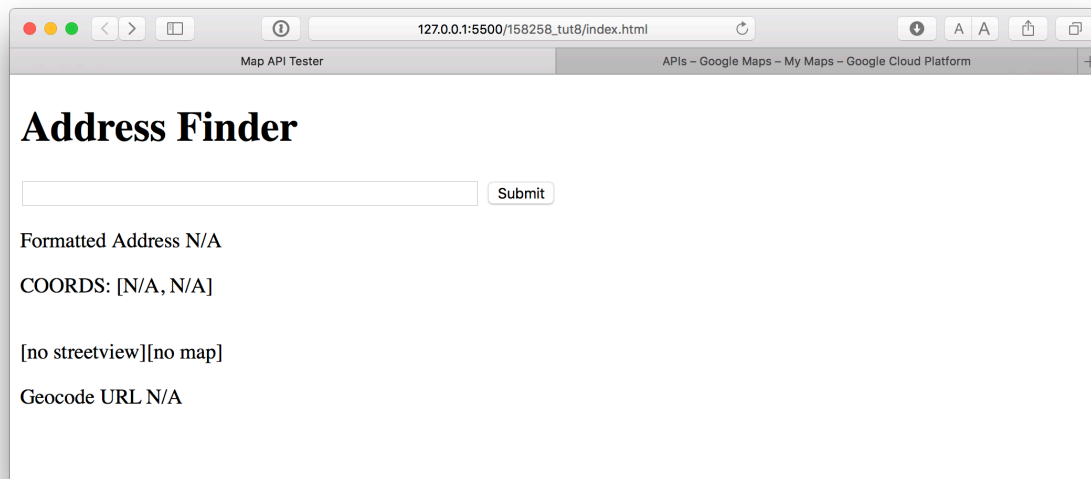


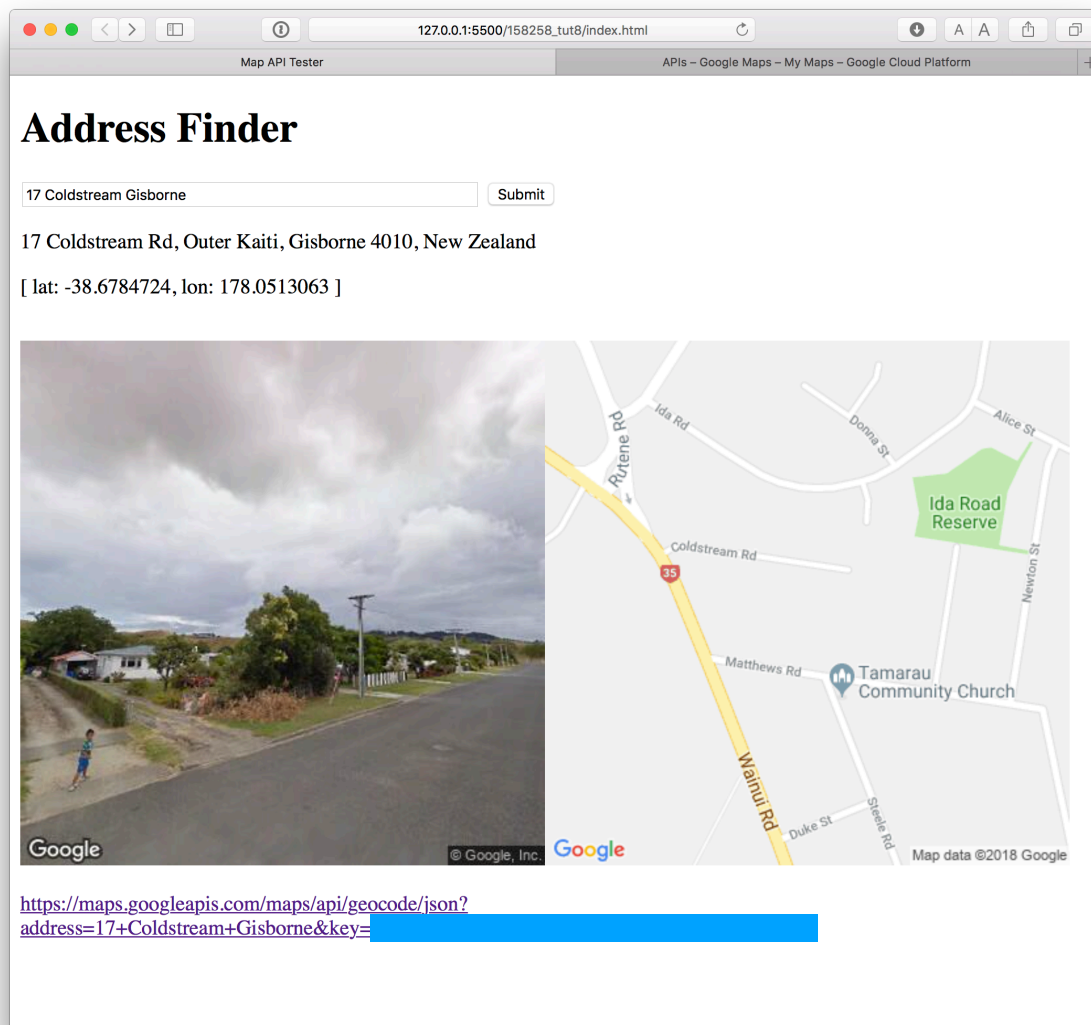
## 158.258 Tutorial 8 — Build an “Address Finder” with Google Map APIs.

