

W4D3 - AJAX

AGENDA

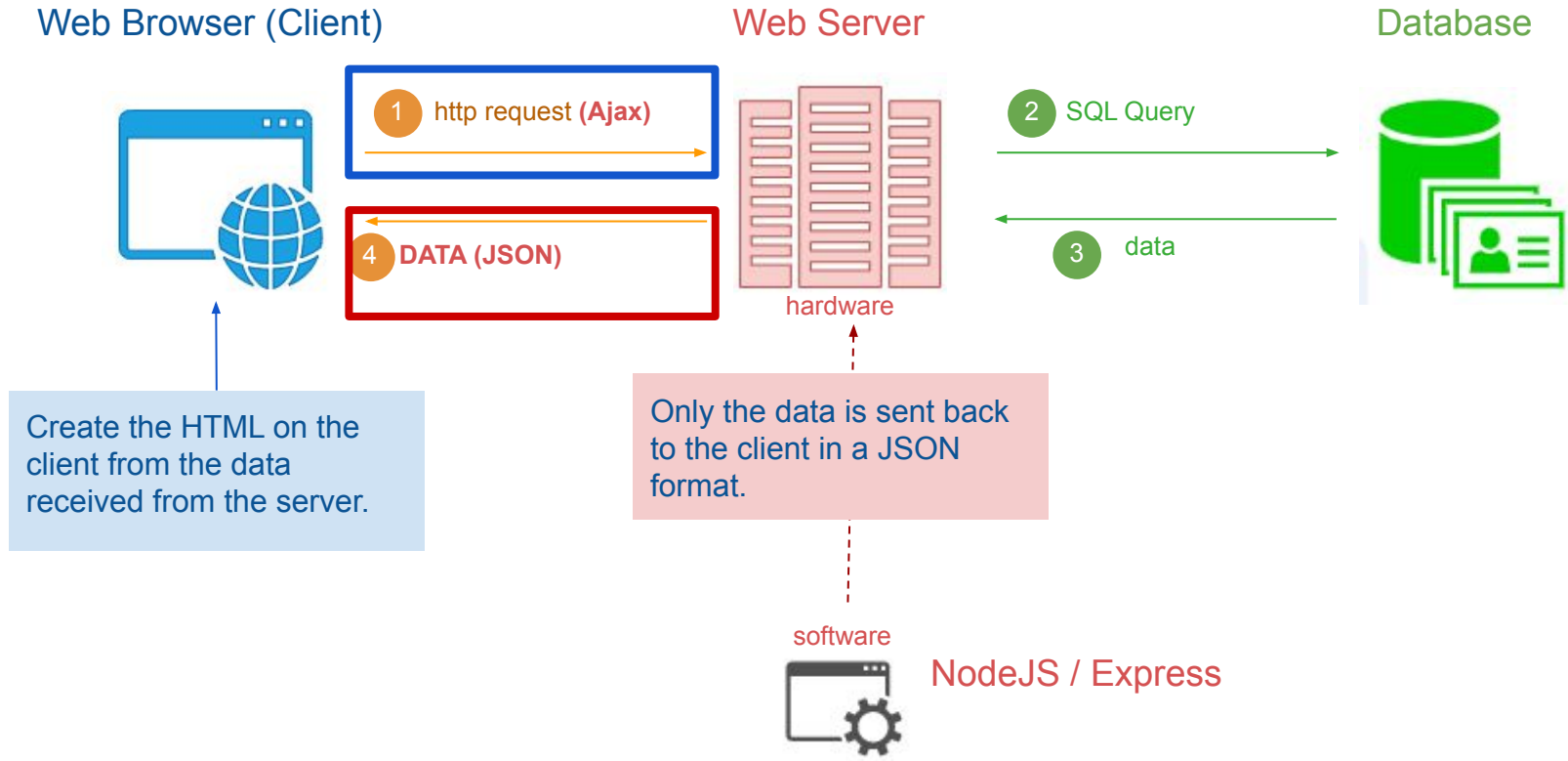
What is Ajax

Demo

Pros / Cons of Ajax

Cross-Origin Resource Sharing (CORS)

What is Ajax (SPA Model)



What is Ajax

```
<form method="POST" action="/register">
```

```
<div class="form-group">
```

```
<label for="email">Email:</label>
```

...

TinyApp My URLs Create New URL

Create Account

Email:

Password:

Register

In a multi-page app, the request is being **performed by the browser**.



In this model, each request **triggers a page reload**.

What is Ajax

AJAX is a technique allowing the user interface to update itself **without reloading** the whole document.

- Microsoft added a little-known function named **XMLHttpRequest** to IE5
- In 2006 the W3 published a **specification** for the XMLHttpRequest object
- The XMLHttpRequest object is used to **retrieve data asynchronously**.
- Initially, it was mainly using XML, but today it can use any other formats such as JSON.

What is Ajax

```
$('#search-frm').on('submit', function (event) {  
    // stop the form from being submitted  
    event.preventDefault();  
    ...  
    XMLHttpRequest();  
    ...  
})
```

With JavaScript, the form is **prevented from being submitted** by the browser.

The XMLHttpRequest object is **performing the request**.

TV Show Search



No page
reload!

Demo



TV Show Search



- We're going to query the TV MAZE API (<https://www.tvmaze.com/api>) to get data about tv shows.
- The request to the API will be performed with an **Ajax request with jQuery**.
- The HTML elements of the result are **built client-side**.

Syntax of The Ajax Request

```
$.ajax({  
    url,  
    method: 'GET',  
})  
    .done(function (data) {  
        // getting the result from the request  
  
    })  
    .fail(function () {  
        alert('error');  
    })  
    .always(function () {  
        console.log('complete');  
    });
```


Pros/Cons of Ajax

PROS

- Improve user experience:
 - no page reloads
 - faster page renders and improved response times
- Client side rendering => reduce network load

CONS

- Creating dynamic content is tricky
- Asynchronous programming patterns are more complex to code
- It requires js and XMLHttpRequest support
- History is not automatically updated

Pros/Cons of Ajax

Browser History

Using AJAX you lose:

- history (back, forward)
- URL paths for different 'pages'

Browsers provide a history API that you can use to programmatically interact with the Browser history.

<https://css-tricks.com/using-the-html5-history-api>

Cross-Origin Resource Sharing (CORS)

- For security reasons, browsers restrict cross-origin HTTP requests initiated from scripts.
- Ajax requests follow the *same-origin* policy.
- A web application using those APIs can only request resources from the **same origin** the application was loaded from unless the response from other origins includes the **right CORS headers**.

<https://developer.mozilla.org/en-US/docs/Web/HTTP/CORS>

Questions?

