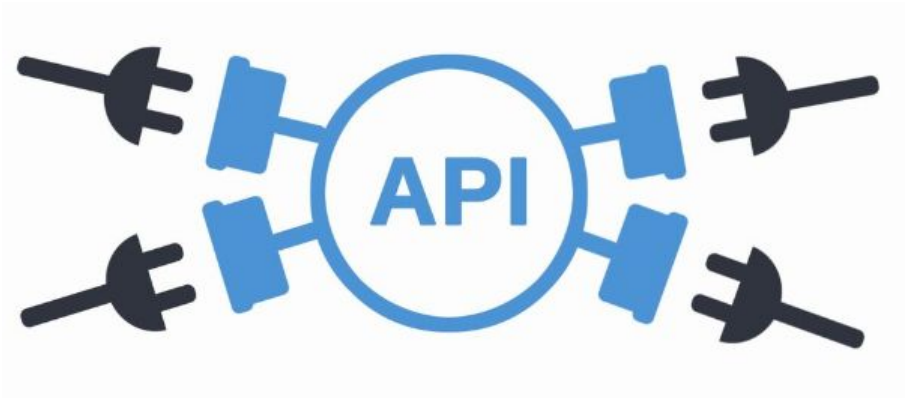
HTL LEONDING

REST - API

with JSON Server and Postman

API

- **API** stands for **Application Program Interface**
- Set of methods of communication between various software components
- An API allows software to communicate with another software
- With APIs, data can be easily exchanged and processed between programs
- Examples:
  - communication between applications, or (graphical) user interfaces



WEB - API

- Our focus is on **Web APIs**,
- It allows us to **interact** with a **web server**
- The web server is using **HTTP requests** to communicate to a publicly available **URL** endpoint containing **JSON** data.

Action	HTTP	Method Definition
Create	POST	Creates a new resource
Read	GET	Retrieves a resource
Update	PUT/PATCH	Updates an existing resource
Delete	DELETE	Deletes a resource

