

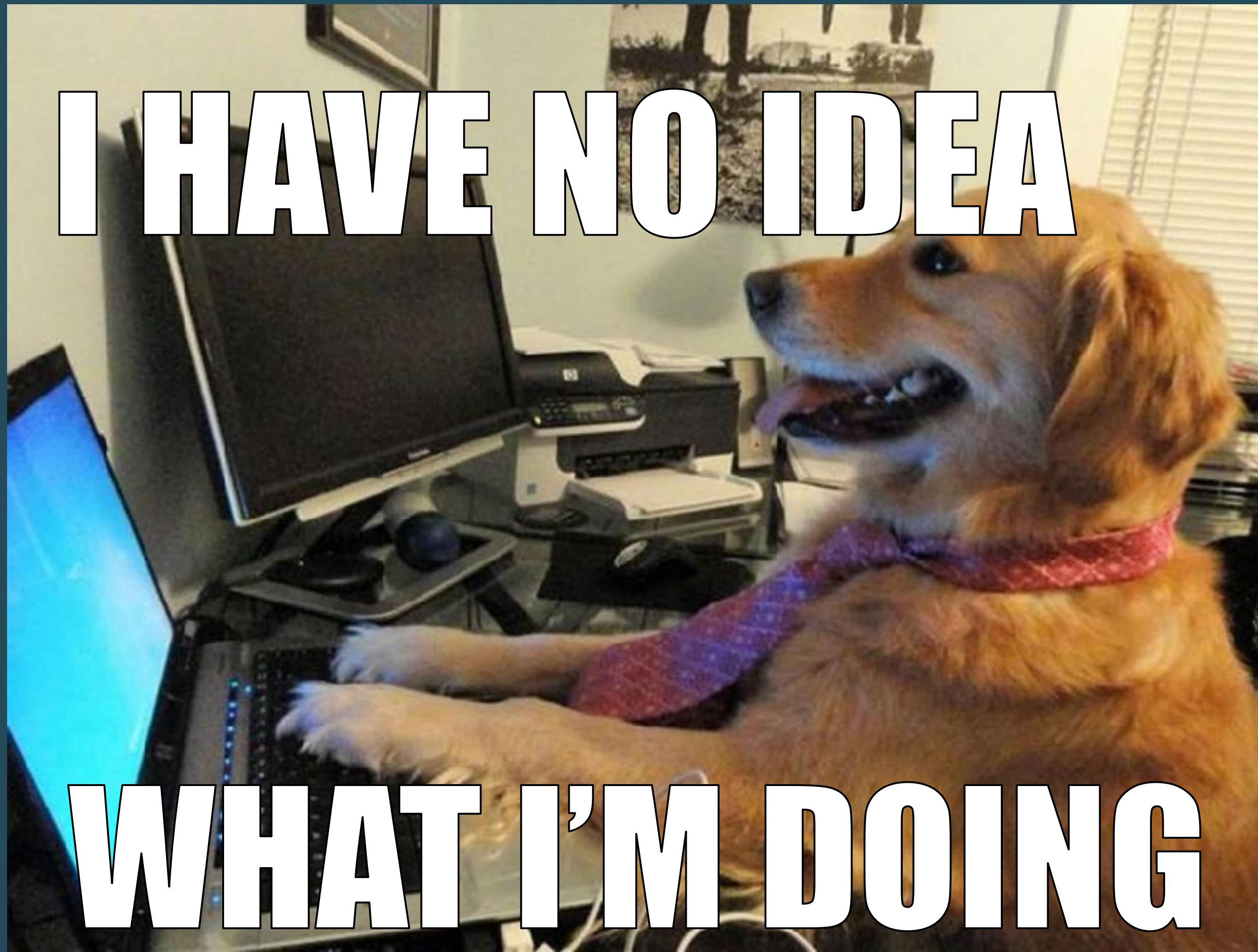
Loops, events og closure

Objekter, Arrays og DOM-manipulation

Agenda

- Objekter og arrays
- Fetch og JSON
- Loops
- Events og closure
- DOM-manipulation
- Specialisering af output

```
main.js
1 "use strict";
2
3 fetch("http://headlesscms.cederdorff.com/wp-json/wp/v2/posts?_embed")
4   .then(function(response) {
5     return response.json();
6   })
7   .then(function(json) {
8     appendPosts(json);
9   });
10
11 function appendPosts(posts) {
12   for (let post of posts) {
13     console.log(post);
14     document.querySelector("#grid-posts").innerHTML += `
