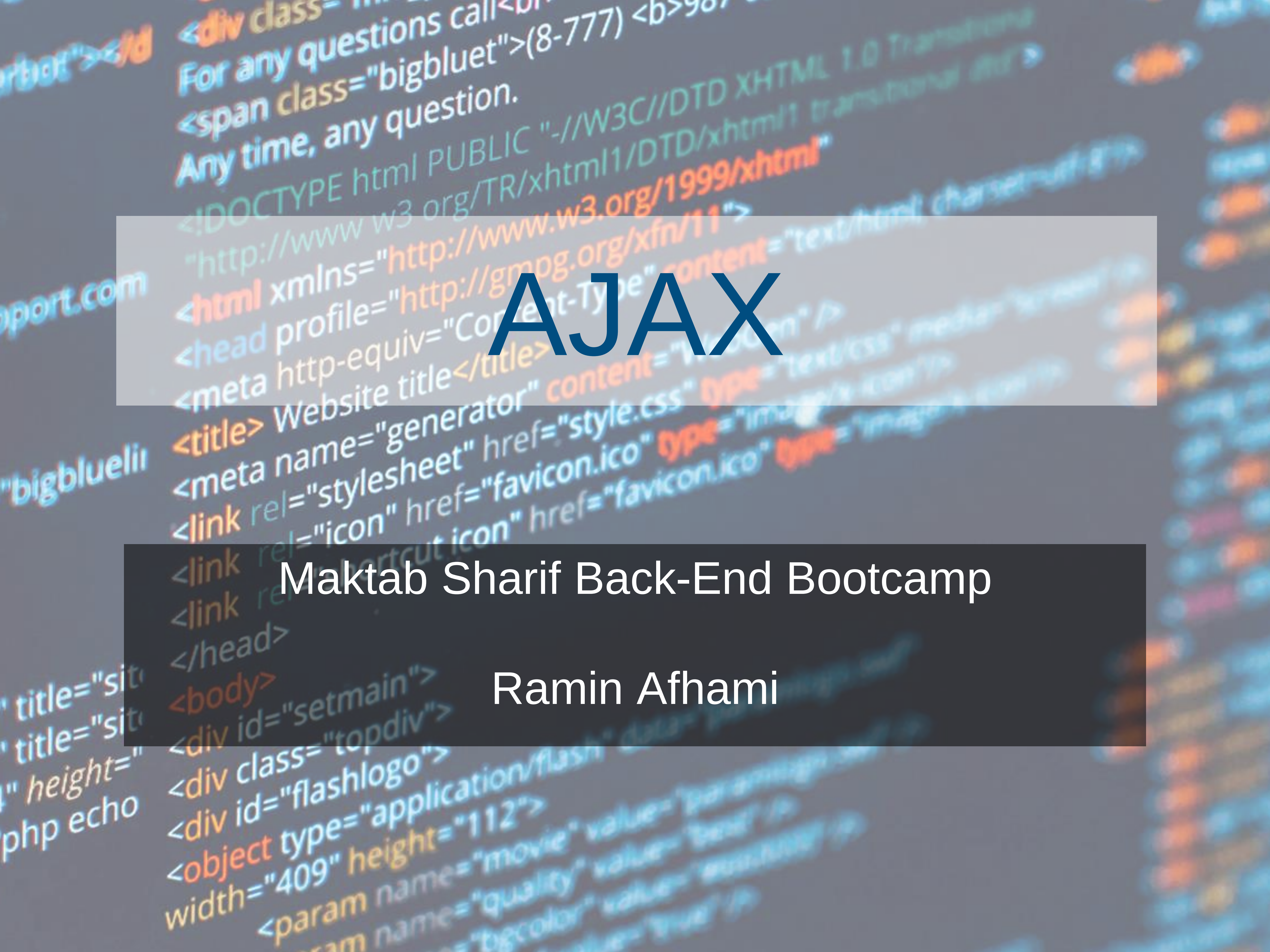


AJAX

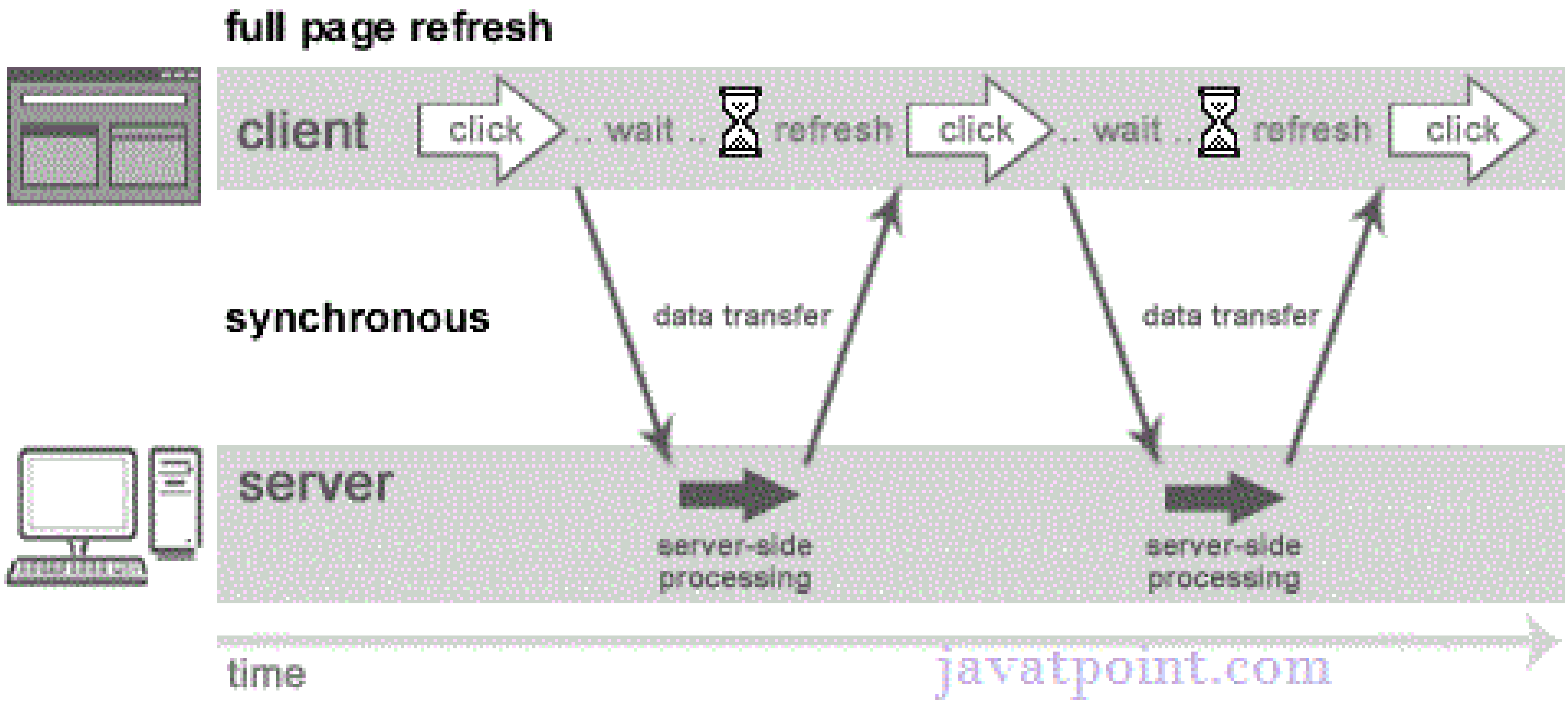
Maktab Sharif Back-End Bootcamp

Ramin Afhami

synchronous request

- Conventional web applications transmit information to and from the sever using synchronous requests. It means you fill out a form, hit submit, and get directed to a new page with new information from the server.

- A synchronous request blocks the client until operation completes.



