

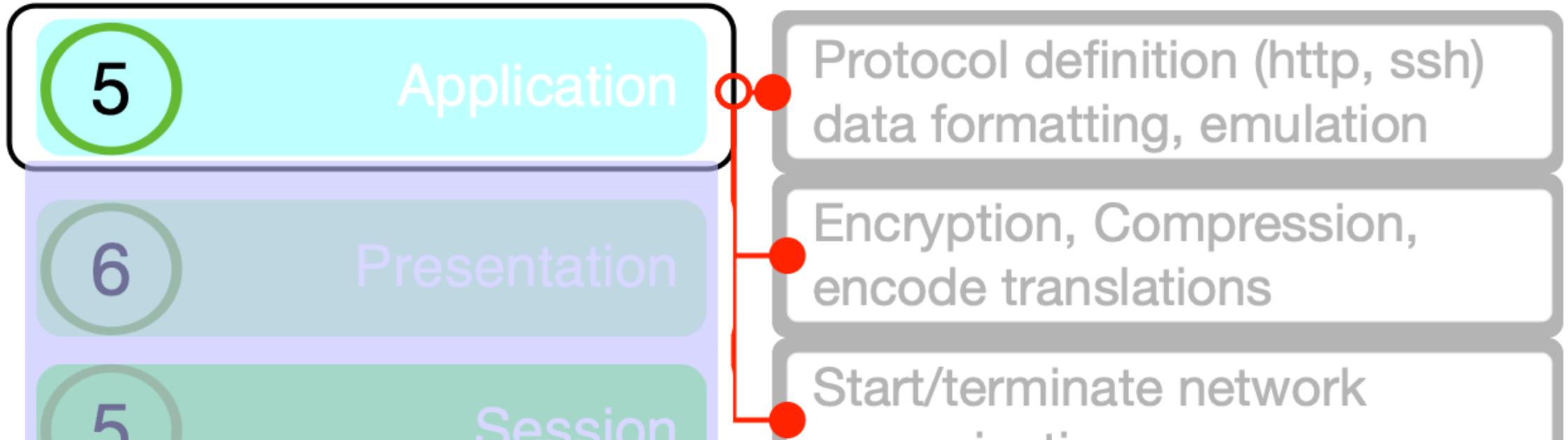
% Web Development

% Silvestro Di Pietro

% 6/10/2023

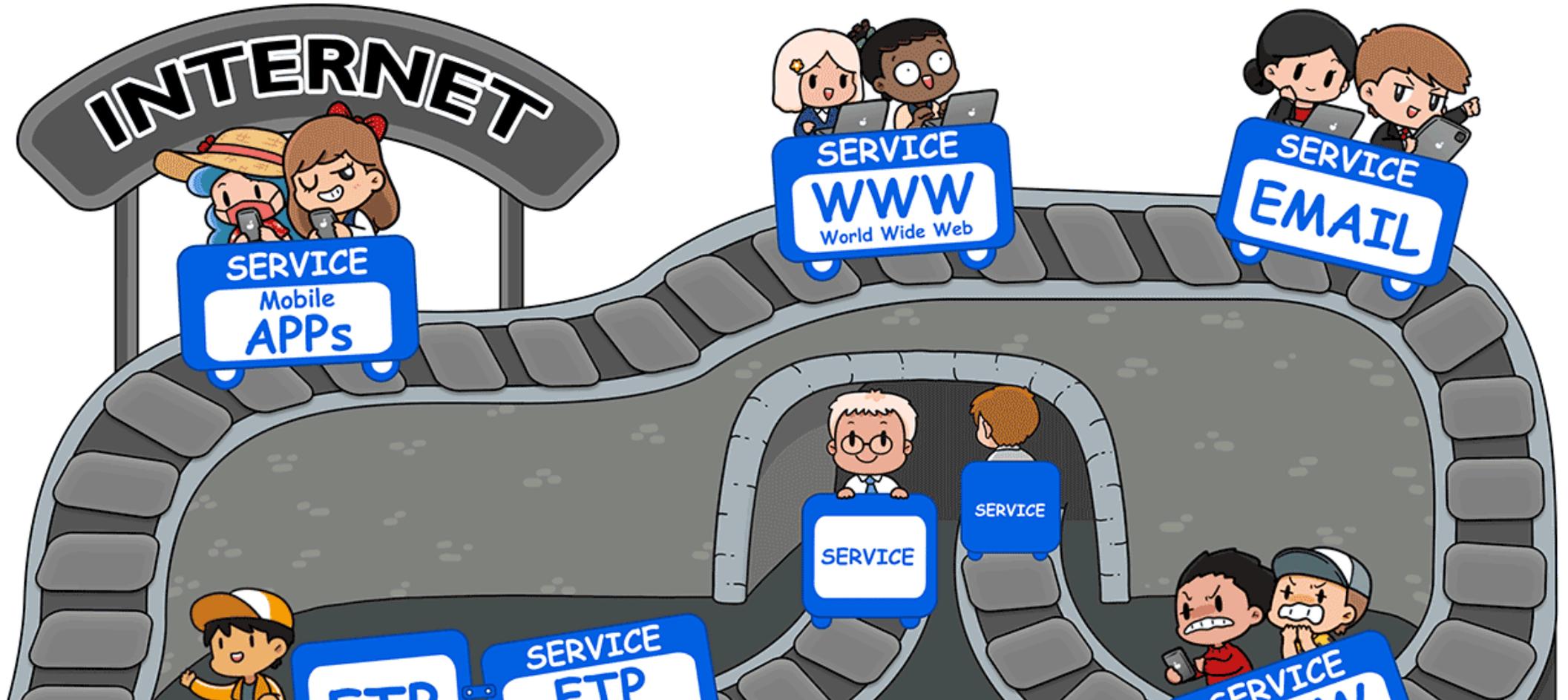
Web

TCP/IP layer 5 protocol



network is a railroad

