

Script -> Service

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O mně - Martin Münch

- Od 2017 v bance:
 - data scientist
 - ML Engineer
 - Team Leader
- Pomáhám data science a juniorům dostat jejich výstupy do produkce

Co je to služba?

☰ Service (systems architecture)

🌐 6 languages ▾

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From Wikipedia, the free encyclopedia

Not to be confused with [Server \(computing\)](#).

In the contexts of [software architecture](#), [service-orientation](#) and [service-oriented architecture](#), the term **service** refers to a software [functionality](#), or a set of software functionalities (such as the retrieval of specified information or the execution of a set of operations) with a purpose that different [clients](#) can reuse for different purposes, together with the policies that should control its usage (based on the identity of the client requesting the service, for example).

[OASIS](#) defines a service as "a mechanism to enable access to one or more capabilities, where the access is provided using a prescribed interface and is exercised consistent with constraints and policies as specified by the [service description](#)".^[1]

Co je to API?

API

Article [Talk](#)

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For other uses, see [API \(disambiguation\)](#).

"[Api.php](#)" redirects here. For the Wikipedia API, see [Special:ApiHelp](#).

An **application programming interface (API)** is a way for two or more [computer programs](#) to communicate with each other. It is a type of software interface, offering a service to other pieces of [software](#).^[1] A document or standard that describes how to build or use such a connection or interface is called an *API specification*. A computer system that meets this standard is said to *implement* or *expose* an API. The term API may refer either to the specification or to the implementation.

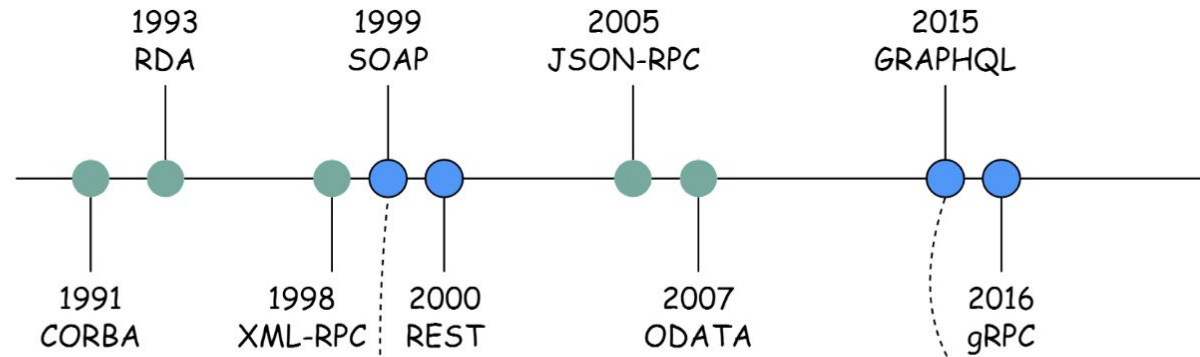
In contrast to a [user interface](#), which connects a computer to a person, an application programming interface connects computers or pieces of software to each other. It is not intended to be used directly by a person (the [end user](#)) other than a [computer programmer](#) who is incorporating it into the software. An API is often made up of different parts which act as tools or services that are available to the programmer. A program or a programmer that uses one of these parts is said to *call* that portion of the API. The calls that make up the API are also known as [subroutines](#), methods, requests, or [endpoints](#). An API specification *defines* these calls, meaning that it explains how to use or implement them.

API - proč je to vůbec důležité

- Způsob jak komunikovat s okolím
- Způsob jak umožnit využívání mé práce
- Kontrakt mezi vývojáři/týmy
- Součást pohovorovacích úloh

API - Příklady

- Webová stránka / Mobilní appka <-> Backend
- Mikroservisní architektura
- Využívání služeb 3. stran