15       <article>
16         <h3>${post.title.rendered}</h3>
17         <p>Email: <a href="mailto:${post.acf.email}">${post.acf.email}</a></p>
18         <p>Phone: ${post.acf.phone}</p>
19       </article>
20     `;
21   }
22 }
```



Men, hold det op imod,
hvad du kunne for 1
uge siden, 14 dage
eller 2 måneder...

Computer science student



Senior developer, 10+ years experience



<https://www.instagram.com/p/BxWAgatgSmn/>

Data

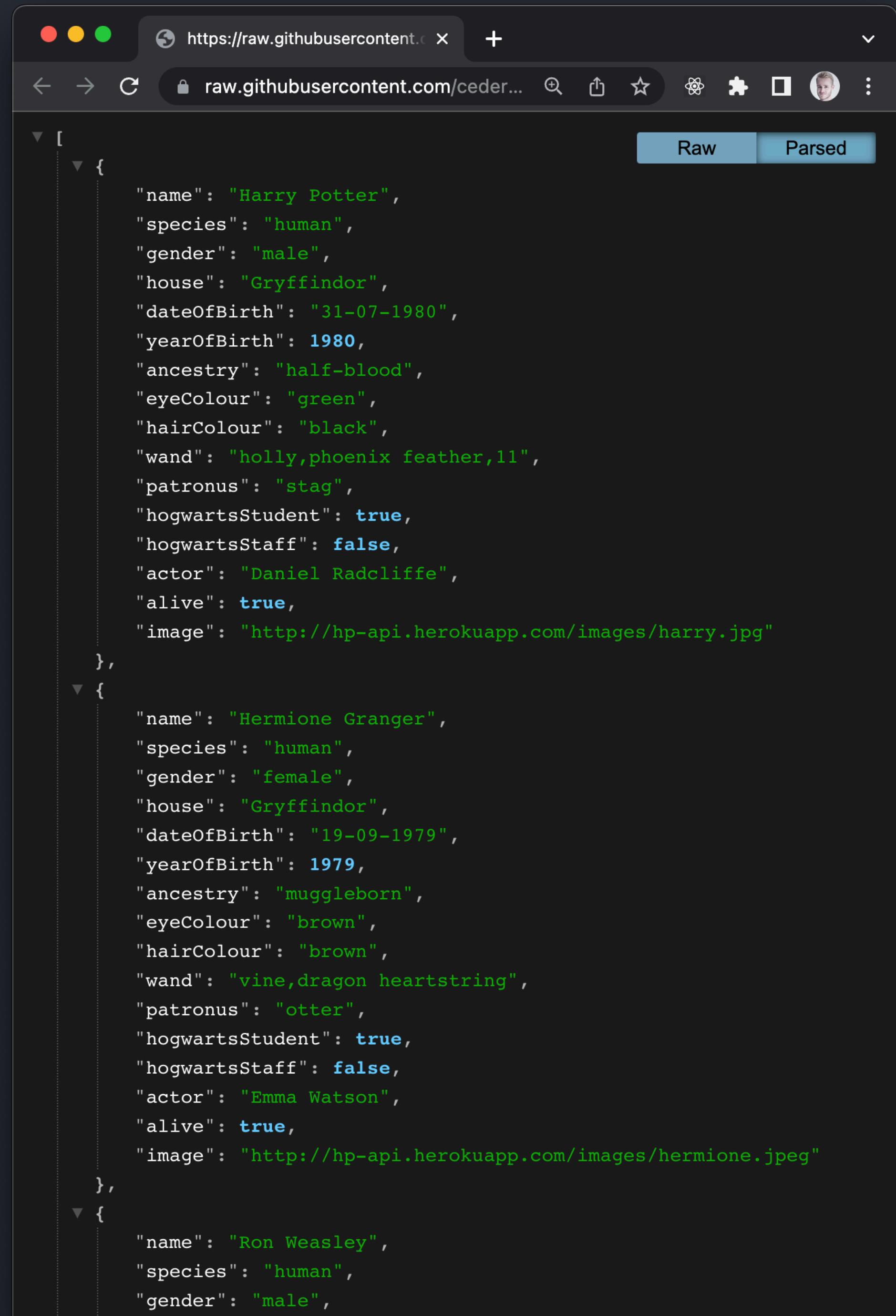
JavaScript, lister,
objekter, JSON, fetch,
DOM-manipulation og
meget mere...

