Course Overview

Course Details

Course Name: AJAX: The Complete Guide to Asynchronous JavaScript

Instructor: Alex Ray

Created On: 16 June, 2025

Updated On: 16 June, 2025

Price: 1000 INR

Duration: 3 Days

Modules: 9

Language: English, Hindi

Level: Intermediate

Certifications: Yes

Course Description

This course provides a complete understanding of AJAX (Asynchronous JavaScript and XML), the core technology that powers every modern, dynamic web application. You will learn how to make background requests to a server to retrieve data and update parts of a web page without needing a full refresh.

We start with the fundamentals, exploring the core `XMLHttpRequest` object to understand how AJAX works at its lowest level. We then move into **jQuery's `$.ajax()` and its shorthand methods** as a common approach to simplify AJAX. Following that, we transition to the modern standard: the `Fetch API`, a powerful and flexible interface for making web requests.

You'll learn how to handle Promises, process different data formats like JSON and text, and implement robust error handling.

The curriculum also covers how to interact with third-party REST APIs to bring external data into your applications. We'll explore security considerations like CORS and demonstrate how libraries like Axios can further simplify AJAX calls. By the end, you'll be able to build fast, responsive, and professional web applications that feel like native desktop apps.

What You'll Learn:

- The core principles of AJAX and asynchronous programming.
- Making requests with the foundational `XMLHttpRequest` object.
- **Comprehensive coverage of jQuery's AJAX methods (`$.ajax()`, `$.get()`, `$.post()`, `$.load()`).**
- Mastering the modern `Fetch API` and working with Promises and Async/Await.
- Handling different data formats (JSON, Text, XML, FormData).
- Robust error handling for network requests.
- Interacting with third-party REST APIs.
- Understanding and dealing with CORS issues.
- Using other libraries like Axios to simplify AJAX.
- Best practices for building responsive and efficient web applications.

Who Is This Course For?

This course is for any web developer who wants to build dynamic applications. It's an essential skill for front-end and full-stack developers. A solid understanding of JavaScript fundamentals (including functions, basic data types, and asynchronous concepts like callbacks) is required.

Prerequisites:

- **Solid JavaScript Fundamentals:** A strong understanding of core JavaScript concepts including variables, data types, functions, objects, arrays, and basic asynchronous concepts (callbacks).
- **Basic HTML & CSS:** Familiarity with HTML structure and basic CSS styling.
- **A Computer/Laptop:** A working computer (Windows, macOS, or Linux) with an internet connection.
- **Basic Understanding of HTTP:** Familiarity with what HTTP requests and responses are.
- **A Willingness to Learn:** Enthusiasm for building dynamic web applications.

Features practical projects like a real-time search feature and a weather app that fetches live data. Certificate of completion available. Available in English and Hindi.

Course Curriculum Details

Module 1: Module 1: Understanding Asynchronous Web Communication

5 Lessons

1. 1. What is Synchronous vs. Asynchronous Programming?   **15min**

2. 2. Introduction to AJAX: History, Principles, and Why it's Important   **20min**

3. 3. The Client-Server Model and HTTP Basics (Methods, Status Codes)   **25min**

4. 4. Introduction to APIs and RESTful Concepts   **20min**

5. 5. Recap & Practical Task: Explore API Documentation   **30min**

Module 2: Module 2: The Core: XMLHttpRequest (XHR)

6 Lessons

1. 6. Creating and Sending Basic GET Requests with XHR   **30min**

2. 7. XHR `readyState` and `status` Properties   **25min**

3. 8. Handling XHR Events: `onload`, `onerror`, `onprogress`   **30min**

4. 9. Sending Data with XHR: POST and Other Methods   **25min**

5. 10. Understanding XHR's Callback-Based Nature and its Limitations   **20min**

6. 11. Recap & Practical Task: Fetch Data with XHR   **40min**

Module 3: Module 3: jQuery AJAX Integration

6 Lessons

1. 12. Introduction to jQuery AJAX: Why and When to Use It   **20min**

2. 13. The Comprehensive `$.ajax()` Method: Options and Callbacks   **30min**

3. 14. jQuery AJAX Shorthand Methods: `$.get()`, `$.post()`, `$.load()`   **25min**