	SOAP (Simple Object Access Protocol)	REST (REpresentational State Transfer)	GraphQL	RPC (Remote Procedure Call)
Organized in terms of	enveloped message structure	compliance with six architectural constraints	schema & type system	local procedure call
Format	XML only	XML, JSON, HTML, plain text	JSON	JSON, XML, Protobuf, Thrift, FlatBuffers
Learning curve	Difficult	Easy	Medium	Easy
Community	Small	Large	Growing	Large
Use cases	<ul style="list-style-type: none"> - payment gateways - identity management - CRM solutions - financial and telecommunication services - legacy system support 	<ul style="list-style-type: none"> - public APIs - simple resource-driven apps 	<ul style="list-style-type: none"> - mobile APIs - complex systems - micro-services 	<ul style="list-style-type: none"> - command and action-oriented APIs - high performance communication in massive micro-services systems



this talk will be in Czech only

Tam a zase zpátky aneb cesta HTTP požadavku

přednáší Miroslav Brabenec

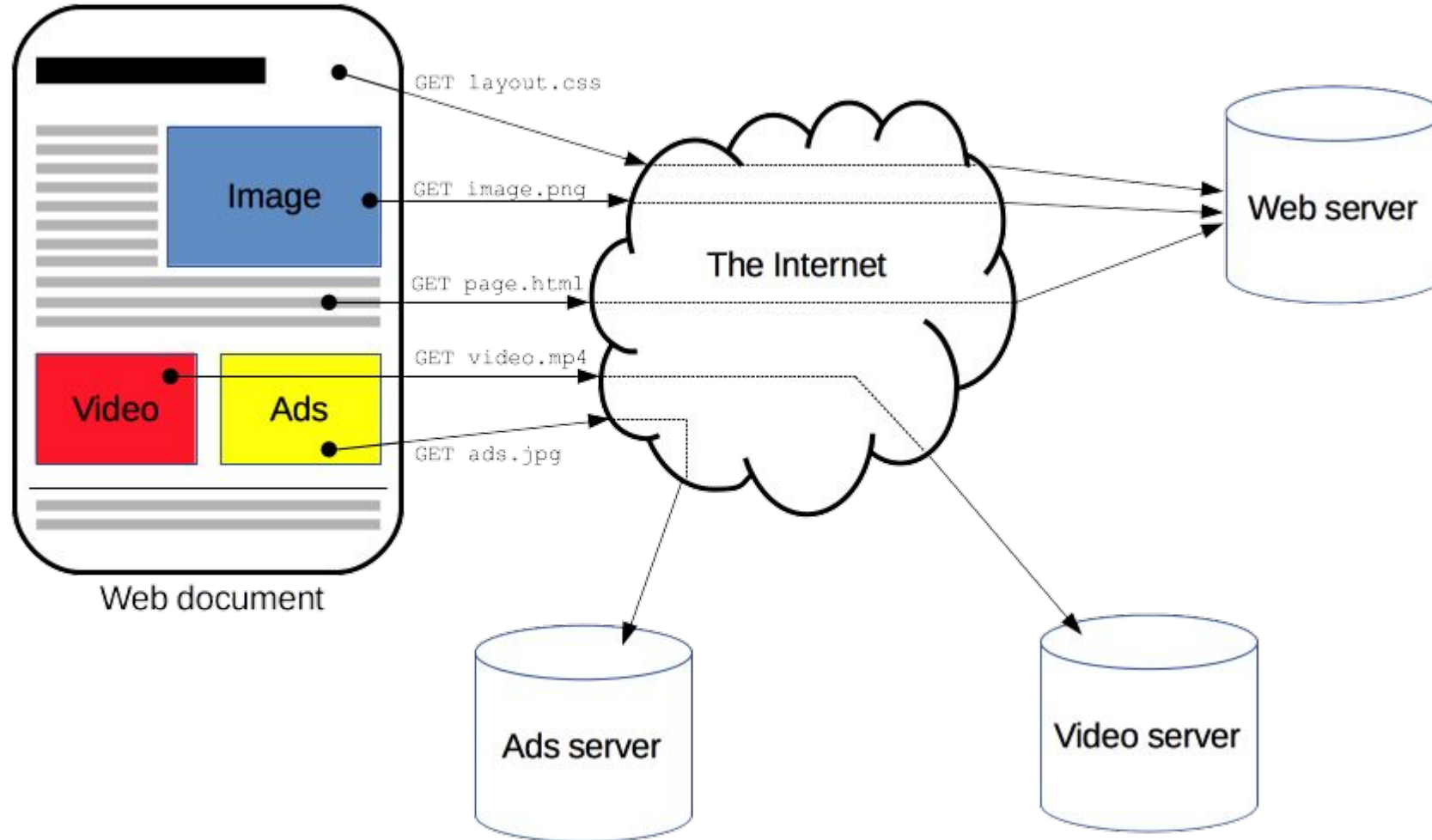
Friday 15 September | 16:40 (30 minutes) | `__init__`

Fantastický příběh o útrapách, kterým čelí čaroděj, jehož cílem je doručit delete HTTP (HobbiT Transfer Protocol) požadavek do ohně API osudu na URL mount-doom.mordor hostované v EWS (Eye Web Services).

