Communication with server using AJAX and Fetch API

Course code: JS_AJAX

AJAX (and its successor Fetch API) allow a web application to send data to and fetch data from a server using the HTTP protocol without refreshing the page. This course is designed for JavaScript programmers who want to understand not only the principles of HTTP but also how to handle asynchronous requests in a modern way in a variety of scenarios.

What we will teach you

- HTTP protocol, client-server communication
- From the 204 status code to the Fetch API
- Asynchronous requests and their processing
- HTTP protocol methods (GET, POST and others)
- XMLHttpRequest object
- Structured data (JSON, XML)
- Request cancellation, timeout
- Caching, redirection
- Upload and download monitoring
- Multiple requests and their processing
- Cookies and user login, security
- Fetch API, Promises, await, async
- Cross Domain Requests (CORS)
- Working with files
- Session-history management (Back button solution)

Required entry knowledge

- Basic knowledge of JavaScript at
- JS_PROG1
- course level.

Course outline

HTTP protocol
- client request, server response
- status codes (200, 301, 404, etc.)
- GET, POST, etc. methods
- HTTP headers you need to know
- development tools

Client-server communication without page refresh
- status code 204
- dynamically generated <script src="">
- XMLHttpRequest (XHR, AJAX)
- Fetch API
- briefly about other technologies (WebSockets, Server-Sent Events, WebRTC)

Processing asynchronous requests
- events: from readystatechange to load
- error conditions
- Promises
- await, async

Structured data
- enctype attribute, Content-Type header
- XML

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- JSON

Request timing
- timeout
- abort
- multiple requests

Caching, redirection

Actual download or upload progress

User login, cookies

Cross-domain requests (CORS)

Working with files
- files accessed by the user (input, drag&drop)
- file upload (FormData)
- file downloads (working with binary data)

Session-history management (Back button solution)

Fetch API - modern successor of AJAX