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CS20 - Web Programming
Professor DiOrio
Assignment 9: JSON Song List

Online Links

<https://mattia-danese.github.io/CS20/hw9/index.html>

Questions

1. I do like XML as a means for representing data, but would not pick it over the much more common JSON representation. Like JSON, XML can be very nice as the user can completely dictate the structure of the data and the elements used. This, however, also leads to its downfall because representing a lot of data with many different fields/attributes will soon become tedious. The edge that JSON has over XML is the great and efficient integration with Javascript. Being able to represent data as an object is very useful since you can just use the `object.property` notation to access the different JSON fields. Thus, I prefer JSON over XML.

HTML Code

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>JSON Song List</title>

  <link rel = "stylesheet" href = "../style.css" />
  <script src="../script.js"></script>

</head>
<body onload="initialize();">
  <h1>JSON Song List</h1>

  <h3>JSON Data as a Raw String:</h3>
  <div id="raw"></div>

  <div class="container">
    <div id="c1">
      <h3>User Friendly Display of JSON Data:</h3>
      <div id="nice"></div>
    </div>

    <div id="c2">
      <h3>Filter JSON Data:</h3>
      <form>
        <span>Pick the genre you want to filter by:</span>
        <select name="genres" id="genres">
          <option value="Pop">Pop</option>
          <option value="Rock">Rock</option>
          <option value="R&B/Soul">R&B/Soul</option>
          <option value="Reggaetón">Reggaetón</option>
          <option value="Holiday">Holiday</option>
          <option
value="Alternative/Indie">Alternative/Indie</option>
          <option value="Children's Music">Children's Music</option>
          <option value="Folk">Folk</option>
          <option value="Jazz">Jazz</option>
        </select>

        <button type="button" onclick="filter();">Filter</button>
      </form>
    </div>
  </div>
</body>
</html>
```

```
        </form>
        <br>
        <div id="filter"></div>
    </div>
</div>
</body>
</html>
```

Javascript Code

```
async function getData(){
    const res = await
    fetch('https://mattia-danese.github.io/CS20/hw9/data.json');
    let data = await res.json();
    return data
}

async function initialize(){
    let data = await getData();

    str = JSON.stringify(data);
    document.getElementById("raw").innerHTML = str;

    let niceOutput = function () {
        let songs = data.Songs;
        let output = "";
        for(i=0; i < songs.length; i++){
            output += "<div>";
            let song = songs[i];

            output += "Title: " + song.title + "<br>";
            output += "Artists: " + song.artists.join(' ') + "<br>";
            output += "Genres: " + song.genres.join(', ') + "<br>";
            output += "Released: " + song.year + "<br>";
            output += "<br>";
            output += "</div>";
        }

        document.getElementById("nice").innerHTML = output;
    }
    niceOutput();
}

async function filter() {
    let data = await getData();

    let genre = document.getElementById("genres").value;
    let songs = data.Songs;
    let output = "";
    let count = 1;

    for(i=0; i < songs.length; i++){
```

```
    let song = songs[i];
    if(song.genres.includes(genre)){
        output += "<div>";

        output += (count + ". ");
        output += song.title;
        count += 1;
        output += "</div>";
        output += "<br>";
    }
}

document.getElementById("filter").innerHTML = output;
document.getElementById("filter").style = "margin-bottom: 30px;";
}
```

JSON Data

```
{
  "Songs": [
    {
      "artists": ["Christina Perri"],
      "title": "A Thousand Years",
      "genres": ["Pop"],
      "year": "2011"
    },
    {
      "artists": ["Bon Jovi"],
      "title": "Livin' on a Prayer",
      "genres": ["Rock"],
      "year": "1986"
    },
    {
      "artists": ["Bruno Mars"],
      "title": "Marry You",
      "genres": ["R&B/Soul"],
      "year": "2011"
    },
    {
      "artists": ["Ed Sheeran"],
      "title": "Perfect",
      "genres": ["Pop"],
      "year": "2017"
    },
    {
      "artists": ["John Legend"],
      "title": "All of Me",
      "genres": ["R&B/Soul"],
      "year": "2013"
    },
    {
      "artists": ["Bad Bunny", "Sech"],
      "title": "Ignorantes",
      "genres": ["Reggaetón"],
      "year": "2020"
    },
    {
      "artists": ["Louis Armstrong"],
      "title": "What a Wonderful World",
      "genres": ["Holiday"],

```

```
    "year": "1968"
  },
  {
    "artists": ["The Beatles"],
    "title": "I Want to Hold Your Hand",
    "genres": [
      "R&B/Soul",
      "Alternative/Indie",
      "Children's Music",
      "Folk",
      "Pop",
      "Rock"
    ],
    "year": "1964"
  },
  {
    "artists": ["Miles Davis"],
    "title": "All Blues",
    "genres": ["Jazz"],
    "year": "1959"
  },
  {
    "artists": ["Jack Brooks", "Harry Warren"],
    "title": "That's Amore",
    "genres": ["Pop", "Holiday"],
    "year": "1953"
  }
]
}
```

CSS Code

```
body{
    text-align: left;
    background-color: #E8ECFF;
}

h1{
    text-align: center;
    text-decoration: underline;
}

body:nth-child(2){
    text-align: center;
}

.container{
    display: table;
    text-align: center;
    margin: auto;
}

#c1, #c2{
    display: table-cell;
}

#filter div{
    float: left;
}

button{
    padding: 10px;
    border-radius: 10px;
    font-size: large;
    background-color: purple;
    color: white;
}
```