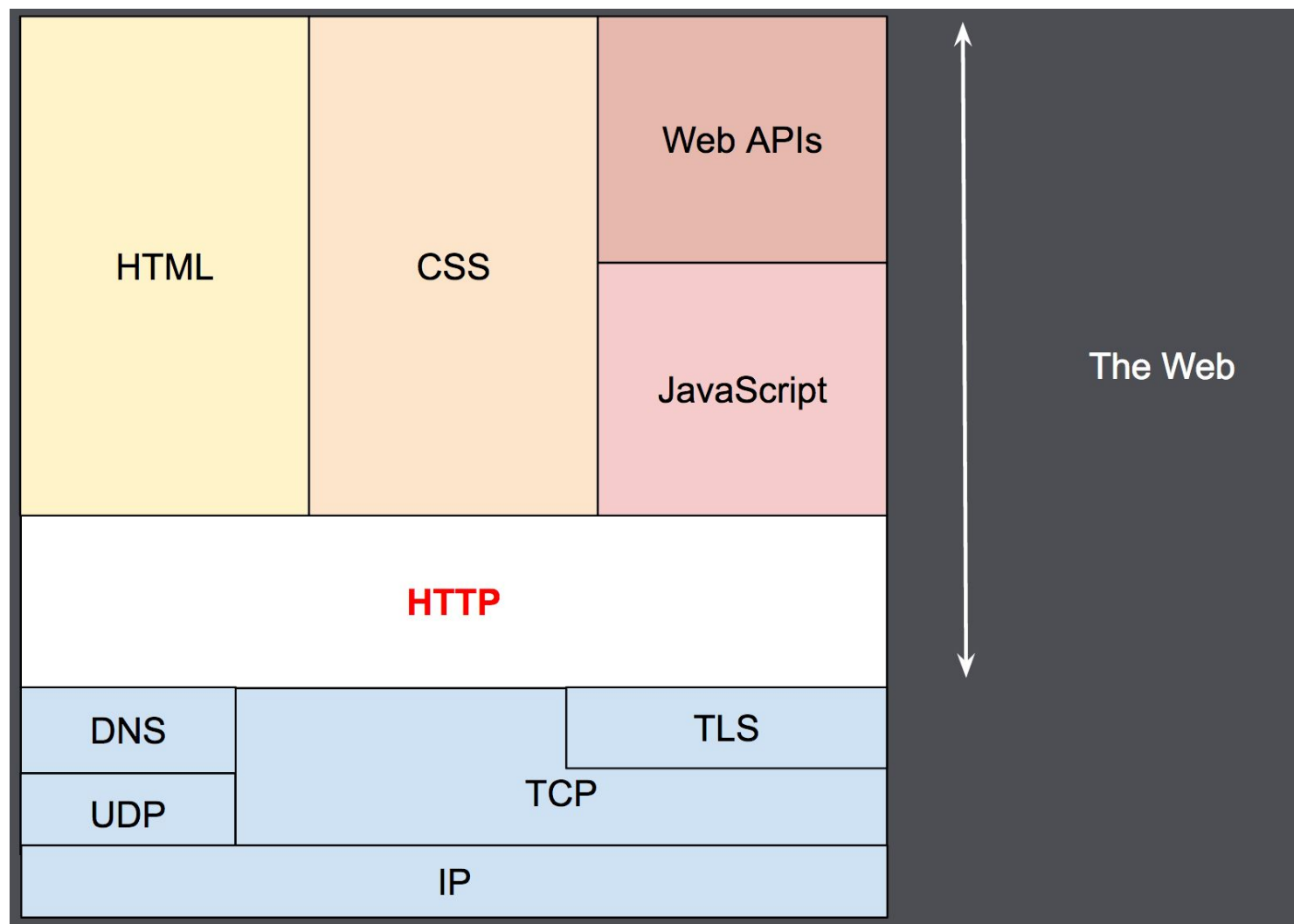
Úvod do problematiky síťového provozu a tajů, jak fungují webové služby. Odhalení toho, co všechno se může dít, mezi CURL příkazem na jedné straně a Flask aplikací na straně druhé.