The screenshot shows a browser window with the URL <https://raw.githubusercontent.com/ceder...>. The page displays a JSON array containing three objects: Harry Potter, Hermione Granger, and Ron Weasley. The JSON is color-coded for readability, with keys in blue and values in green. The objects are defined as follows:

```
[{"name": "Harry Potter", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "31-07-1980", "yearOfBirth": 1980, "ancestry": "half-blood", "eyeColour": "green", "hairColour": "black", "wand": "holly,phoenix feather,11", "patronus": "stag", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Daniel Radcliffe", "alive": true, "image": "http://hp-api.herokuapp.com/images/harry.jpg"}, {"name": "Hermione Granger", "species": "human", "gender": "female", "house": "Gryffindor", "dateOfBirth": "19-09-1979", "yearOfBirth": 1979, "ancestry": "muggleborn", "eyeColour": "brown", "hairColour": "brown", "wand": "vine,dragon heartstring", "patronus": "otter", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Emma Watson", "alive": true, "image": "http://hp-api.herokuapp.com/images/hermione.jpeg"}, {"name": "Ron Weasley", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "11-07-1980", "yearOfBirth": 1980, "ancestry": "pure-blood", "eyeColour": "brown", "hairColour": "red", "wand": "willow,mongoose hair,11", "patronus": "ewe", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Rupert Grint", "alive": true, "image": "http://hp-api.herokuapp.com/images/ron.jpg"}]
```

Hvordan viser vi denne JSON-data, så det giver mening for brugerne?

- Denne rette visualisering
- Generere HTML
- DOM-manipulation



The screenshot shows a browser window displaying JSON data for three characters: Harry Potter, Hermione Granger, and Ron Weasley. The data is presented in a hierarchical tree view, where each character is represented by a brace {}, and each character's properties are listed inside. The properties include name, species, gender, house, date of birth, year of birth, ancestry, eye colour, hair colour, wand material, patronus, Hogwarts status, staff status, actor, alive status, and image URL. The JSON is color-coded for readability, with green for strings and blue for booleans.

```
[{"name": "Harry Potter", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "31-07-1980", "yearOfBirth": 1980, "ancestry": "half-blood", "eyeColour": "green", "hairColour": "black", "wand": "holly,phoenix feather,11", "patronus": "stag", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Daniel Radcliffe", "alive": true, "image": "http://hp-api.herokuapp.com/images/harry.jpg"}, {"name": "Hermione Granger", "species": "human", "gender": "female", "house": "Gryffindor", "dateOfBirth": "19-09-1979", "yearOfBirth": 1979, "ancestry": "muggleborn", "eyeColour": "brown", "hairColour": "brown", "wand": "vine,dragon heartstring", "patronus": "otter", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Emma Watson", "alive": true, "image": "http://hp-api.herokuapp.com/images/hermione.jpeg"}, {"name": "Ron Weasley", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "11-12-1980", "yearOfBirth": 1980, "ancestry": "pureblood", "eyeColour": "brown", "hairColour": "red", "wand": "willow,mongoose hair,12", "patronus": "ewe", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Rupert Grint", "alive": true, "image": "http://hp-api.herokuapp.com/images/ron.jpg"}]
```

