

Web Services

Agenda

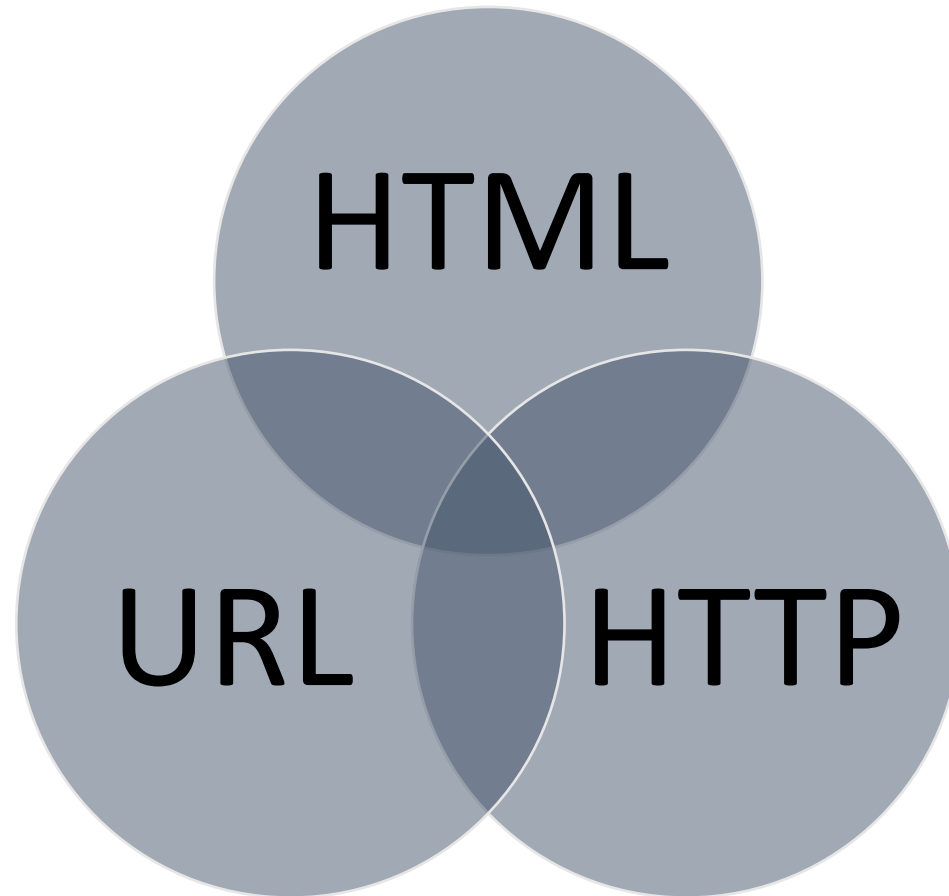
Client –server model

HTTP protocol

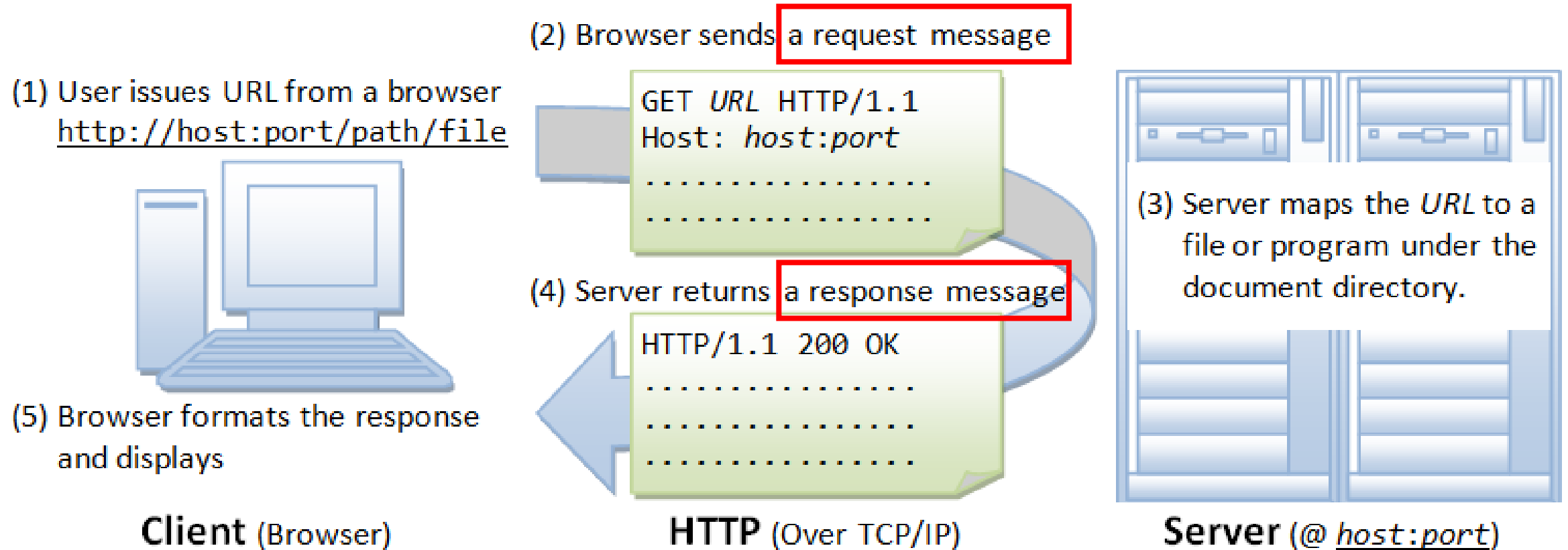
REST

XMLHttpRequest

Core Web Technologies



Client – Server model



HTTP

Hypertext Transfer Protocol

protocol for sending hypertext documents

standardized way computers communicate with each other

HTTP Methods

GET

POST

HEAD

PUT

DELETE

CONNECT

OPTIONS

TRACE

HTTP details

The Internet, HTTP & HTML

<https://www.youtube.com/watch?v=kBXQZMmiA4s>

The Http and the Web

<https://www.youtube.com/watch?v=eesqK59rhGA>

REST

REpresentational State Transfer

software architectural style that defines a set of constraints to be used for creating Web Services

Architectural constraints: client-server, statelessness, cacheability, layered system, code on demand, uniform interface

Request – Response

Web Service

a service offered by an electronic device to another electronic device, communicating with each other via the World Wide Web

REST API

Czym jest REST API

<https://www.youtube.com/watch?v=P9b8-BrWdYs>

Kanał REST API

https://www.youtube.com/playlist?list=PLjHmWifVUNMLjh1nP3p-U0VYrk_9aXVjE

XMLHttpRequest

an API in the form of an object whose methods transfer data between a web browser and a web server

An object is provided by the browser's JavaScript environment

XMLHttpRequest methods

`abort()`

`getAllResponseHeaders()`

`getResponseHeader(headerName)`

`open(method, URL)`