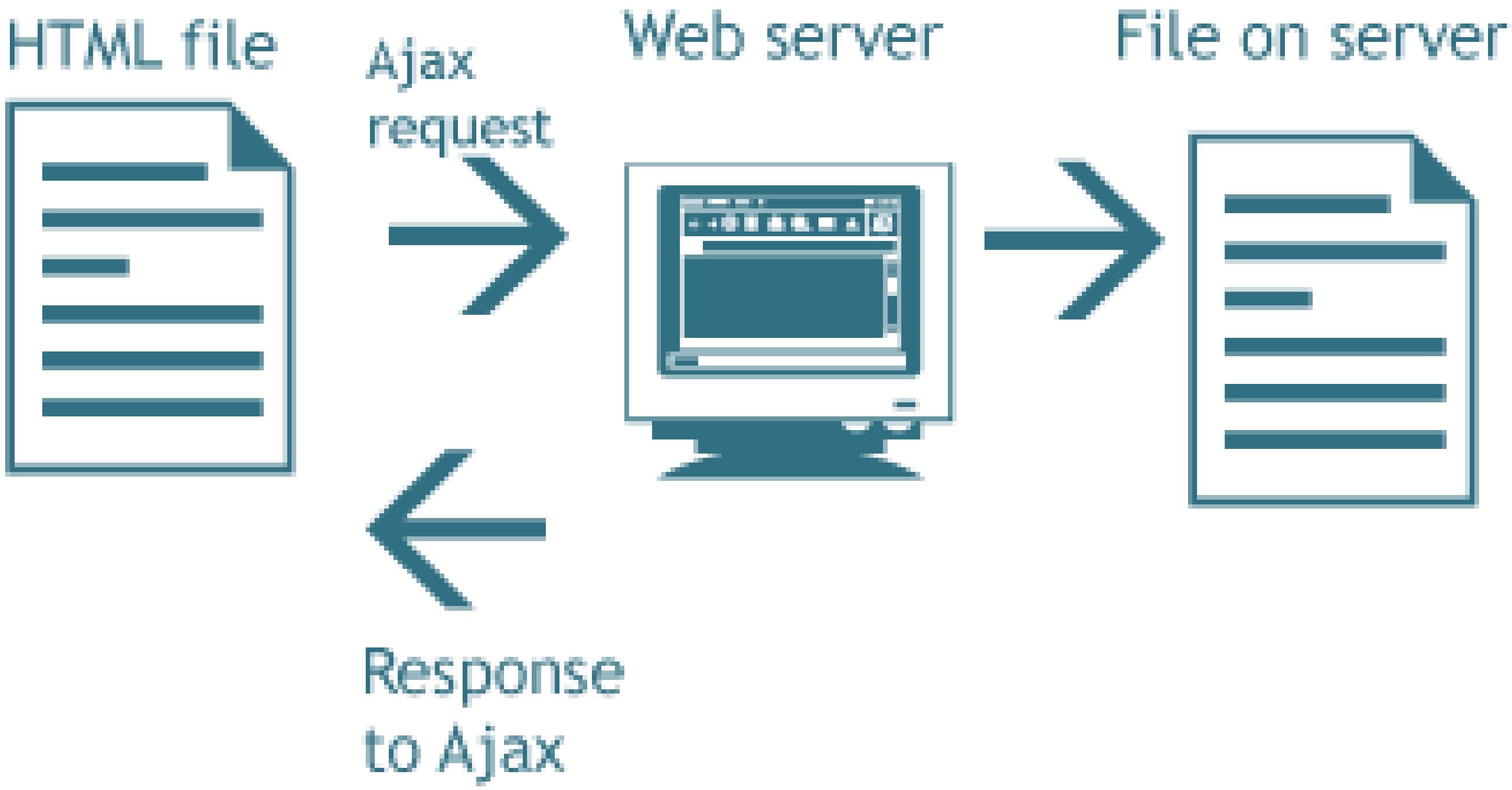
What is AJAX?

- AJAX stands for **A**synchronous **Ja**vaScript and **X**ML. AJAX is a new technique for creating better, faster, and more interactive web applications.
- Prerequisites: HTML and JavaScript.
- With AJAX, when you hit submit, JavaScript will make a request to the server, interpret the results, and update the current screen. In the purest sense, the user would never know that anything was even transmitted to the server.
- XML is commonly used as the format for receiving server data, although any format, including plain text, can be used.
- AJAX is a web browser technology independent of web server software.