Forståelse for objekter og arrays

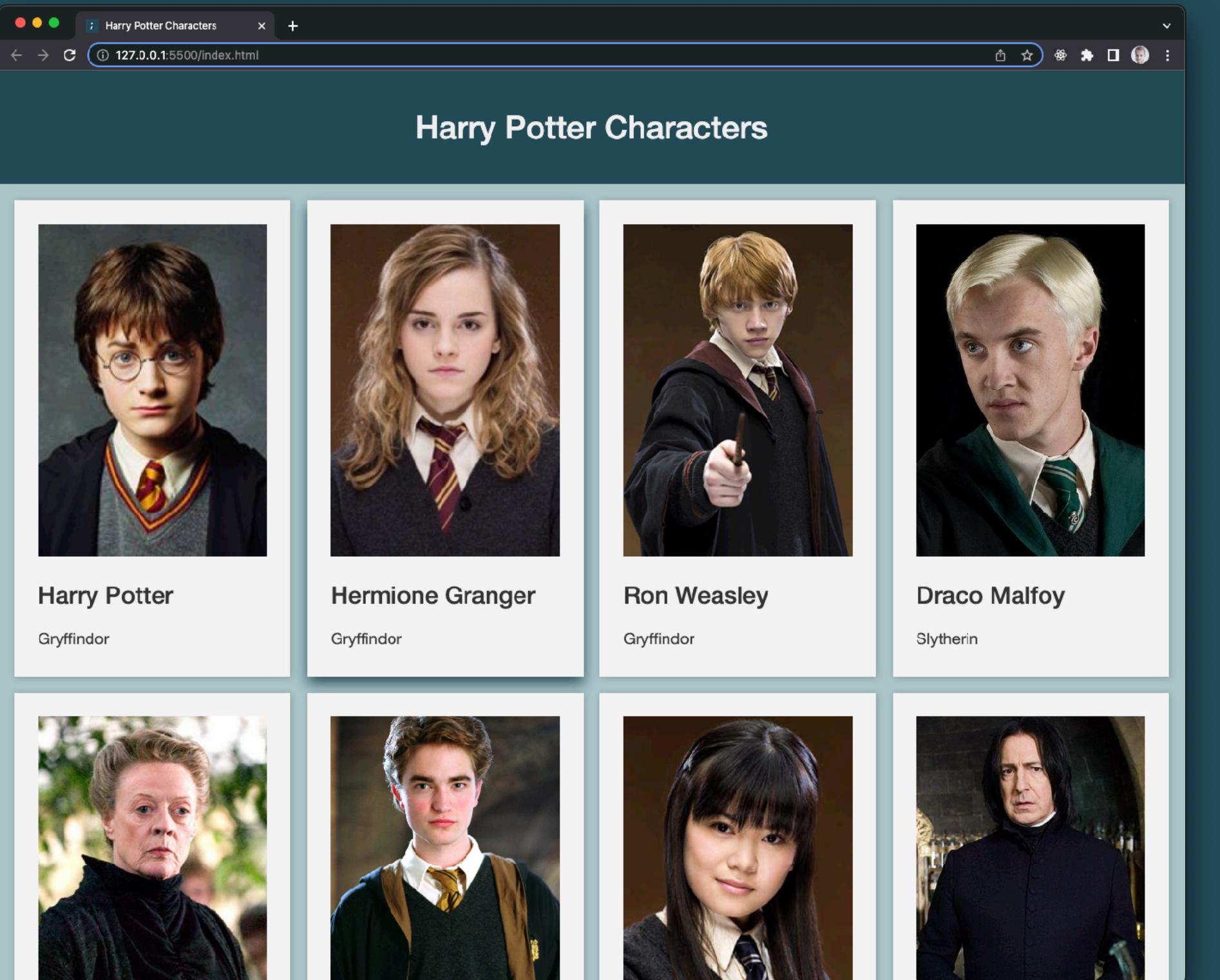
Fetch Persons

Person	Title	Email
Birgitte Kirk Iversen	Senior Lecturer	hki@mail.dk
Martin Aagaard Nøhr	Lecturer	mnr@mail.dk
Rasmus Cederdorff	Senior Lecturer	rnc@mail.dk
Dan Okkels Brendstrup	Lecturer	dob@mail.dk
Line Skjødt	Senior Lecturer & Internship Coordinator	lskj@mail.dk
Kasper Fischer Topp	Lecturer	keto@mail.dk
Anne Kirketerp	Head of Department	anki@mail.dk
Maria Louise Bendixen	Senior Lecturer	mlbe@basa.dk
Marlene Ahlgreen Jensen	Senior Lecturer	maj@basa.dk