`send()`

`setRequestHeader(HeaderName, HeaderContent)`

XMLHttpRequest properties

onreadystatechange

readyState

responseText

responseXML

status

statusText

readyState	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

Status	Description
200	OK
403	Forbidden
404	Page not found
...	List of status messages

XMLHttpRequest example

```
var request = new XMLHttpRequest();
request.onreadystatechange = function () {
    if (this.readyState==4 && this.status==200) {
        // Typical action to be performed
        // when the document is ready
        // document.getElementById(...) = ...
    }
};

request.open('GET', 'somepage.xml');
request.send();
```

XMLHttpRequest doc

Using XMLHttpRequest

[https://developer.mozilla.org/en-US/docs/Web/API/XMLHttpRequest/Using XMLHttpRequest](https://developer.mozilla.org/en-US/docs/Web/API/XMLHttpRequest/Using_XMLHttpRequest)

[https://www.w3schools.com/xml/xml http.asp](https://www.w3schools.com/xml/xml_http.asp)

AJAX

a set of web development techniques using many web technologies on the client side to create asynchronous web applications

a change content dynamically without the need to reload the entire page

Ajax Tutorial

<https://www.youtube.com/watch?v=My0MDTI0Zv4>

JSON

String → JS object conversion

`JSON.parse(String)`

https://www.w3schools.com/js/js_json_parse.asp

JS object → String conversion

`JSON.stringify(Object)`

https://www.w3schools.com/js/js_json_stringify.asp