Data Transfer

Agenda

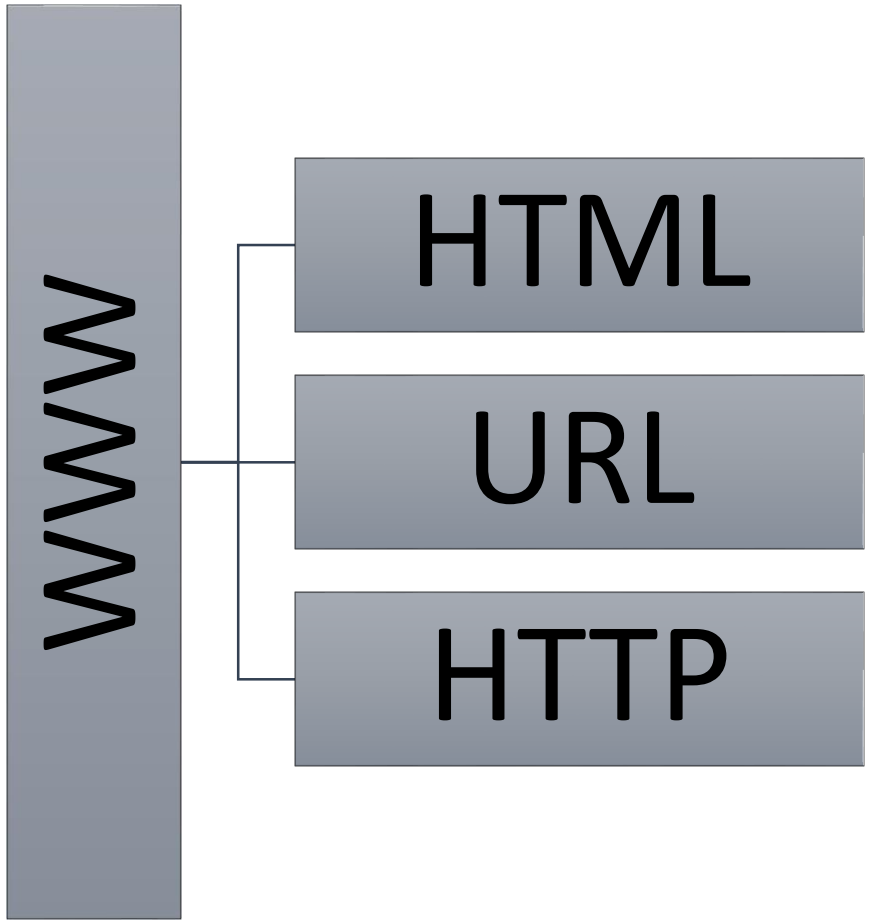
WWW

SOA

REST

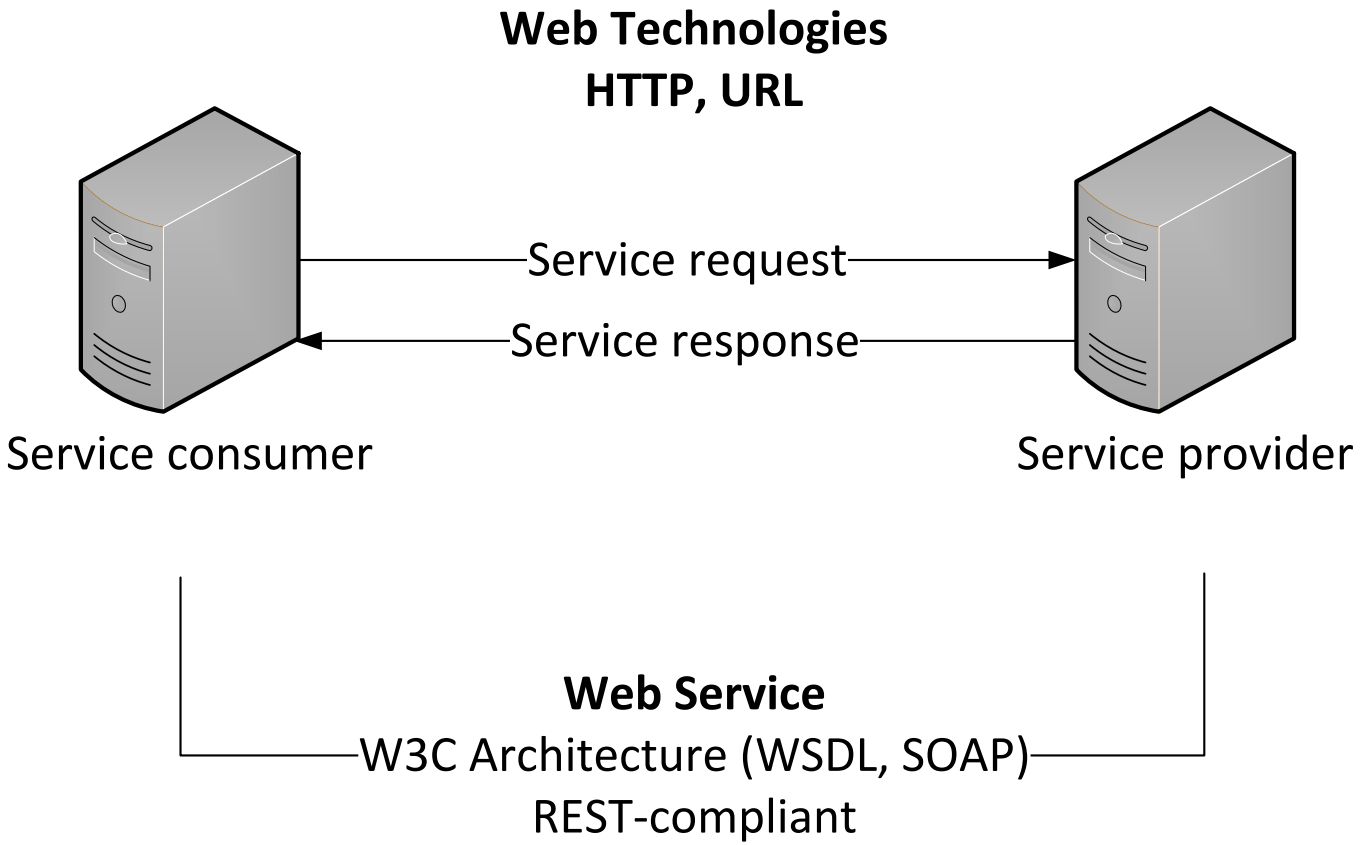
AJAX

World Wide Web



human to computer communication

Service Oriented Architecture (SOA)



REST

REST REpresentational State Transfer)

Architectural style for distributed hypermedia systems

REST principles

Client-server, Stateless, Cacheable, Uniform interface, Layered system, Code on demand