Programming knowledge

Backend & Frontend

Frontend (client)



<https://cederdorff.github.io/potter-app/>

JSON Data Source (Server)

A screenshot of a browser developer tools JSON viewer. It shows two tabs: "Raw" and "Parsed". The "Raw" tab displays the raw JSON data, and the "Parsed" tab displays the data as a hierarchical object. The JSON data represents the characters from the Harry Potter series.

```
Raw Parsed  
[{"name": "Harry Potter", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "31-07-1980", "yearOfBirth": 1980, "ancestry": "half-blood", "eyeColour": "green", "hairColour": "black", "wand": "holly,phoenix feather,11", "patronus": "stag", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Daniel Radcliffe", "alive": true, "image": "http://hp-api.herokuapp.com/images/harry.jpg"}, {"name": "Hermione Granger", "species": "human", "gender": "female", "house": "Gryffindor", "dateOfBirth": "19-09-1979", "yearOfBirth": 1979, "ancestry": "muggleborn", "eyeColour": "brown", "hairColour": "brown", "wand": "vine,dragon heartstring", "patronus": "otter", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Emma Watson", "alive": true, "image": "http://hp-api.herokuapp.com/images/hermione.jpeg"}, {"name": "Ron Weasley", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "01-03-1980", "yearOfBirth": 1980, "ancestry": "pure-blood", "eyeColour": "blue", "hairColour": "red", "wand": "willow,unicorn tail-hair,14", "patronus": "Jack Russell terrier", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Rupert Grint", "alive": true, "image": "http://hp-api.herokuapp.com/images/ron.jpg"}]
```