The **INTERNET** and (some of) its **SERVICES**



Web

Common Services

- `http` and `https` (the web pages)
- `email` (the email system)
- `ftp` (the File Transfer Protocol)
- ...

http

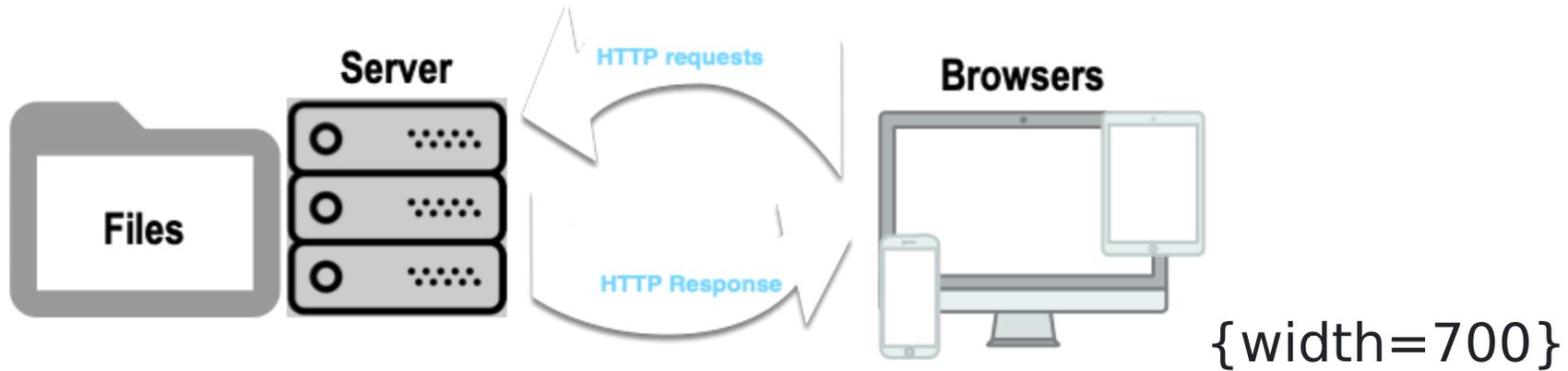
W3 (WWW)