RESTful – REST API

What is REST API

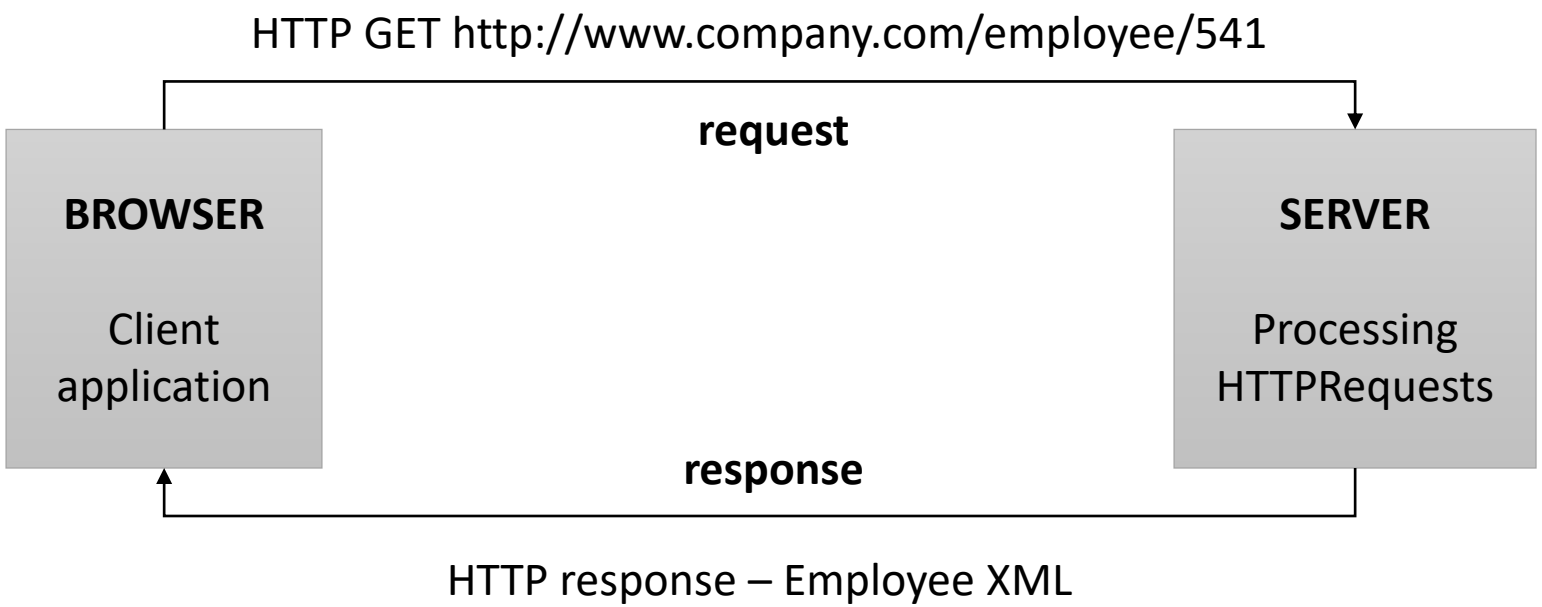
Transferring data between client and server

XMLHttpRequest – API for data transfer

Synchronous vs Asynchronous

Asynchronous JavaScript + XML (AJAX)

Data transfer



Plain JS data transfer

```
var xhttp = new XMLHttpRequest();


xhttp.open("GET", "data.txt", true);


xhttp.send();
```

AJAX Introduction

JQuery data transfer

Methods

```
.load(url, [,data][, callback_function])

jQuery.getJSON()

jQuery.getScript()

jQuery.get(url, [,data][, callback_function])

jQuery.post()
```

To do

Load a file

1. Create myfilm.txt with a text describing your favourite film (2-3 sentences).
2. Load the text file into the <p> element of the myfilm.html document.
3. To transfer the text file from a server to your local computer, use the Ajax load() method of jQuery framework.

Load an HTML file

1. Load the filelist.html into the element of the files.html document.
2. To transfer the file from a server to your local computer, use the Ajax load() method of jQuery framework.
3. Improve the quality of the table data. You can use CSS or Bootstrap framework.

Transfer a JSON file

1. **Complete the employee.html document. Add some JavaScript code to display the employee.json on the console.**
2. **To transfer the file from a server to your local computer, use load() method of jQuery framework.**
3. **Find some examples of using the get() method and apply them in your JavaScript program (e.g. https://www.tutorialspoint.com/jquery/jquery-ajax.htm)**

Display country details

1. **Complete the poland.html document to display missing data values.**
2. **The missing data are available in the poland.json file.**

Use an API

1. **Create the exchangerate.html document from scratch. Add a button to display the exchange rates of EUR, USD, GBP, and CHF.**
2. **To retrieve current exchange rates, use the API of the National Polish Bank (http://api.nbp.pl/).**

Process JSON data

1. **Create the parliament.html document for displaying a list of deputies of the Polish Parliament (Sejm).**
2. **Use the API https://mojepanstwo.pl/api/sejmometr**

Send data to a server

1. **Create the products.html for displaying information about a single product available in the online shop.**
2. **A simple product database products.json contains information about five products.**
3. **To retrieve information about a single product from the database, use products.php?n=X (replace X with a number from 1 to 5).**
4. **Add on the webpage an input field and a button.**
5. **After clicking on the button, the details of the selected product (from input field) will be displayed in the browser.**
6. **Familiarise yourself with the get() method and its parameters.**

Create a more complex webpage

1. **Create the shop.html document for displaying information about every product available in the online shop.**
2. **Add on the webpage two buttons ‘previous’ and ‘next’ to display next or previous product details from the database.**
3. **Try to improve the webpage quality by using the Bootstrap framework.**