4. 15. Handling Different Data Types with jQuery AJAX (JSON, XML, HTML, Text)   **20min**

5. 16. Global AJAX Event Handlers in jQuery (`ajaxStart`, `ajaxStop`, etc.)   **20min**

6. 17. Recap & Practical Task: Implement Data Fetching using jQuery AJAX   **45min**

Module 4: Module 4: The Modern Standard: Fetch API & Promises

6 Lessons

1. 18. Introduction to Fetch API: A Promise-Based Interface   **25min**

2. 19. Making Basic GET Requests with Fetch   **25min**

3. 20. Processing Responses: `response.json()`, `response.text()`, `response.blob()`, `response.formData()`   **35min**

4. 21. Chaining Promises for Sequential Asynchronous Operations   **30min**

5. 22. Handling Errors with `.catch()` and `response.ok` Property   **30min**

6. 23. Recap & Practical Task: Create a Simple Data Fetcher with Fetch and Promises   **50min**

Module 5: Module 5: Advanced Fetch & Request Configuration

6 Lessons

1. 24. Making POST, PUT, PATCH, and DELETE Requests with Fetch   **35min**

2. 25. Setting Request Headers (e.g., `Content-Type`, `Authorization`)   **25min**

3. 26. Sending Different Data Formats (JSON, FormData for File Uploads)   **30min**

4. 27. Advanced Request Options (`mode`, `cache`, `credentials`, `redirect`)   **25min**

5. 28. Aborting Fetch Requests with `AbortController`   **25min**

6. 29. Recap & Practical Task: Build a Form Submission with Fetch and File Upload   **1hr**

Module 6: Module 6: Simplifying Asynchronous Flow with Async/Await

6 Lessons

1. 30. Revisiting Promises for Context   **20min**

2. 31. The `async` and `await` Keywords for Cleaner Async Code   **35min**

3. 32. Error Handling with `try...catch` Blocks in `async/await`   **30min**

4. 33. Refactoring Fetch Calls to use `async/await`   **25min**

5. 34. Concurrent Async Operations with `Promise.all()` and `async/await`   **30min**

6. 35. Recap & Practical Task: Convert a Promise-based App to Async/Await   **50min**

Module 7: Module 7: Comprehensive Error Handling & Security Considerations

8 Lessons

1. 36. Comprehensive Error Handling Strategies for Network Requests **30min**

2. 37. Handling Different Types of Network Errors (e.g., Offline, Timeouts) **25min**

3. 38. What is CORS (Cross-Origin Resource Sharing)? **25min**

4. 39. Common CORS Issues and Solutions (Preflight Requests, Proxies - Conceptual) **30min**

5. 40. Introduction to Authentication (API Keys, Tokens, OAuth - Conceptual) **25min**

6. 41. Displaying Loading States, Success Messages, and Error Messages (UI Feedback) **30min**

7. 42. Rate Limiting and Throttling API Calls (Conceptual) **20min**

8. 43. Recap & Practical Task: Implement Robust Error Handling & UI Feedback **50min**

Module 8: Module 8: Other Popular AJAX Libraries

5 Lessons

1. 44. Simplifying Requests with Axios: Setup and Basic Usage **30min**

2. 45. Axios Configuration, Instance Creation, and Interceptors **35min**

3. 46. Axios Error Handling and Cancellation **25min**

4. 47. Brief Overview of Other AJAX Libraries (e.g., `ky`, `superagent`) **15min**

5. 48. Recap & Practical Task: Refactor a Fetch API App to use Axios **45min**

Module 9: Module 9: Capstone Projects

4 Lessons

1. 49. Project 1: Live Search Feature with Public API (Fetch/Async Await) **1hr 15min**

2. 50. Project 2: Dynamic Weather App (Geolocation, Multiple API Calls, UI Updates)
   1hr 30min

3. 51. Final Project Review and Submission   **45min**

4. 52. Recap & Course Conclusion   **30min**

This curriculum is subject to minor adjustments to ensure the most up-to-date and effective learning experience.