HTTP Requests

Http request

- made by a client, to a named host, which is located on a server

- aim is to access a resource on the server

- A correctly composed HTTP request contains the following elements:

  1. A request line.

  2. A series of HTTP headers, or header fields.

  3. A message body, if needed.

Request line

`GET /software/htp/cics/index.html HTTP/1.1`

- the first line in the request message

- consists of at least three items

  1. A „method" -> one-word command that tells the server what it should do with the resource

  2. The path component of the URL for the request. The path identifies the resource on the server

  3. The HTTP version number, showing the HTTP specification to which the client has tried to make the message comply

Request line

`GET example.com/api/profile?order=DESC HTTP/1.1`

- might contain some additional items

    - A query string -> provides a string of information that the resource can use for some purpose. It follows the path, and is preceded by a question mark.

    - The scheme and host components of the URL, in addition to the path. When the resource location is specified in this way, it is known as the absolute URI form

    - ?order=DESC&searchQuery=bla

Request Line
Http methods aka verbs

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

  - https://developer.mozilla.org/de/docs/Web/HTTP/Methods

  - The GET method requests a representation of the specified resource. Requests using GET should only retrieve data.

  - The POST method is used to submit an entity to the specified resource, often causing a change in state or side effects on the server.

Http Headers


```
GET http://localhost:80/api/item?id=99
Accept-Language: fr, de
Accept: text/html
```

- are written on a message to provide the recipient with information about:

  - the message

  - the sender

  - the way in which the sender wants to communicate with the recipient

- Each HTTP header is made up of a name and a value

- HTTP protocol specifications define the standard set of HTTP headers

- The HTTP headers for a client's request contain information that a server can use to decide how to respond to the request

Message body

- the actual content of the message

- Often called „request body"

- appropriate for some request methods and inappropriate for others

  - a request with the POST method, which sends input data to the server, has a message body containing the data.

  - A request with the GET method, which asks the server to send a resource, does not have a message body.

Example

```
POST /api/ValidateTwitterFollowerCount HTTP/1.1
Host: mywebsites.net
Content-Type: application/json
cache-control: no-cache

{

  "followersCount" : 220,

  "tweettext":"#kotlin rocks",

  "Name": "John Doe"

}
```

Example

- Calling some API that is publicly available on the internet

  - https://newsapi.org/docs