge onto KY-922 N/Newtown Pike	1.7 mi
13. Merge onto I-64 E/I-75 S via the ramp to Ashland/Knoxville	4.0 mi
14. Keep left at the fork to continue on I-64 E, follow signs for Winchester/Ashland	169 mi

Putting it all together:

<style>

.gmap {

```

        height: 300px;
    }
    .gmap img {
        max-width: none;
    }
</style>

<!-- Latest compiled and minified CSS -->
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/css/bootstrap.min.css">

<!-- Optional theme -->
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/css/bootstrap-
theme.min.css">

<!-- Latest compiled and minified JavaScript -->
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js"></script>

<script type="text/javascript" src="https://code.jquery.com/jquery-1.11.0.min.js"></script>
<script type="text/javascript"
src="https://demos.excelisys.com/fred/gmaps/js/gmap3.min.js"></script>
<script src="http://maps.googleapis.com/maps/api/js?sensor=false"></script>

<script>

function get_location() {
    if (navigator.geolocation) {
        navigator.geolocation.getCurrentPosition(success, fail);
    } else {
        alert("Geolocation is not supported by this browser.");
    }
}

function success(position) {
    get_directions(position.coords.latitude + ',' + position.coords.longitude);
}

function fail(error)
{
    switch(error.code) // Returns 0-3
    {
        case 0:
            // Unknown error alert error message

```

```

        alert('Error: ' + error.message + '.');
        break;

    case 1:
        // Permission denied alert error message
        alert('Error: ' + error.message + '. Location services for your browser must be
enable on your device to get directions from your current location.');
```

```

        break;
    case 2:
        // Position unavailable alert error message
        alert('Error: ' + error.message + '. Your current position is unavailable. Please
try again later.');
```

```

        break;
    }
}

function get_directions(start_position) {
```

```

    $(function(){$("#gmap-display").gmap3({
        getroute:{
            options:{
                origin: start_position,
                destination: "1600 Pennsylvania Ave NW, Washington, DC, 20500",
                travelMode: google.maps.DirectionsTravelMode.DRIVING
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            callback: function(results){
                if (!results) return;
                $(this).gmap3({
                    map:{
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$(document.createElement("div")).addClass("googlemap").insertAfter($("#gmap-display")),
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                            directions:results
                        }
                    }
                });
            }
        }
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}
```



```

    }
  });
});
}

```

```

$(document).ready(function() {
  var google_map_address = '1600 Pennsylvania Ave NW, Washington, DC, 20500';
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        address: google_map_address
      },
      map:{
        options:{
          zoom: 14
        }
      }
    });
  });
});
</script>

```

```

<div class="container">
  <div class="row">
    <div class="col-md-6">
      <h4>Google Maps Javascript API Demo</h4>
      <h5>Using the Gmaps3 JQuery plugin and HTML5 Geolocation
API</h5>
      <p>When the document initially loads a Google map is displayed
with a marker placed at the White House. Clicking the directions button results in a permission
dialog from the browser to share the user's location via HTML5 geolocation services. When
permission is granted, a map from the user's location to the destination with turn-by-turn
directions is displayed.</p>
    </div>
  </div>

  <div class="row">
    <div class="col-md-6">
      <h5>Location: 1600 Pennsylvania Ave NW, Washington, DC
20500</h5>
    </div>
  </div>

  <div class="row">

```

```
<div class="col-md-6">
  <!-- GOOGLE MAP -->
  <div class="gmap" id="gmap-display"></div>
</div>

<div class="col-md-3">
  <button id="directions" class="btn btn-primary"
onclick="get_location()">Directions</button>
</div>
</div>
```

Et voilà! You now have a map with turn-by-turn directions from the user's location to the provided destination increasing the usability of your application and enhancing your mobile marketing strategy. Best of all, this implementation is device independent. As long as the browser supports HTML5, whether your user accesses your site from a mobile device, tablet, or desktop, they can generate the map with detailed directions. [View demo](#).