The WorldWideWeb (W3) is a wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents.

here the link of the first web site

<https://info.cern.ch/hypertext/WWW/TheProject.html>

Web server



The web server in its simple form is just a file server that will transmit over the TCP/IP network a file requested by a browser using an `url`

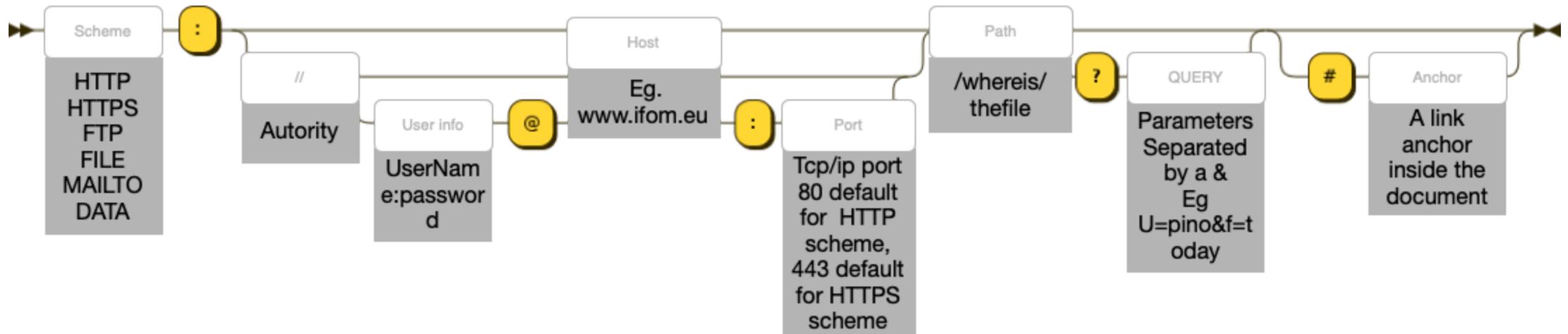
URL

URL is for Uniform Resource Locator is a part of the URI Uniform Resource Identifier

URIs may be used to identify anything, including real-world objects, such as people and places, concepts, or information resources such as web pages and books.

URI structure

schematics of an uri



{width=1000}

file:///Users/sdipietr/Desktop/MasterCourse/11-webDevelopment/11-webDevelopment.html#/uri-structure {width=7000}

https://microservices.ad.ifom.eu/yellowPages/test?-u=sdipietr&-p&-d {width=7000}

File types served by a web server

Using an uri you can request a file such as:

