



INTRODUCTION TO GOOGLE MAPS APIS

```
<!DOCTYPE html>
<html>
  <head>
    <title>Introduction to Google Maps Javascript
API</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>

    <script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
    <script>
```

```
        //set map options
        var myLatLng = {lat: 51.5, lng: -0.1};
        var mapOptions = {
            center: myLatLng,
            zoom: 7,
            mapTypeId: google.maps.MapTypeId.SATELLITE

        };

        //create map
        var map = new
        google.maps.Map(document.getElementById('map'),
        mapOptions);

        //setting the mapTypeId upon construction
        map.setMapTypeId(google.maps.MapTypeId.ROADMAP);
    </script>
</body>

</html>
```



MARKERS AND INFOWINDOWS

```
<!DOCTYPE html>
<html>
  <head>
    <title>Markers and Infowindows</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>

    <script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
    <script>

      //set map options
```

```

var myLatLng = {lat: 51.5, lng: -0.1};
var mapOptions = {
  center: myLatLng,
  zoom: 7,
  mapTypeId: google.maps.MapTypeId.SATELLITE

};

//create map
var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

//setting the mapTypeId upon construction

map.setMapTypeId(google.maps.MapTypeId.ROADMAP);


//create marker1
var marker1Options = {
  position: myLatLng,
  map: map,
  title: "This is London",
  draggable: true,
  animation: google.maps.Animation.DROP
//ANIMATION

}
var marker1 = new
google.maps.Marker(marker1Options);

//create InfoWindow
var contentString = "<div>This is an
InfoWindow</div>";
var infowindow = new google.maps.InfoWindow({
  content: contentString,
  maxWidth: 100
});

//add listener to the marker to show InfoWindow

marker1.addListener("click", function(){

```

```
        infowindow.open(map, marker1);
    });

    //create marker2
    var marker2Options = {
        position: {lat:52.1337, lng: -0.4577},
        title: "This is Bedford."
    }
    var marker2 = new
google.maps.Marker(marker2Options);

marker2.setAnimation(google.maps.Animation.BOUNCE);
    marker2.setMap(map);
</script>
</body>

</html>
```



SHOW, HIDE OR DELETE MARKERS

```
<!DOCTYPE html>
<html>
  <head>
    <title>Show, hide, delete markers</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <button onclick="showMarkers();">Show Existing
Markers</button>
    <button onclick="clearMarkers();">Hide Markers
from the map</button>
    <button onclick="deleteMarkers();">remove Markers
Completely</button>
```

```
<script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
<script>

    //set map options
    var myLatLng = {lat: 51.5, lng: -0.1};
    var mapOptions = {
        center: myLatLng,
        zoom: 7,
        mapTypeId: google.maps.MapTypeId.SATELLITE

    };

    //create map
    var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

    //setting the mapTypeId upon construction
map.setMapTypeId(google.maps.MapTypeId.ROADMAP);


    //create marker1
    var marker1Options = {
        position: myLatLng,
        map: map,
        title: "This is London",
        draggable: true,
        animation: google.maps.Animation.DROP
//ANIMATION

    }
    var marker1 = new
google.maps.Marker(marker1Options);

    //create InfoWindow
    var contentString = "<div>This is an
InfoWindow</div>";
    var infowindow = new google.maps.InfoWindow({
        content: contentString,
```

```

        maxWidth: 100
    });

    //add listener to the marker to show InfoWindow

    marker1.addListener("click", function(){
        infowindow.open(map, marker1);
    });


    //create marker2
    var marker2Options = {
        position: {lat:52.1337, lng: -0.4577},
        title: "This is Bedford."
    }
    var marker2 = new
google.maps.Marker(marker2Options);

marker2.setAnimation(google.maps.Animation.BOUNCE);
marker2.setMap(map);


    //remove markers
    marker1.setMap(null);
    marker2.setMap(null);


    //create array where we store markers
    var markers = [];
    //create marker once we click on a point on
the map
    map.addListener("click", function(event){
        var markerOptions = {
            position: event.latLng,
            map: map
        }
        var marker = new
google.maps.Marker(markerOptions);
        //store marker in array
        markers.push(marker);
    });

```

```
        //show markers stored in the array
        function showMarkers(){
            for(var i=0; i<markers.length; i++){
                markers[i].setMap(map);
            }
        }

        //hide markers from the map (they are still in
the array)
        function clearMarkers(){
            for(var i=0; i<markers.length; i++){
                markers[i].setMap(null);
            }
        }

        //delete markers from the array
        function deleteMarkers(){
            clearMarkers();
            markers = [];
        }
    </script>
</body>

</html>
```



