

Build a Dynamic Web Page Using JavaScript and AJAX to Fetch Data

Step 1: Set Up Your Development Environment

- **Install a Code Editor:** Download and install a code editor like Visual Studio Code, Sublime Text, or Atom.
- **Create a Project Folder:** Create a new folder on your computer to store your project files.

Step 2: Create the Basic HTML Structure

- **Create an HTML File:** In your project folder, create a file named `index.html`.
- **Add Basic HTML Structure:** Open `index.html` in your code editor and add the basic HTML structure:

CODE:-

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Dynamic Web Page</title>

  <link href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
rel="stylesheet">

  <link href="styles.css" rel="stylesheet">

</head>

<body>

  <div class="container">

    <h1 class="my-4">Dynamic Data Fetching with AJAX</h1>

    <button id="fetchDataBtn" class="btn btn-primary mb-4">Fetch Data</button>

    <div id="dataContainer"></div>

  </div>

  <script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>

  <script src="scripts.js"></script>

</body>

</html>
```

Step 3: Add Custom CSS

- **Create a CSS File:** In your project folder, create a file named `styles.css`.
- **Add Custom Styles:** Open `styles.css` in your code editor and add custom styles:

CODE:-

```
body {  
    font-family: Arial, sans-serif;  
    background-color: #f8f9fa;  
    padding-top: 20px;  
}
```

```
#dataContainer {  
    margin-top: 20px;  
}
```

Step 4: Create a JavaScript File

- **Create a JavaScript File:** In your project folder, create a file named `scripts.js`.
- **Add AJAX Functionality:** Open `scripts.js` in your code editor and add the following code to fetch data dynamically using AJAX:

CODE:-

```
document.getElementById('fetchDataBtn').addEventListener('click', fetchData);
```

```
function fetchData() {  
    const xhr = new XMLHttpRequest();  
    xhr.open('GET', 'https://jsonplaceholder.typicode.com/posts', true);  
  
    xhr.onload = function() {  
        if (this.status === 200) {  
            const posts = JSON.parse(this.responseText);
```

```
let output = '';
```

```
posts.forEach(function(post) {
```

```
  output += `
```

```
    <div class="card mb-3">
```

```
      <div class="card-body">
```

```
        <h5 class="card-title">${post.title}</h5>
```

```
        <p class="card-text">${post.body}</p>
```

```
      </div>
```

```
    </div>
```

```
  `;
```

```
});
```

```
document.getElementById('dataContainer').innerHTML = output;
```

```
}
```

```
};
```

```
xhr.onerror = function() {
```

```
  console.error('Request error...');
```

```
};
```

```
xhr.send();
```

```
}
```

Step 5: Test and Refine

- **Open the HTML File in a Browser:** Open `index.html` in a web browser to view your dynamic web page.
- **Fetch Data:** Click the "Fetch Data" button to fetch data from the external API and display it dynamically on the web page.
- **Refine the Design:** Make any necessary adjustments to the HTML, CSS, and JavaScript to improve the functionality and appearance of your dynamic web page.

Step 6: Add Error Handling (Optional)

- **Enhance Error Handling:** Update the JavaScript code to handle potential errors gracefully

CODE:-

```
function fetchData() {

    const xhr = new XMLHttpRequest();

    xhr.open('GET', 'https://jsonplaceholder.typicode.com/posts', true);

    xhr.onload = function() {

        if (this.status === 200) {

            const posts = JSON.parse(this.responseText);

            let output = "";

            posts.forEach(function(post) {

                output += `

                <div class="card mb-3">

                    <div class="card-body">

                        <h5 class="card-title">${post.title}</h5>

                        <p class="card-text">${post.body}</p>

                    </div>

                </div>

            `;

            }

            document.getElementById("output").innerHTML = output;
        }
    }
}
```

```

        `;

    });

    document.getElementById('dataContainer').innerHTML = output;

    } else {

        document.getElementById('dataContainer').innerHTML = '<p class="text-danger">Error
fetching data</p>';

    }

};

xhr.onerror = function() {

    document.getElementById('dataContainer').innerHTML = '<p class="text-danger">Request
error...</p>';

};

xhr.send();

}

```

Step 7: Publish Your Web Page

- **Choose a Hosting Service:** Select a web hosting service like GitHub Pages, Netlify, or Vercel to publish your web page.
- **Deploy Your Site:** Follow the hosting service's instructions to deploy your dynamic web page, making it accessible online.

By following these steps, you'll create a dynamic web page using JavaScript and AJAX to fetch and display data from an external source.