Data Representation
Lab 4: JSON and AJAX (with jQuery)

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JSON

1. Create a file called Lab01-simpleJSON.html.
2. Write the code that will convert the following JSON into a javascript object,

```
{

    "isbn":1234567,

    "Author": "Andrew Beatty",

    "Title" : "the emptness of ping-pong balls"

}
```

And prints out the name of the author to the console. (You can link this code to a button or have it so that it runs when the page is loaded)

```
    <script>
        var obj = JSON.parse('{"isbn": 1234567, "Author": "A
ndrew Beatty","Title" : "the emptness of ping-pong balls"}')

        console.log(obj.Title)

    </script>
```

3. In a file called Lab02-json-array.html. Write the code that will convert the following JSON into a javascript object (array),

```
{"employees": [{"firstName": "John", "lastName": "Doe"},{
"firstName": "Anna","lastName": "Smith"},{"firstName": "Peter",
"lastName": "Jones"}]}
```

And then using a for loop print out each of the first names to the console

```
 <body>
    <button onclick="displayJSON()">go</button>
</body>
<script>
    function displayJSON(){
        var obj = JSON.parse('{"employees": [{"firstName": "Jo
hn", "lastName": "Doe"},{ "firstName": "Anna","lastName": "Smith"}
,{"firstName": "Peter","lastName": "Jones"}]}')
        for (employee of obj.employees){
            console.log(employee.firstName)
        }
    }
</script>
```

AJAX

4. Write a web page (Lan03-ajax-readsimple.html), that uses AJAX to read the JSOn from the website `https://api.coindesk.com/v1/bpi/currentprice.json`

```
<html>
    <head>
        <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.
min.js"></script>
        <title>
            read a simple json
        </title>
    </head>
    <body>
        <button onclick="readJSON()">go</button>
    </body>
    <script>
        function readJSON(){
            $.ajax({
                "url": "https://api.coindesk.com/v1/bpi/currentprice.json ",
                "method":"GET",
                "data":"",
                "dataType": "JSON",
                "success":function(result){
                    console.log(result);
                },
                "error":function(xhr,status,error){
                    console.log("error: "+status+" msg:"+error);
                }
            });

        }
    </script>
</html>
```

5. Modify the webpage to output the euro rate for bit coin to the page, you will need to look at the JSON that the page returns and work out what you are looking for.


```
{
    "time": {
        "updated": "Oct 16, 2019 15:43:00 UTC",
        "updatedISO": "2019-10-16T15:43:00+00:00",
        "updateduk": "Oct 16, 2019 at 16:43 BST"
    },
    "disclaimer": "This data was produced from the CoinDesk Bitcoin Price Index
 (USD). Non-
USD currency data converted using hourly conversion rate from openexchangerates
.org",
    "chartName": "Bitcoin",
    "bpi": {
        "USD": {
            "code": "USD",
            "symbol": "&#36;",
            "rate": "7,979.8633",
            "description": "United States Dollar",
            "rate_float": 7979.8633
        },
        "EUR": {
            "code": "EUR",
            "symbol": "&euro;",
            "rate": "7,220.6990",
            "description": "Euro",
            "rate_float": 7220.699
        }
    }
}
```


```
var rate = result.bpi.EUR.rate
 console.log(rate);
 document.getElementById("output").innerText = rate;
```

6. Modify the code to print out the US dollar rate and the British pound rate.

Extra

7. Here is the URL for another cryptocurrency, print out the dollar price to a webpage

https://min-api.cryptocompare.com/data/price?fsym=ETH&tsyms=BTC,USD,EUR