ANIMATED DROP OF MARKERS

```
<!DOCTYPE html>
<html>
  <head>
    <title>markers animation</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <button onclick="showMarkers();">Show Existing
Markers</button>
    <button onclick="clearMarkers();">Hide Markers
from the map</button>
    <button onclick="deleteMarkers();">remove Markers
Completely</button>
```

```
<script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
<script>

    //set map options
    var myLatLng = {lat: 51.5, lng: -0.1};
    var mapOptions = {
        center: myLatLng,
        zoom: 7,
        mapTypeId: google.maps.MapTypeId.SATELLITE

    };

    //create map
    var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

    //setting the mapTypeId upon construction
map.setMapTypeId(google.maps.MapTypeId.ROADMAP);


    //create marker1
    var marker1Options = {
        position: myLatLng,
        map: map,
        title: "This is London",
        draggable: true,
        animation: google.maps.Animation.DROP
//ANIMATION

    }
    var marker1 = new
google.maps.Marker(marker1Options);

    //create InfoWindow
    var contentString = "<div>This is an
InfoWindow</div>";
    var infowindow = new google.maps.InfoWindow({
        content: contentString,
```

```

        maxWidth: 100
    });

    //add listener to the marker to show InfoWindow

    marker1.addListener("click", function(){
        infowindow.open(map, marker1);
    });


    //create marker2
    var marker2Options = {
        position: {lat:52.1337, lng: -0.4577},
        title: "This is Bedford."
    }
    var marker2 = new
google.maps.Marker(marker2Options);

marker2.setAnimation(google.maps.Animation.BOUNCE);
marker2.setMap(map);


    //remove markers
    marker1.setMap(null);
    marker2.setMap(null);


    //create array where we store markers
    var markers = [];
    //create marker once we click on a point on
the map
    map.addListener("click", function(event){
        var markerOptions = {
            position: event.latLng,
            map: map
        }
        var marker = new
google.maps.Marker(markerOptions);
        //store marker in array
        markers.push(marker);
    });

```

```
        //show markers stored in the array
        function showMarkers(){
            for(var i=0; i<markers.length; i++){
                addMarkerwithDelay(i);
            }
        }

        function addMarkerwithDelay(i){
            setTimeout(function(){
                markers[i].setMap(map);

markers[i].setAnimation(google.maps.Animation.DROP);

                }, 200*i);
            }

        //hide markers from the map (they are still in
the array)
        function clearMarkers(){
            for(var i=0; i<markers.length; i++){
                markers[i].setMap(null);
            }
        }

        //delete markers from the array
        function deleteMarkers(){
            clearMarkers();
            markers = [];
        }
    </script>
</body>

</html>
```



DIRECTION SERVICE

ACTIVITY: DRIVING DISTANCE & TIME BETWEEN NEW YORK & TORONTO

DEVELOPMENT ISLAND
help@completewebdevelopmentcourse.co.uk

```
<!DOCTYPE html>
<html>
  <head>
    <title>Direction service</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <button onclick="calcRoute();">Calculate
Route</button>
    <script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
    <script>
```

```
//set map options
var myLatLng = {lat: 51.5, lng: -0.1};
var mapOptions = {
  center: myLatLng,
  zoom: 7,
  mapTypeId: google.maps.MapTypeId.ROADMAP
};

//create map
var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

//create a DirectionsService object to use the
route method and get a result for our request
var directionsService = new
google.maps.DirectionsService();

//create a DirectionsRenderer object which we
will use to display the route
var directionsDisplay = new
google.maps.DirectionsRenderer();

//bind the DirectionsRenderer to the map
directionsDisplay.setMap(map);

//define calcRoute function
function calcRoute(){
  var request = {
    origin: "New York",
    destination: "Toronto",
    travelMode:
google.maps.TravelMode.DRIVING, //WALKING, BYCYCLING,
TRANSIT
    unitSystem:
google.maps.UnitSystem.METRIC
  }

  //pass the request to the route method
  directionsService.route(request,
function(result, status){
```

```
        if(status ==
google.maps.DirectionsStatus.OK){
            console.log(result);

            //Get distance and time
            window.alert("The travelling distance
is " + result.routes[0].legs[0].distance.text + "<br
/>The travelling time is: " +
result.routes[0].legs[0].duration.text + ".");

            //display route

directionsDisplay.setDirections(result);
        }
    });
}

</script>
</body>

</html>
```



GEOCODING USING JAVASCRIPT API

ACTIVITY: GET GEOGRAPHIC COORDINATES OF AN ADDRESS

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```
<!DOCTYPE html>
<html>
  <head>
    <title>Geocoding using Google Maps Javascript
API</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <input type="text" placeholder="Address"
id="address">
    <button onclick="geocodeAddress();">geocode
Address</button>
```

```

<script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
<script>

    //set map options
    var myLatLng = {lat: 51.5, lng: -0.1};
    var mapOptions = {
        center: myLatLng,
        zoom: 7,
        mapTypeId: google.maps.MapTypeId.ROADMAP

    };

    //create map
    var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);
    //create a geocoder object to use the geocode
method
    var geocoder = new google.maps.Geocoder();

    //create geocode function
    function geocodeAddress(){
        geocoder.geocode({'address':
document.getElementById("address").value},
function(results, status){
        if(status ==
google.maps.GeocoderStatus.OK){
            console.log(results);
            window.alert("Address coordinates:
" + results[0].geometry.location);

            map.setCenter(results[0].geometry.location);
            var marker = new
google.maps.Marker({
                map: map,
                position:
results[0].geometry.location
            });
        }else{

```