With AJAX you can …

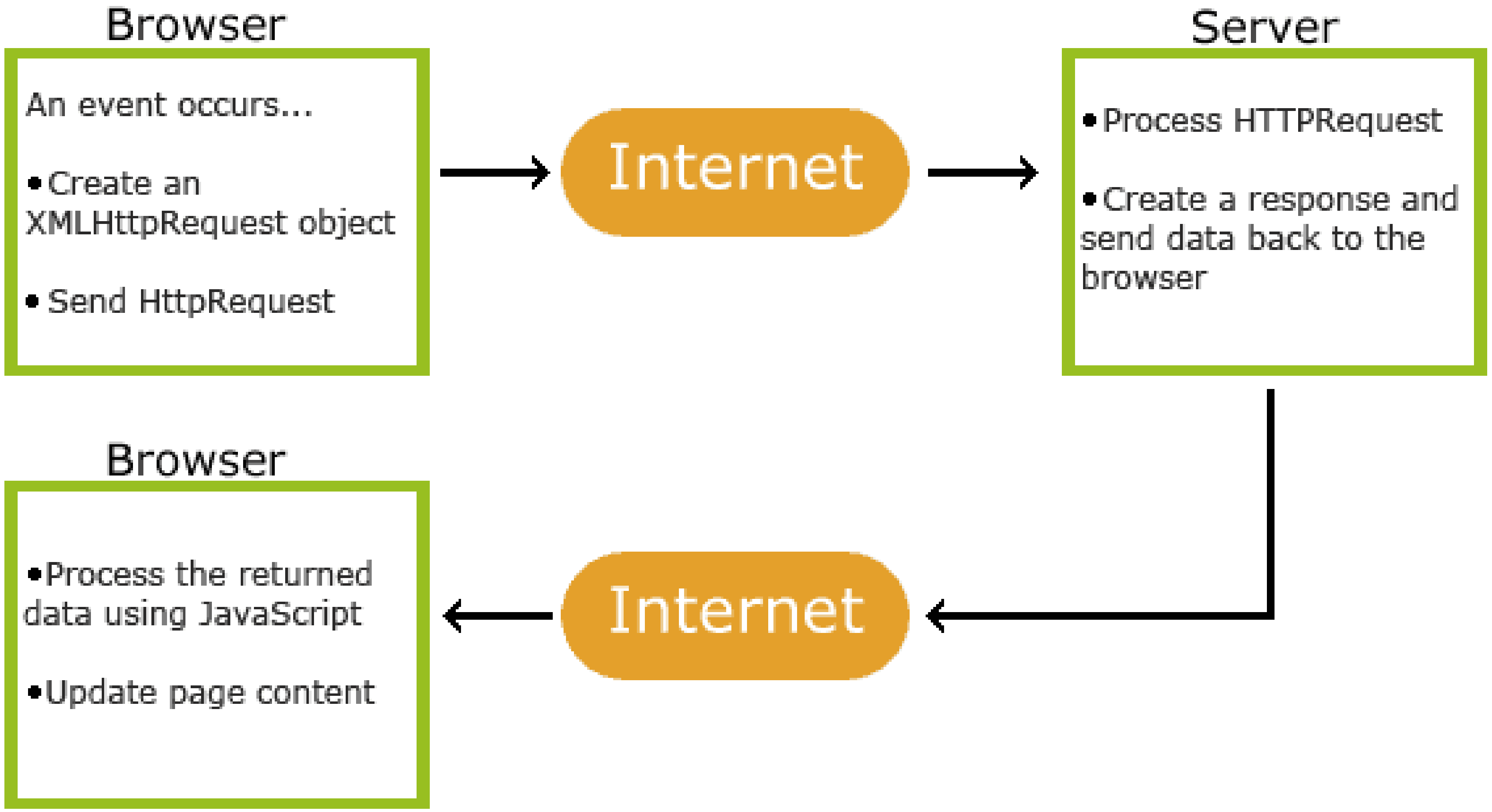
AJAX is a developer's dream, because you can:

- Update a web page without reloading the page
- Request data from a server - after the page has loaded
- Receive data from a server - after the page has loaded
- Send data to a server - in the background



How AJAX Works

- XMLHttpRequest (XHR) is an API that can be used by JavaScript to transfer and manipulate data to and from a webserver using HTTP, establishing an independent connection channel between a webpage's Client-Side and Server-Side.
- All modern browsers (Chrome, Firefox, IE7+, Edge, Safari Opera) have a built-in XMLHttpRequest object.



Browser

An event occurs...

