REST

What is REST?

o REST is a specified way of communicating via internet

o It allows us to create simple and transparent APIs – called REST APIs

o A REST API is a intermediate layer between the database and the frontend – it let's us query the DB and also contains business logic (a set of rules how the data should be manipulated)

HTTP requests

o REST communication is based on HTTP requests/responses

o Each request has an address to which it is sent. It may also have a body and query parameters

o There are different types of requests

HTTP responses

○ When party A sends a request to party B it assumes it will get a response

○ The response always has a status code. The most often used are 200 OK , 400 Bad request and 500 internal server error

○ The response often also has a body, usually data that we request. For example if we request the data of an employee we will get a response with the following body:

```
{
    "name": "Jan",
    "surname": "Nowak",
    "email": "jan.nowak@jit.team"
}
```

Create
Read
Update
Delete

Create – POST request

- This type of request is used to send data

- It may be used for creating a new element in our database, for example a new employee

- It always carries a JSON body

- TRY IT: send a POST request to https://jsonplaceholder.typicode.com/posts

    With the body :

    ```
    {
        "title": "Post title",
        "body": "Post body",
        "userId": 1
    }
    ```

Read – GET request

o   This type of request is used to fetch data

o   The address that it is sent to often contains query parameters – additional info about the data we want to fetch

`https://we.jit.team/api/profiles/search?includeCandidates=false&page=0&size=48`

o   TRY IT: send a GET request to https://jsonplaceholder.typicode.com/posts

Update – PATCH request

○ This type of request is used to update existing data

○ It also contains a body with the data that we want to update

○ TRY IT: send a PATCH request to https://jsonplaceholder.typicode.com/posts

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Delete – DELETE request

○ This type of request is used to delete data from the database

○ It usually does not have a body

○ TRY IT: send a DELETE request to https://jsonplaceholder.typicode.com/posts

What does a REST API look like?

- Let's say we are building an API for manipulating car data

- Here is what the description would look like:
  - Fetch all cars: GET http://mycarapi.com/cars
  - Fetch one car by ID: GET http://mycarapi.com/cars/{id}
  - Add a new car: POST http://mycarapi.com/cars
  - Update an existing car: PATCH http://mycarapi.com/cars/{id}
  - Delete an existing car: DELETE http://mycarapi.com/cars/{id}