```
                                window.alert("Geocode not
successful: " + status);
                                }
                            });
                        }
                    </script>
                </body>

</html>
```



GEOCODING USING GEOCODING API

ACTIVITY: FORMAT ANY ADDRESS, GET GEOGRAPHIC COORDINATES AND POSTCODE

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```
<!DOCTYPE html>
<html>
  <head>
    <title>Geocoding API</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <input type="text" placeholder="Address"
id="address">
    <button onclick="geocodeAddress();">geocode
Address</button>
    <div id="output"></div>
```

```

<script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q"></script>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/j
query.min.js"></script>
<script>

    //set map options
    var myLatLng = {lat: 51.5, lng: -0.1};
    var mapOptions = {
        center: myLatLng,
        zoom: 7,
        mapTypeId: google.maps.MapTypeId.ROADMAP

    };

    //create map
    var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

    //define marker variable
    var marker;
    //geocode function
    function geocodeAddress(){
        var url =
"https://maps.googleapis.com/maps/api/geocode/json?address
="+document.getElementById("address").value+"&key=AIzaSyCw
J2Vepe9L2Mih7QH87SR_RItIXHlX6Q";
        //
        window.open(url);

        $.getJSON(url, function(data){
            if(data.status == "OK"){
                var formattedAddress =
data.results[0].formatted_address;
                var latitude =
data.results[0].geometry.location.lat;
                var longitude =
data.results[0].geometry.location.lng;
                var postcode;

```

```

$.each(data.results[0].address_components, function(index,
element){
    if(element.types ==
"postal_code"){
        postcode = element.long_name;
        return false; //stop the loop
    }
});

$("#output").html("<b>Formatted
Address</b>:" + formattedAddress + "<br
/><b>Coordinates</b>: (lat: " + latitude + ", lng: " +
longitude + ").<br /><b>Postcode</b>: " + postcode + ".");

//center map
map.setCenter({lat:
latitude,lng:longitude});
//change zoom level
map.setZoom(14);

//if marker is there delete it
if(marker != undefined){
    marker.setMap(null);
}
//create marker
marker = new google.maps.Marker({
    map: map,
    position: {lat:
latitude,lng:longitude},
    animation:
google.maps.Animation.DROP
});

}else{
    $("#output").html("Request
unsuccessful");
}
});
}

```

```
        </script>
    </body>

</html>
```



NEARBY SEARCH

```
<!DOCTYPE html>
<html>
  <head>
    <title>nearby search</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q&libraries=places"></script>
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/j
query.min.js"></script>
    <script>
```

```

//set map options
var myLatLng = {lat: 51.5, lng: -0.1};
var mapOptions = {
  center: myLatLng,
  zoom: 15,
  mapTypeId: google.maps.MapTypeId.ROADMAP
};

//create map
var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

//create infowindow
var infowindow = new google.maps.InfoWindow();

//define a request, the location must be
defined using google.maps.LatLng

var london = new google.maps.LatLng(51.5, -
0.1);
var request = {
  location: london,
  radius: '500',
  types: ['store']
}

//create a placesService object before using
the nearbysearch method
var service = new
google.maps.places.PlacesService(map);

service.nearbySearch(request, callback);

//define the callback function showing what we
do with the results

function callback(result, status){
  if(status ==
google.maps.places.PlacesServiceStatus.OK){

```

```

        console.log(result);
        for(i =0; i<result.length; i++){
            addMarker(result[i]);
        }
    }
}

//add a marker for each place in the result
array
function addMarker(place){
    var marker = new google.maps.Marker({
        map: map,
        position: place.geometry.location,
        animation:
google.maps.Animation.DROP
    });
    google.maps.event.addListener(marker,
"click", function(){
        infowindow.setContent(place.name);
        infowindow.open(map, this);
    })
}
</script>
</body>

</html>

```

AUTOCOMPLETE

```
<!DOCTYPE html>
<html>
  <head>
    <title>Autocomplete</title>
    <meta name="viewport" content="initial-scale=1.0,
user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body{
        height:100%;
      }
      #map{
        height:60%;
      }
    </style>
  </head>

  <body>
    <div id="map"></div>
    <input type="text" id="cityInput"
placeholder="City">
    <script
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyCwJ
2Vepe9L2Mih7QH87SR_RItIXHlX6Q&libraries=places"></script>
```

```
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/j
query.min.js"></script>
<script>

    //set map options
    var myLatLng = {lat: 51.5, lng: -0.1};
    var mapOptions = {
        center: myLatLng,
        zoom: 7,
        mapTypeId: google.maps.MapTypeId.ROADMAP

    };

    //create map
    var map = new
google.maps.Map(document.getElementById('map'),
mapOptions);

    //create autocomplete object
    var input =
document.getElementById("cityInput");
    var options = {
        types: ['(cities)']
    }
    var autocomplete = new
google.maps.places.Autocomplete(input, options);

autocomplete.addListener('place_changed',onPlaceChanged);
    function onPlaceChanged(){

        var place = autocomplete.getPlace();
        map.panTo(place.geometry.location);
    }
</script>
</body>

</html>
```