Fixing Cross-Origin (CORS) Errors

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COMS4170

Example Request

- Works in your browser!
- Try it yourself:
 https://geocoding.geo.census.gov/geocoder/locations/onelineaddress?address=4600+Silver+Hill+Rd%2C+Suitland%2C+MD+20746&benchmark=9&format=json

```
{
  - result: {
      - input: {
          - address: {
                address: "4600 Silver Hill Rd, Suitland, MD 20746"
            },
          - benchmark: {
                benchmarkDescription: "Public Address Ranges - Census 2010 Benchmark",
                isDefault: false,
                benchmarkName: "Public_AR_Census2010",
                id: "9"
            }
        },
      - addressMatches: [
          - {
                matchedAddress: "4600 Silver Hill Rd, SUITLAND, MD, 20746",
              - coordinates: {
                    x: -76.92691,
                    y: 38.846542
                },
              - tigerLine: {
                    tigerLineId: "613199520",
                    side: "L"
                },
              - addressComponents: {
                    zip: "20746",
                    city: "SUITLAND",
                    state: "MD",
                    fromAddress: "4600",
                    toAddress: "4712",
                    preQualifier: "",
                    preDirection: "",
                    preType: "",
                    streetName: "Silver Hill",
                    suffixType: "Rd",
                    suffixDirection: "",
                    suffixQualifier: ""
                }
            }
        ]
    }
}
```

What's wrong with this?

```javascript
// what's wrong with this?
function validateAddress(query){
 $.ajax({
    url: "https://geocoding.geo.census.gov/geocoder/locations/onelineaddress?format=json",
    dataType: "json",
    data: {
        address: query,
        benchmark: 9,
    },
    success: function(response){
        console.log(response);
      $("#validated-address").text(response.result.addressMatches[0].matchedAddress);
    }
 });
}
```

But... CORS error!
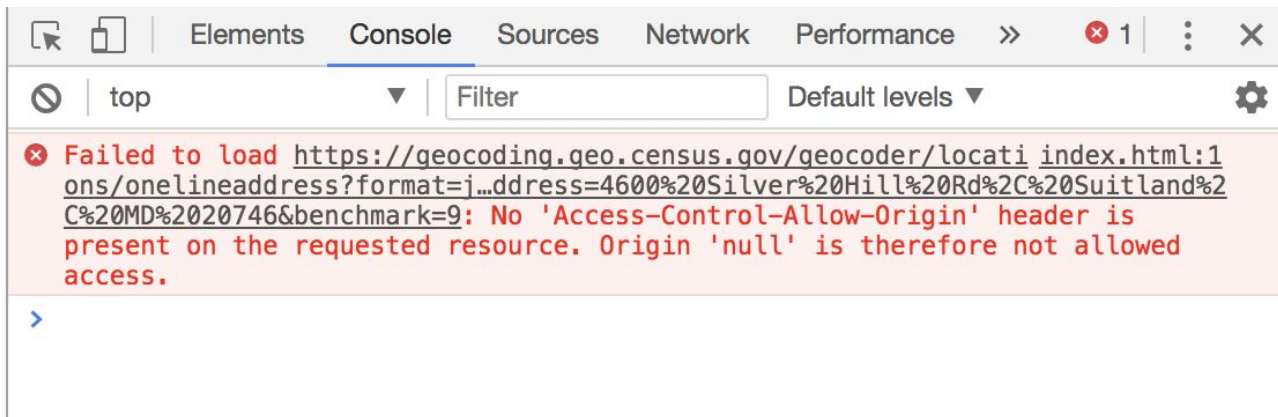
Why?

- CORS = cross origin resource sharing

- Allows restricted resources on a web page to be requested from another domain outside the domain from which the first resource was served

- Common when working with APIs. Some StackOverflow questions

A nice hack: JSONP

- The Geocoding API provides [JSONP support](#)

- "The advent of JSONP — essentially a consensual cross-site scripting hack — has opened the door to powerful mashups of content. Many prominent sites provide JSONP services, allowing you access to their content via a predefined API."

- Enables sharing of data bypassing [same-origin policy](#)

- [More details](#)

JSONP Fix

```javascript
function validateAddress(query){
 $.ajax({
    url: "https://geocoding.geo.census.gov/geocoder/locations/onelineaddress?format=jsonp",
    dataType: "jsonp",
    data: {
        address: query,
        benchmark: 9,
    },
    success: function(response){
      console.log(response);
     $("#validated-address").text(response.result.addressMatches[0].matchedAddress);
    }
 });
}
```

Check out the code

https://github.com/frogbandit/COMS4170-teaching