READ WHOLE DOCUMENT BEFORE STARTING !!

1. Your website start state should look similar to this;



2. Add any “freeform” address to the input box to get results similar to the following;



3. Download with **index.html** as your starting point, this will need to be completed. For the purpose of this exercise, keep your scripts in this file (do not create external files).

4. The following function is included in index.html;

```
function displayLocationInfo(geocodeURL, addressElementID, coordElementID)
    var xmlhttp = new XMLHttpRequest();
    xmlhttp.onreadystatechange = function() {
        if (this.readyState == 4 && this.status == 200) {
            var myObj = JSON.parse(this.responseText);
            document.getElementById(addressElementID).innerHTML =
                myObj.results[0].formatted_address;
            document.getElementById(coordElementID).innerHTML =
                "[ lat: " +
                myObj.results[0].geometry.location.lat + ", lon: " +
                myObj.results[0].geometry.location.lng + " ]";
        }
    }
    xmlhttp.open("GET", geocodeURL, true);
    xmlhttp.send();
}
```

You have not covered all this code in lectures, so do not be alarmed if it is not immediately clear to you!

Reference: [https://www.w3schools.com/Js/js\\_json\\_parse.asp](https://www.w3schools.com/Js/js_json_parse.asp)

4. Use your knowledge of Javascript and Google Map APIs to complete the missing code. You will need to enable the following APIs; Static Maps API, Geocoding API, and the Streetview API. Helpful documentation for these APIs are available from your Google Cloud console.

6. Clicking the link shown at the bottom of the example web page, should open a separate page/tab that reveals "geocoding" information for your address. The text should be the same as URL. The following output is the output for the search example above. Refer to the Geocoding API documentation for more information.

```

{
  "results" : [
    {
      "address_components" : [
        {
          "long_name" : "17",
          "short_name" : "17",
          "types" : [ "street_number" ]
        },
        {
          "long_name" : "Coldstream Road",
          "short_name" : "Coldstream Rd",
          "types" : [ "route" ]
        },
        {
          "long_name" : "Outer Kaiti",
          "short_name" : "Outer Kaiti",
          "types" : [ "political", "sublocality", "sublocality_level_1" ]
        },
        {
          "long_name" : "Gisborne",
          "short_name" : "Gisborne",
          "types" : [ "locality", "political" ]
        },
        {
          "long_name" : "Gisborne",
          "short_name" : "Gisborne",
          "types" : [ "administrative_area_level_1", "political" ]
        },
        {
          "long_name" : "New Zealand",
          "short_name" : "NZ",
          "types" : [ "country", "political" ]
        },
        {
          "long_name" : "4010",
          "short_name" : "4010",
          "types" : [ "postal_code" ]
        }
      ],
      "formatted_address" : "17 Coldstream Rd, Outer Kaiti, Gisborne 4010, New Zealand",
      "geometry" : {
        "location" : {
          "lat" : -38.6784724,
          "lng" : 178.0513063
        },
        "location_type" : "ROOFTOP",
        "viewport" : {
          "northeast" : {
            "lat" : -38.6771234197085,
            "lng" : 178.0526552802915
          },
          "southwest" : {
            "lat" : -38.6798213802915,
            "lng" : 178.0499573197085
          }
        }
      },
      "place_id" : "ChIJbe0b_P94Zm0Ra3P3pUAixAE",
      "types" : [ "street_address" ]
    }
  ],
  "status" : "OK"
}

```