

# Vue.js Axios

WASA: Web and Software Architecture

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AJAX

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**AJAX**, *Asynchronous JavaScript and XML*, is a set of technologies for incremental updates in web pages. It contains:

- HTML/XHTML/CSS
- JavaScript
- DOM
- XML/XSLT
- **XMLHttpRequest** (a.k.a. XHR)

**XMLHttpRequest** is an object for issuing web requests and get the result. Despite its name, it can be used even for non-XML requests/responses.

It's supported by every browser! Even Internet Explorer supports\* it!

If you use *vanilla* JavaScript and you want AJAX, chances are that you're using *XMLHttpRequest*.

\*although Internet Explorer supported XMLHttpRequest via the evil ActiveX

# XMLHttpRequest

## Usage example

```
let httpRequest;

function makeRequest() {
  httpRequest = new XMLHttpRequest();

  if (!httpRequest) {
    alert("Giving up :( Cannot create an XMLHTTP instance");
    return false;
  }
  httpRequest.onreadystatechange = alertContents;
  httpRequest.open("GET", "test.html");
  httpRequest.send();
}

function alertContents() {
  if (httpRequest.readyState === XMLHttpRequest.DONE) {
    if (httpRequest.status === 200) {
      alert(httpRequest.responseText);
    } else {
      alert("There was a problem with the request.");
    }
  }
}
```

We won't use *XMLHttpRequest* as it's too verbose. Its legacy interface is not up to date (e.g., missing support for asynchronous JavaScript).

## What about JavaScript Fetch APIs?

Modern JavaScript applications support “Fetch API”, a new way for fetching data from a remote server.

We won't use “Fetch” as it's still a work in progress. Example of missing features:

- **Timeout (!!!)**
- Upload/download progress
- Backward compatibility
- ...

Axios

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Axios is a library built on top of *XMLHttpRequests* (in browsers).

- Make XMLHttpRequests from the browser
- Supports the Promise API
- Intercept request and response
- Transform request and response data
- Cancel requests
- Automatic transforms for JSON data
- Client side support for protecting against XSRF

Bullet points from the Axios website

Axios is already available in Fantastic Coffee (decaffeinated).

Usage example using `async` (from `webui/src/views/HomeView.vue`):

```
async refresh() {  
  try {  
    let response = await this.$axios.get("/");  
    // response.data contains the JSON in response body  
  } catch (e) {  
    console.error(e.toString());  
  }  
}
```

*POST* example:

```
async sendData() {
  try {
    let response = await this.$axios.post("/some/api", {
      firstName: 'Fred',
      lastName: 'Flintstone',
    });
    // response.data contains the JSON in response body
  } catch (e) {
    console.error(e.toString());
  }
}
```

```
{  
  data: {},  
  status: 200,  
  statusText: 'OK',  
  headers: {},  
  config: {},  
  request: {}  
}
```

## Request Interceptor

```
axios.interceptors.request.use(function (config) {  
  return config;  
}, function (error) {  
  return Promise.reject(error);  
});
```

## Response interceptor

```
axios.interceptors.response.use(function (response) {  
  return response;  
}, function (error) {  
  return Promise.reject(error);  
});
```

## Cancellation

```
const controller = new AbortController();

axios.get('/foo/bar', {
  signal: controller.signal
}).then(function(response) {
  // ...
});

// cancel the request
controller.abort()
```