- `html`
- `images`
 - `jpeg gif png webP svg ..`
- `xml`
- `json`

html

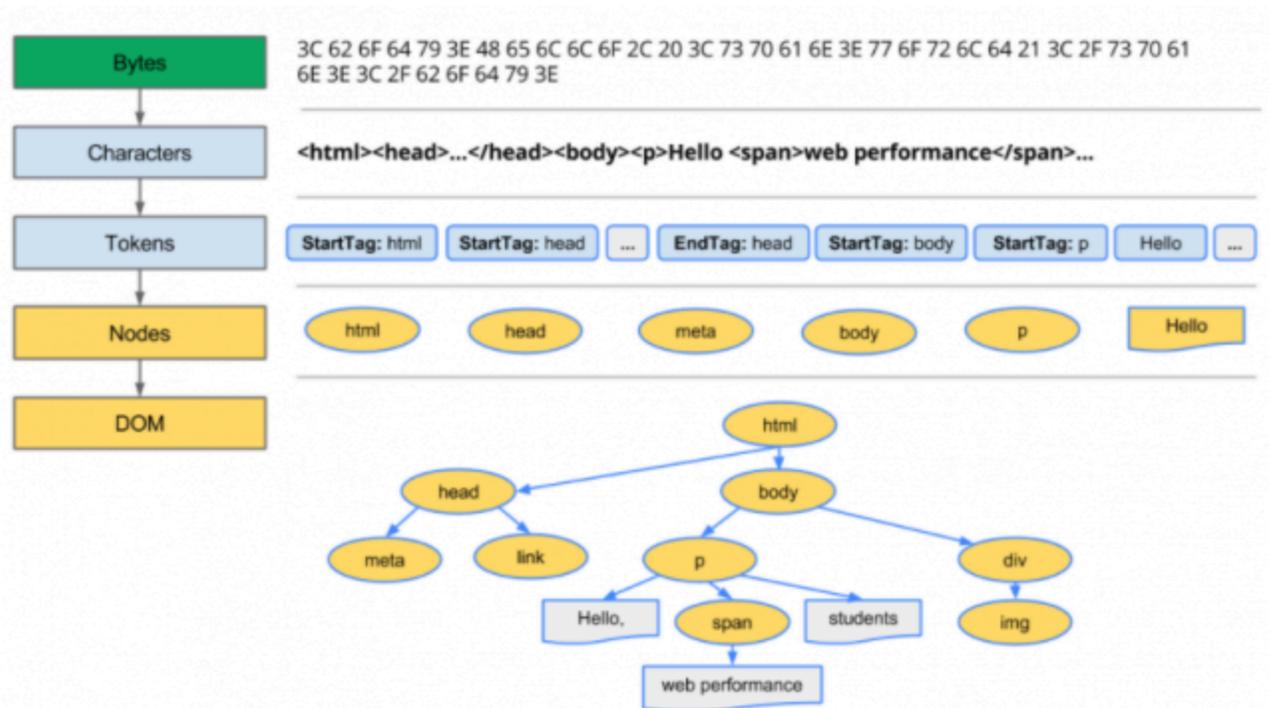
markup language

HTML is the standard markup language for Web pages that will be rendered by a rendering engine