Úvod do problematiky základů síťování, load balancingu, HA (High Availability) nebo bezpečnosti.

HTTP

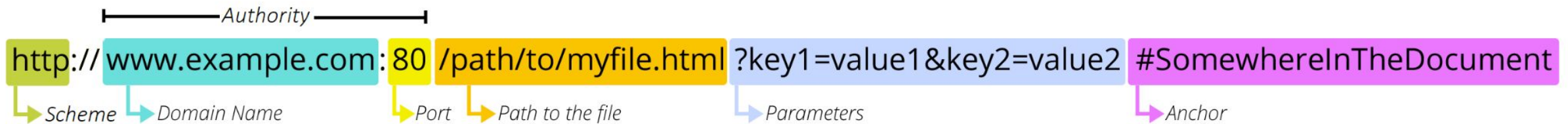


HTTP



HTTP

- URL



- Hlavičky

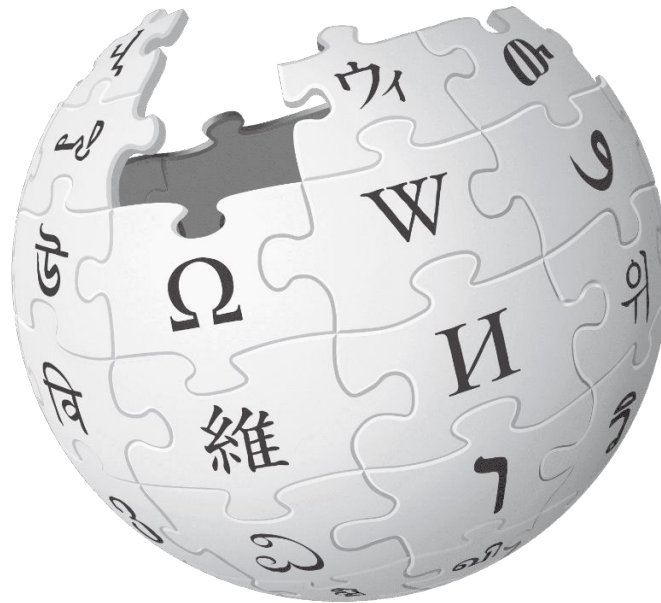
- Tělo

- Jak to vypadá v prohlížeči při inspectu

HTTP METHODS

- GET
 - získání dat
 - POST
 - vytvoření dat
 - PUT
 - úprava dat
 - DELETE
 - smazání dat
- a další

HTTP RETURN CODES



WIKIPEDIA
The Free Encyclopedia

Postman

- Postman overview
- HTTPIE jako alternativa

Co je to FastAPI

- IMHO:
 - Dobře navržený pro vývojáře
 - Minimum boilerplate
 - Vhodný pro malé služby
 - Automaticky generovaná dokumentace

Task0: Walkthrough repository and setup



<https://github.com/minarth/pycon-first-api>

Task1a: GET Product repository data

**Task1b: GET Product specific
data**

Bonus: GET Client by name

Task1c: Errors on missing data

Task2: GET Balance

Task3a: POST client

Task3b: POST client with validation

Task3c: POST client-product

Task4: DELETE client-product

Task5: DELETE client-product

Task6: Send money between accounts

Task7: Separate Framework part from Application and Domain

Kam se dá pokračovat

- Postman a testing set
- FastAPI a databáze
- FastAPI a frontend
- Sync vs Async

This ISBN validation service uses a POST HTTP method to pass the following structured snippet of XML to the service using the body of the HTTP request. It provides a structured request for the server to process and return a response:

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <IsValidISBN10 xmlns="http://webservices.daehosting.com/ISBN">
      <sISBN>0-19-852663-6</sISBN>
    </IsValidISBN10>
  </soap:Body>
</soap:Envelope>
```

This then returns the following XML response, which confirms that the ISBN number is valid:

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <m:IsValidISBN10Response xmlns:m="http://webservices.daehosting.com/ISBN">
      <m:IsValidISBN10Result>true</m:IsValidISBN10Result>
    </m:IsValidISBN10Response>
  </soap:Body>
</soap:Envelope>
```