

# 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

#### GOPAS Praha

Kodářská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

#### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

#### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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# Communication with server using AJAX and Fetch API

- 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

## **GOPAS Praha**

Kodaňská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

## **GOPAS Brno**

Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

## **GOPAS Bratislava**

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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