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>This is a Heading</h1>
    <p>This is a paragraph.</p>
  </body>
</html>
```

rendering

Rendering is a process that turns website code into pages users can see/use. The process is made by a rendering engine inside a web browser



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html file parts

- html (the html file)
- head (the infos about the html file)
- body the displayed part of the html file

html Basics

- the tag
 - `<tag>things inside a tag</tag>` (the `</>` close the tag)
- self closed tag
 - `<tag />` (nothing inside)

Please check this page for many examples

*https://www.w3schools.com/html/html_examples.asp

XML

XML

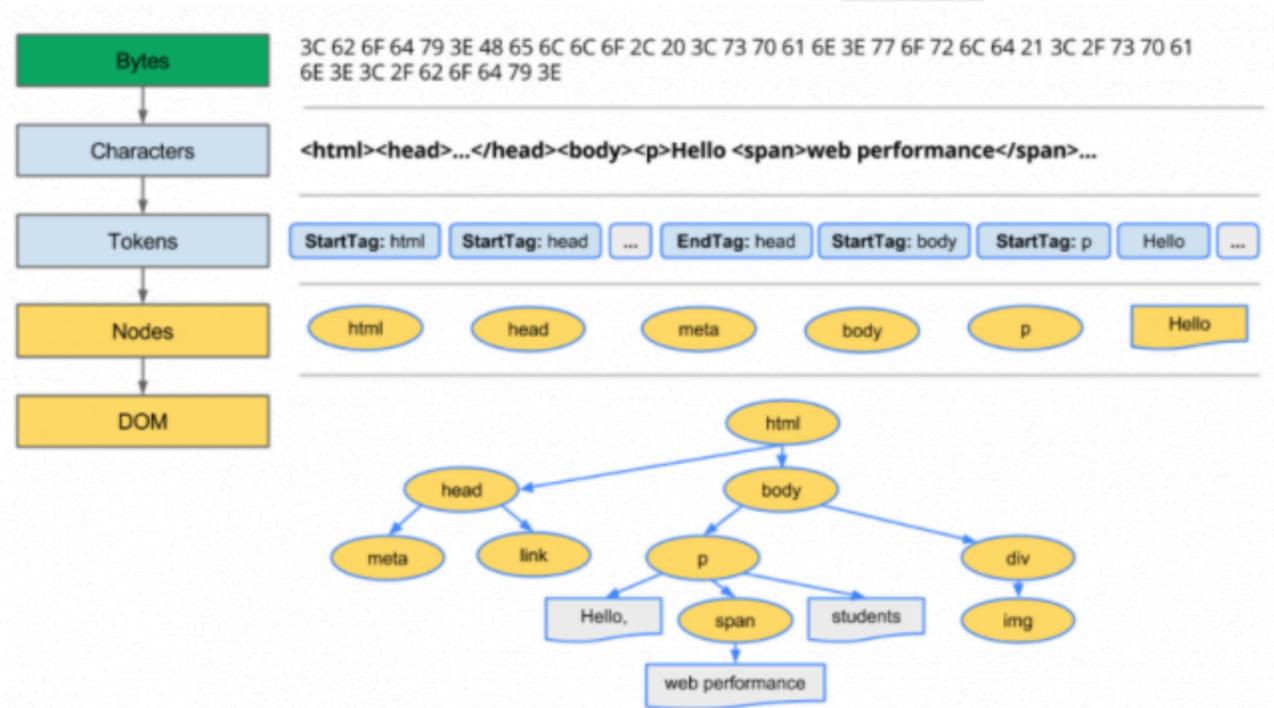
Extensible Markup Language (XML) is a markup language and file format for storing, transmitting, and reconstructing arbitrary data.