- Create an XMLHttpRequest object
- Send HttpRequest

Internet

Server

- Process HTTPRequest
- Create a response and send data back to the browser

Internet

Browser

- Process the returned data using JavaScript
- Update page content

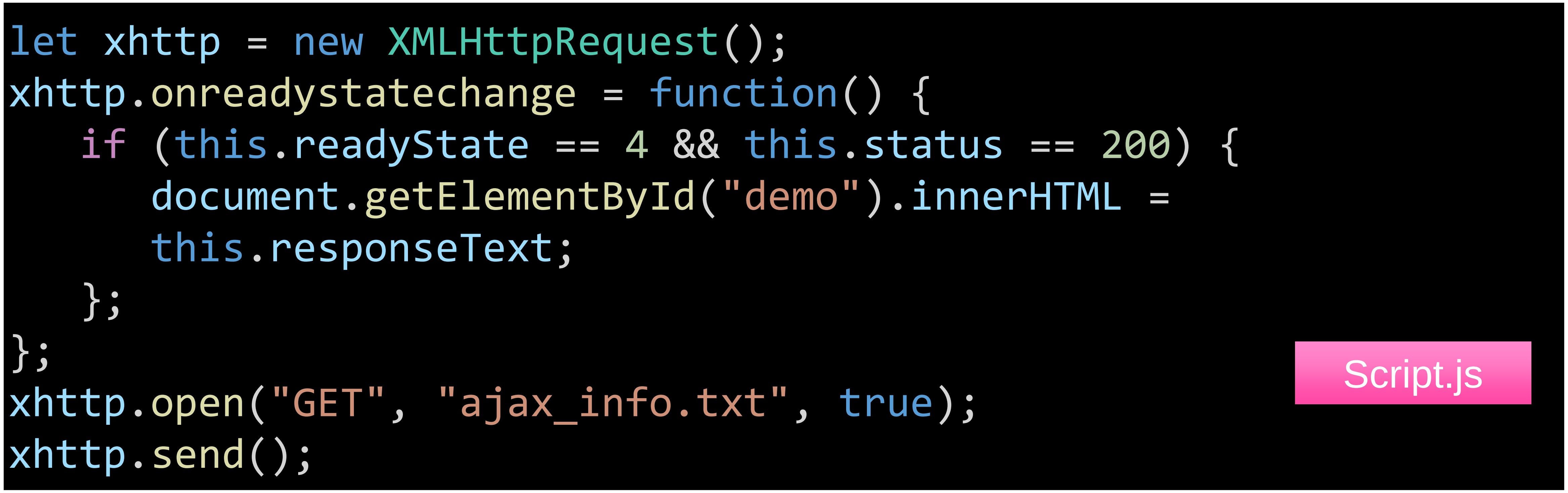
Main methods

- open(method, url, async): Specifies the type of request

  method: the type of request: GET or POST
  url: the server (file) location
  async: true (asynchronous) or false (synchronous)

- send(): Sends the request to the server (used for GET)

- send(string): Sends the request to the server (used for POST)

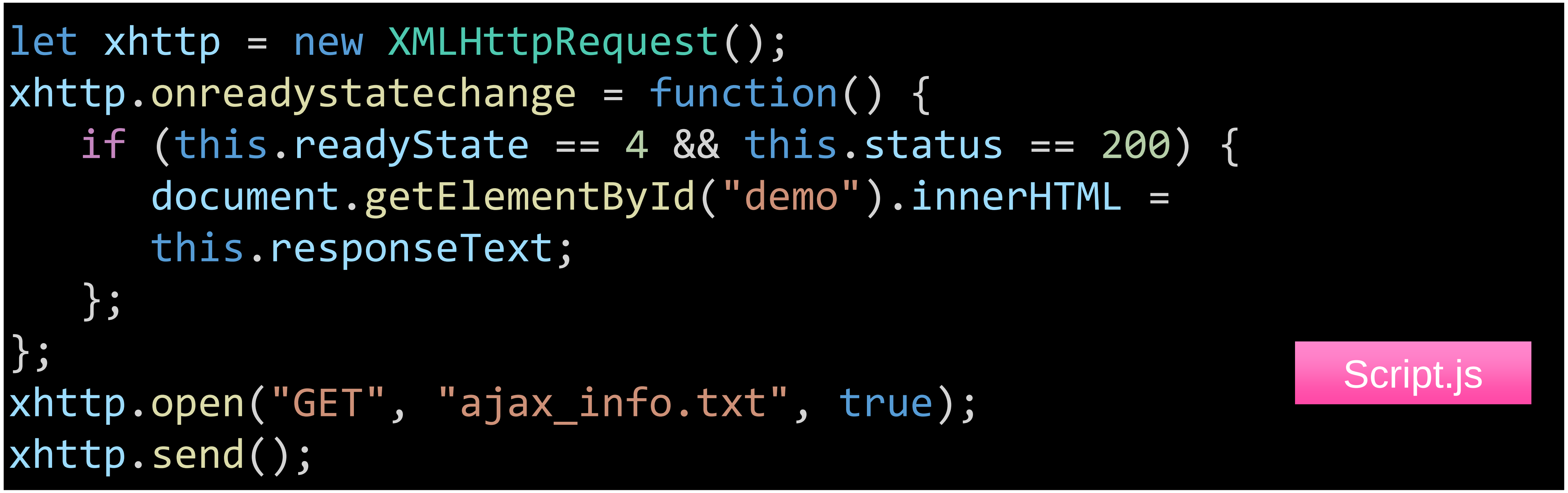


```
let xhttp = new XMLHttpRequest();
xhttp.onreadystatechange = function() {
   if (this.readyState == 4 && this.status == 200) {
      document.getElementById("demo").innerHTML =
      this.responseText;
   };
};
xhttp.open("GET", "ajax_info.txt", true);
xhttp.send();
```