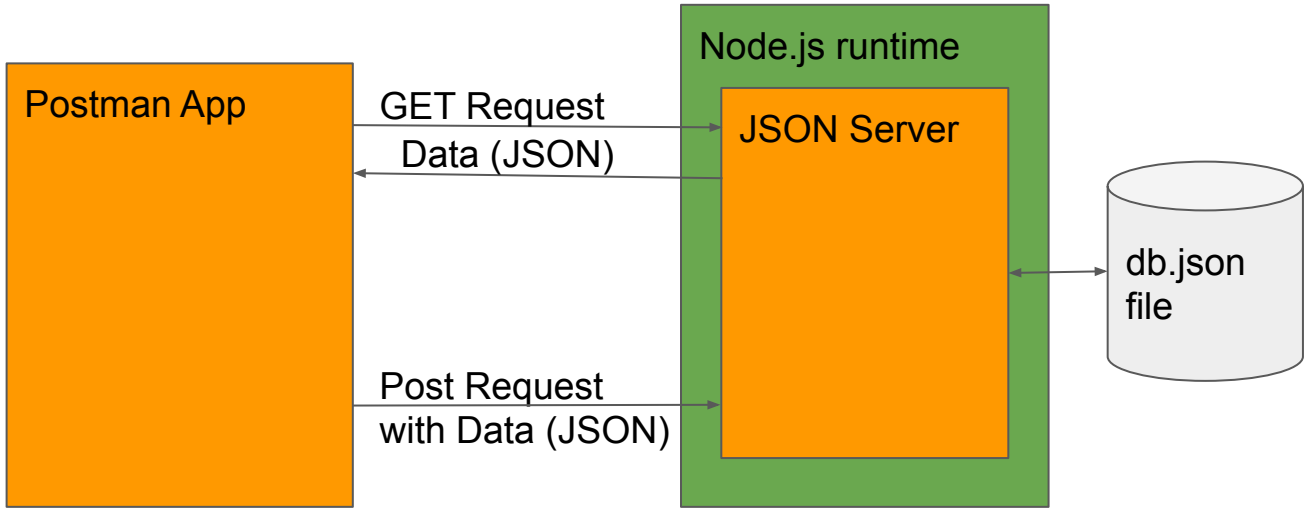
JSON - JavaScript Object Notation

- JSON (JavaScript Object Notation) is a lightweight data exchange format
- Easy for humans to read and write
- Easy for machines to parse (analyze data structures) and generate.
- JSON is a text format that is completely independent of programming languages
- We can convert any JavaScript object into JSON, and send JSON to the server.
- We can convert any JSON received from the server into JavaScript objects.

Further Links:

https://www.json.org/json-de.html
https://www.w3schools.com/js/js_json_intro.asp

Using JSON Server with Postman



Using JSON Server with Postman

- Download the latest version of Node.js (https://nodejs.org/en/) and install it on your computer. On school Computers Node.js is already installed.
- Check which version of Node.js is installed, in the sample below v10.15.0 is installed

```
C:\>node -v
v10.15.0
```

- Install the JSON Server (**fake** REST API) - https://github.com/typicode/json-server#getting-started
  - `npm install -g json-server`
  - something like the following will show up

```
C:\>npm install -g json-server
npm WARN deprecated request@2.88.2: request has been deprecated, see https://git
hub.com/request/request/issues/3142
C:\Users\mayrwoeger\AppData\Roaming\npm\json-server -> C:\Users\mayrwoeger\AppDa
ta\Roaming\npm\node_modules\json-server\lib\cli\bin.js
+ json-server@0.16.1
updated 1 package in 20.369s
```

Using JSON Server with Postman

- Create a file called `db.json` with some data and save it to a folder of your choice

```json
{
  "posts": [
    { "id": 1, "title": "json-server", "author": "typicode" }
  ],
  "comments": [
    { "id": 1, "body": "some comment", "postId": 1 }
  ],
  "profile": { "name": "typicode" }
}
```

- Open a Command Line Window and change to the folder where you saved the `db.json` file

```
C:\>cd json

C:\json>
```

Using JSON Server with Postman

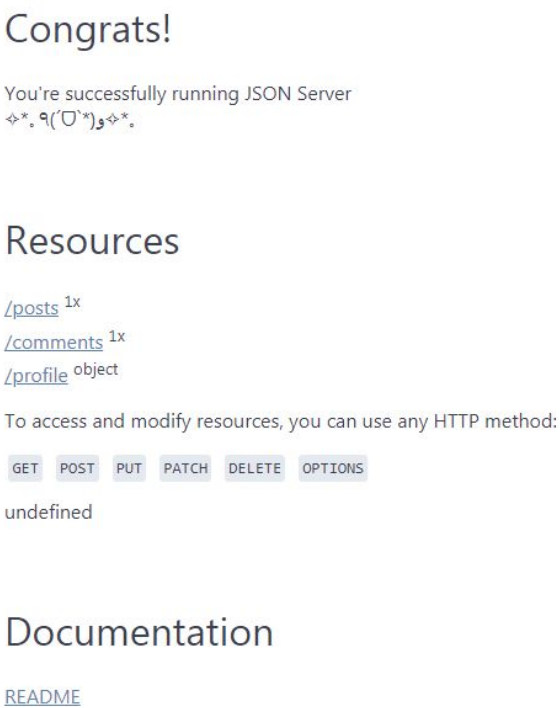
- Start the JSON Server using the following command

```
C:\json>json-server --watch db.json

  \{^_^}/ hi!

  Loading db.json
  Done

  Resources
  http://localhost:3000/posts
  http://localhost:3000/comments
  http://localhost:3000/profile

  Home
  http://localhost:3000

  Type s + enter at any time to create a snapshot of the database
  Watching...
```

Congrats, the JSON-Server is up and running!