<https://en.wikipedia.org/wiki/XML>

Xml use the same markup structure of HTML using tags:
You can define you element ad fill with info

XML DOM

A browser will transform the `HTML` into a tree structure inside an xml

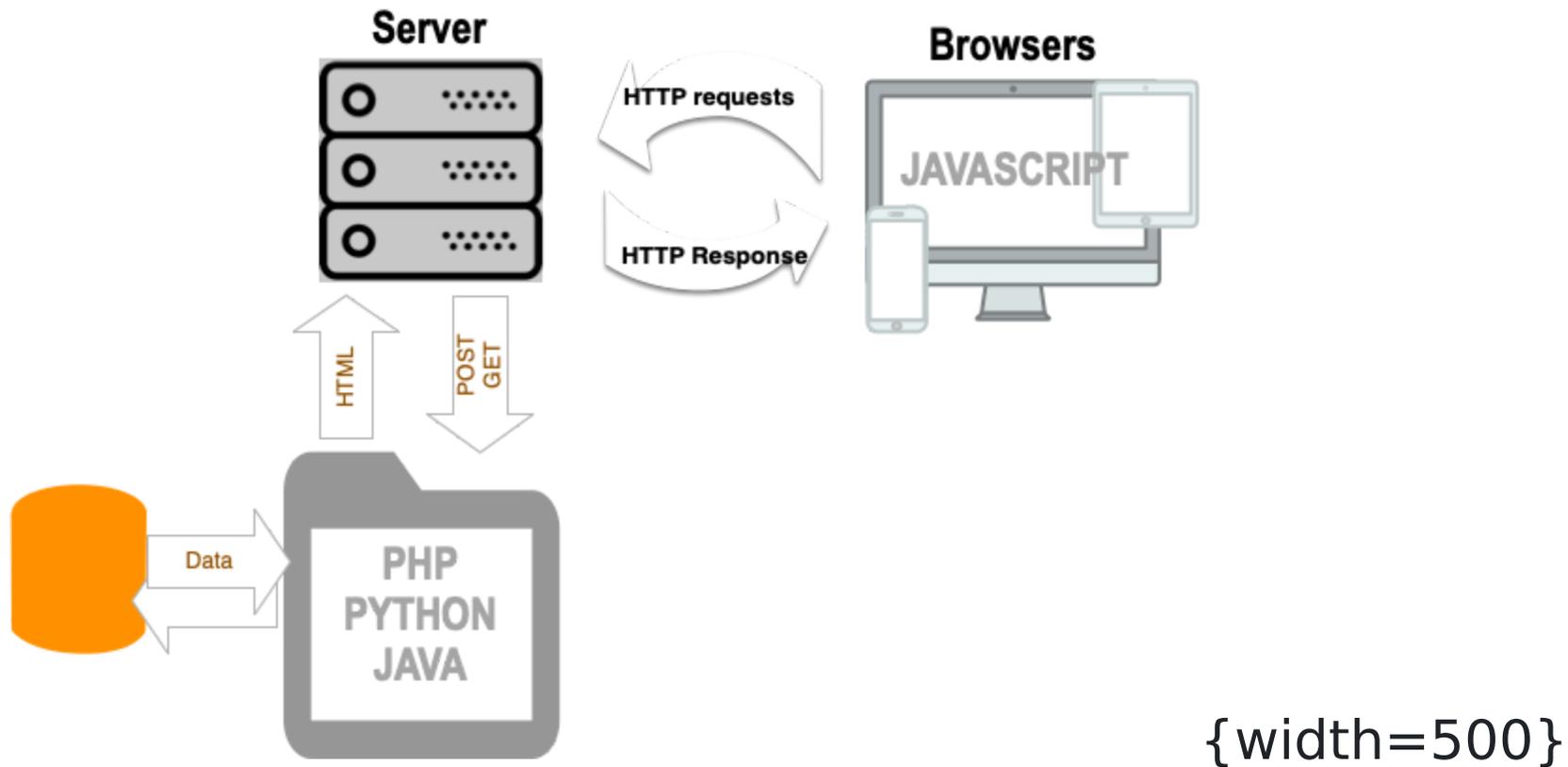


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Web apps

Structure

Web is not just static pages, can be dynamically coded



REQUESTS

the requests to a server from browser:

- POST
- GET
- PUT
- HEAD
- DELETE
- PATCH
- OPTIONS
- CONNECT
- TRACE

The POST Method

POST is used to send data to a server to create/update a resource.

Some notes on POST requests:

- POST requests are never cached
- POST requests do not remain in the browser history
- POST requests cannot be bookmarked
- POST requests have no restrictions on data length

The GET Method

GET is used to request data from a specified resource.