Script.js

Main properties

- The readyState property holds the status of the XMLHttpRequest.
- The onreadystatechange property defines a function to be executed when the readyState changes.
- The status property and the statusText property holds the status of the XMLHttpRequest object.
- responseText returns the response as a string.



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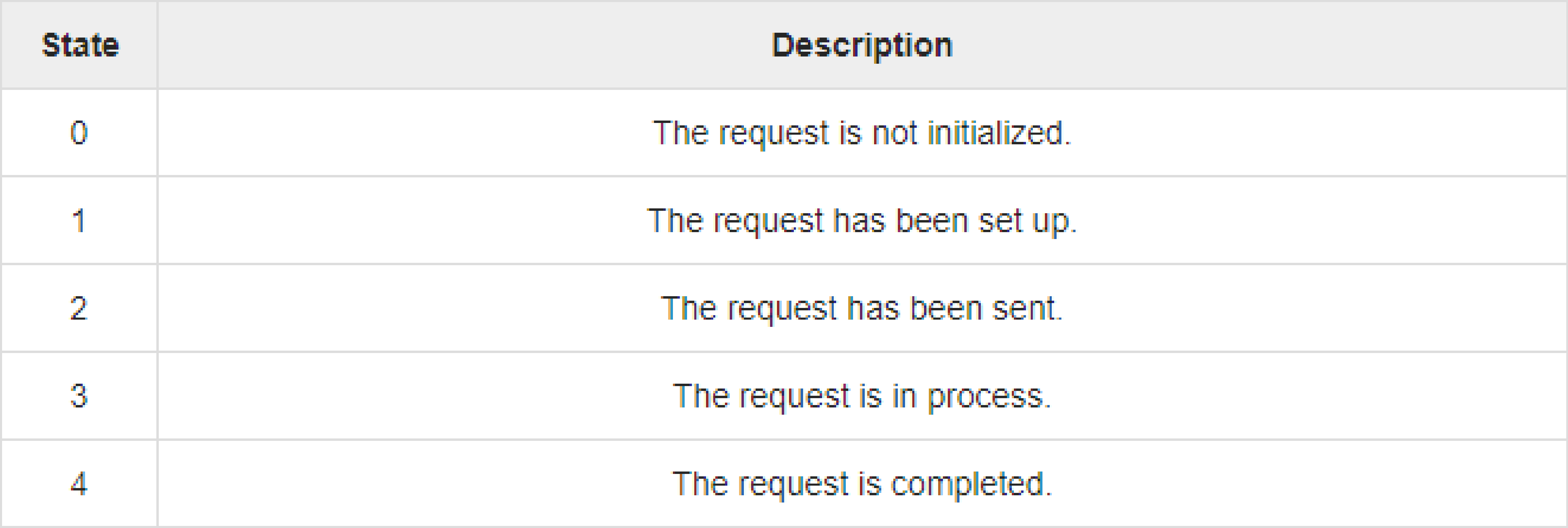
Script.js

readyState

The readyState property defines the current state of the XMLHttpRequest object. The following table provides a list of the possible values for the readyState property.



State	Description
0	The request is not initialized.
1	The request has been set up.
2	The request has been sent.
3	The request is in process.
4	The request is completed.

Finished

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