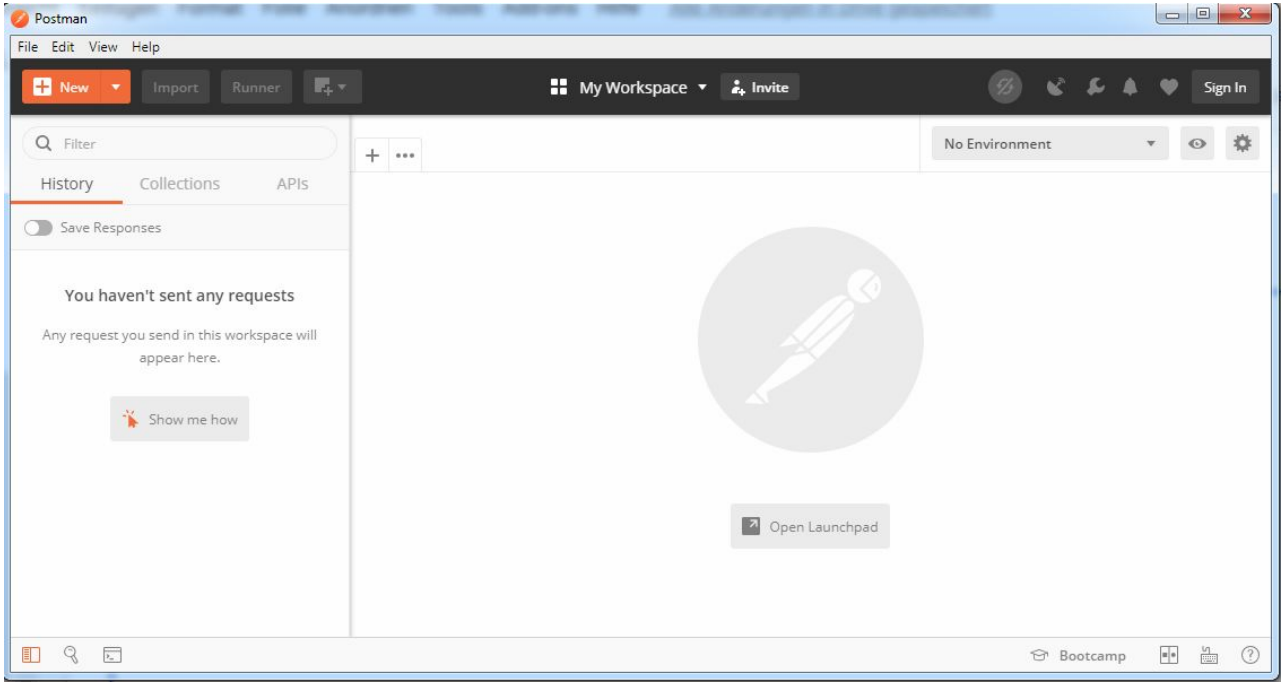
Using JSON Server with Postman

- Enter the following address in your web browser: http://localhost:3000 the following should show up