```
/test/demo_form.php?name1=value1&name2=value2
```

- GET requests can be cached
- GET requests remain in the browser history
- GET requests can be bookmarked
- GET requests should never be used with sensitive data
- GET requests have length restrictions
- GET requests are only used to request data (not modify)

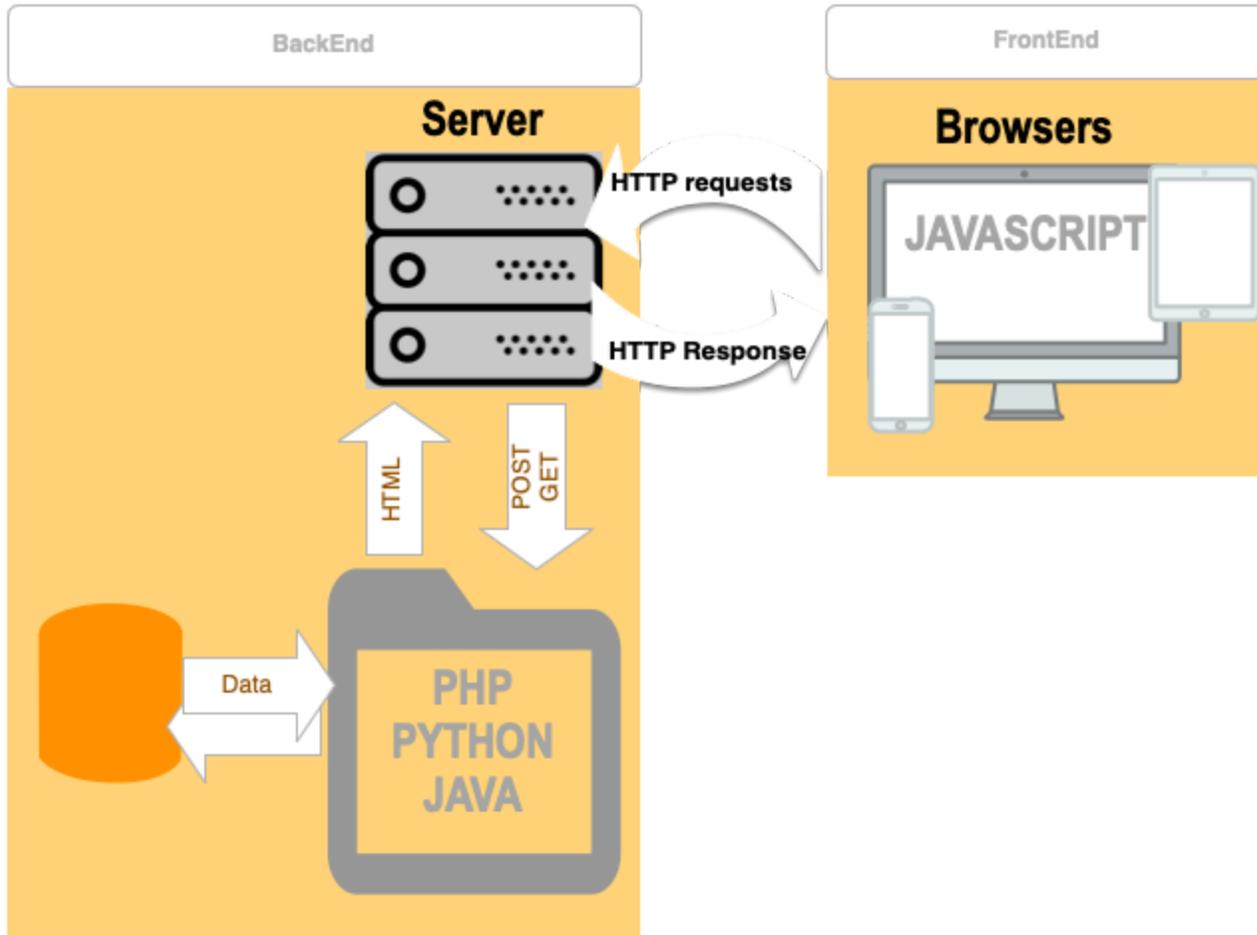
The HEAD Method

HEAD is almost identical to GET, but without the response body.

In other words, if GET /users returns a list of users, then HEAD /users will make the same request but will not return the list of users.

HEAD requests are useful for checking what a GET request will return before actually making a GET request - like before downloading a large file or response body.

Back and front



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FrontEnd

BASICS

Front end (User Interface) is managed by `HTML` `CSS` `JAVASCRIPT`

THE head of html will include also the `CSS` files and the `Javascript` files

CSS

- CSS stands for Cascading Style Sheets
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media
- CSS saves a lot of work. It can control the layout of multiple web pages all at once
- External stylesheets are stored in CSS files

<https://www.w3schools.com/css/>

JAVASCRIPT

- JavaScript is the world's most popular programming language.
- JavaScript is the programming language of the Web.
- JavaScript is easy to learn.

<https://www.w3schools.com/js/default.asp>

BackEnd

WEB

- DATABASE interface
- request query management
- security
- html response

API

- DATABASE interface
- request query management
- security
- json / xml response