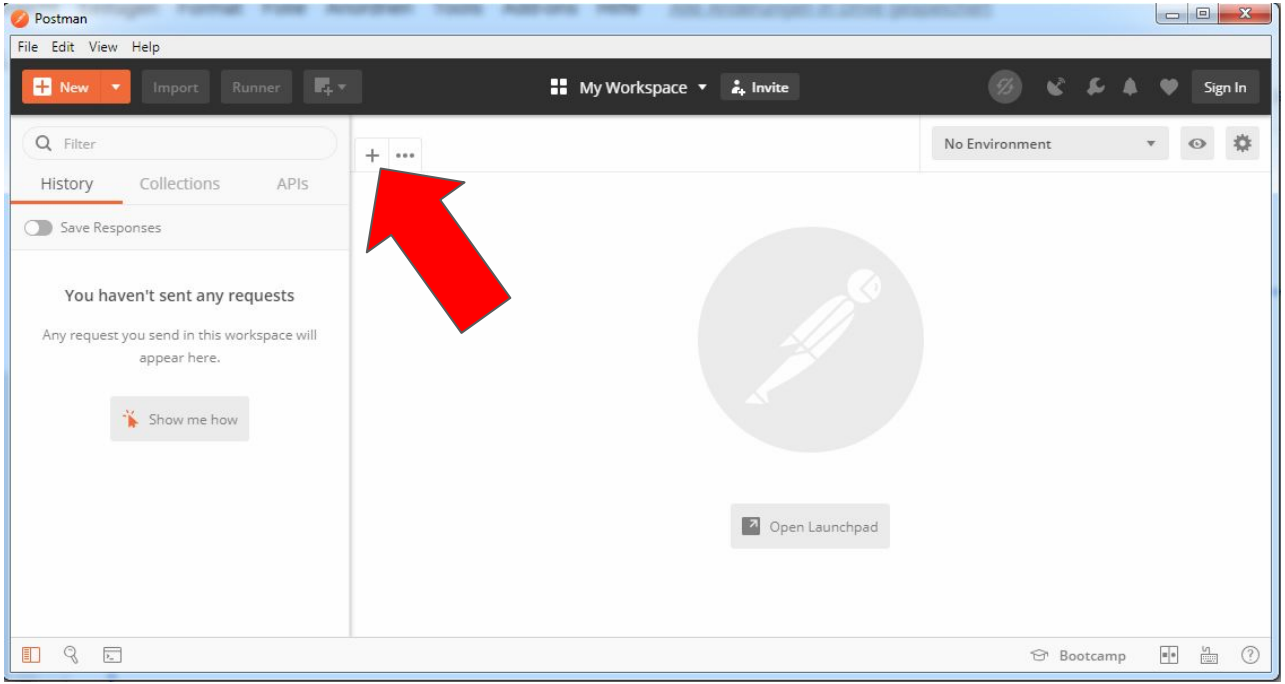
Using JSON Server with Postman

- Open the Postman App



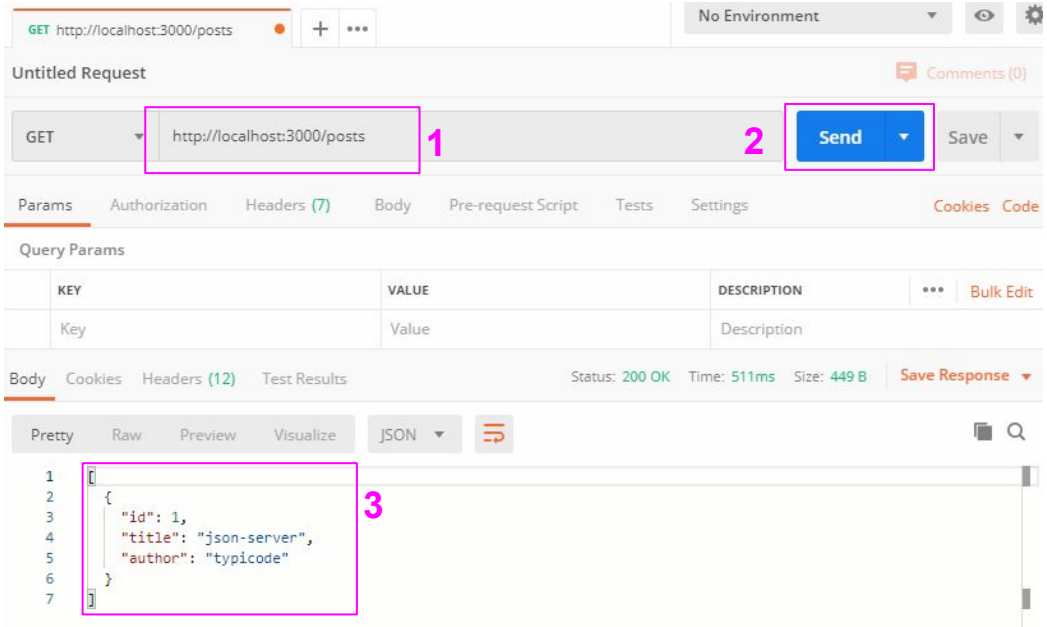
Using JSON Server with Postman - GET Request

- to create a new **GET request** click on the “plus”



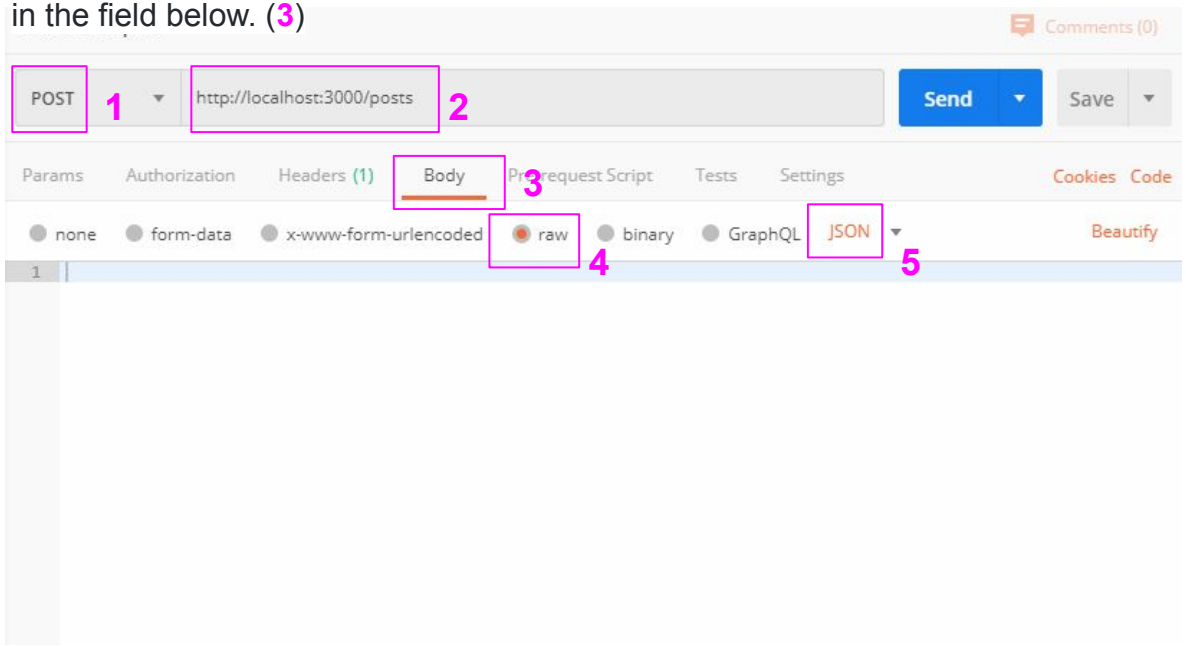
Using JSON Server with Postman - GET Request

- To make a **GET request** and fetch the data from our Server enter http://localhost:3000/posts (1) in the text field and press Send.(2) The data of the “posts”-resource will be fetched and shown in the field below. (3)



Using JSON Server with Postman - POST Request

- To make a **POST request** click on the “plus” as before and change in the dropdown menu the Request from GET to POST (1). Enter http://localhost:3000/posts (2) in the text field and change to the Body Tab (3). Here choose the radio button “raw” and in the drop down menu choose “JSON” The data of the “posts” resource will be fetched and shown in the field below. (3)



Using JSON Server with Postman - POST Request

- Now we will create a new data entry in our db.json file. For that enter something like `{ "id": 2, "title": "Mein Server", "author": "Ernest Hemingway" }` in the body text field.(1)
  Press the “Send”-Button (2)

Using JSON Server with Postman - POST Request

- Congrats again, the db.json file is now updated and should look something like the following.