<https://raw.githubusercontent.com/cederdorff/dat-js/main/data/potter.json>

Objects

A set of named values

Objects are used to store keyed
collections of various data



Containers for named values
called properties. A property
is a “key: value” pair

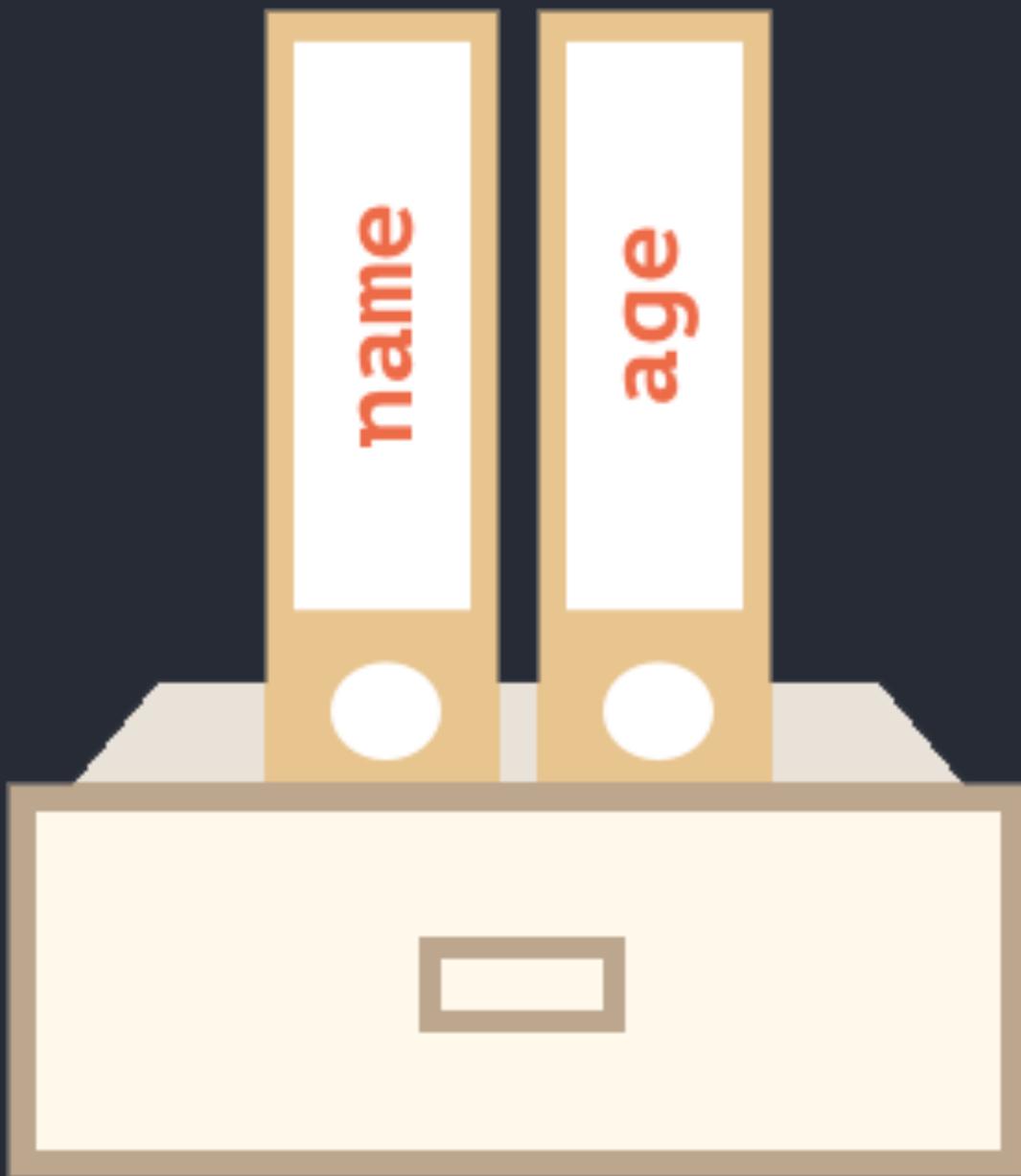
Objects

A set of named values

```
const user = {  
    name: "Alicia",  
    age: 6  
};
```

```
console.log(`${user.name} is ${user.age} years old.`);
```

user →



Alicia is 6 years old.

main.js:11

Hvad ser du?

The screenshot shows the KEA website's search interface. At the top, there is a navigation bar with links for 'For studerende', 'For ansatte', 'For alumner', 'Blog', 'Bibliotek', 'Job', and 'Kontakt'. Below the navigation bar is a search bar with the placeholder 'DEL AF NAVN, E-MAIL ELLER TELEFON' and a dropdown menu for 'AFDELING' set to 'Alle'. A search button labeled 'Søg...' is located below the search bar. To the right of the search bar, there is a circular profile picture of a man with a beard, identified as Rasmus Cederdorff. Below the profile picture, his name is listed as 'RASMUS CEDERDORFF' followed by the title 'Lektor'. His contact information includes an email address (E: RACE@kea.dk), an affiliation ('KEA Digital'), and a physical address ('Guldbergsgade 29N, 2200 København N'). A red link labeled '→ LÆS MERE' is present at the bottom. The footer contains links for 'KEA - KØBENHAVNS ERHVERVSAKADEMI', 'OM OS', 'FOR STUDERENDE', and 'PRAKTISK INFO'.

This screenshot shows a detailed view of the search result for 'RASMUS CEDERDORFF'. The page title is 'FIND EN MEDARBEJDER'. The search bar at the top has 'RACE' entered. The main content area displays a card for 'RASMUS CEDERDORFF', showing his profile picture, name, title ('Lektor'), email ('E: RACE@KEA.DK'), affiliation ('KEA Digital'), and address ('Guldbergsgade 29N, 2200 København N'). It also lists his LinkedIn and Instagram profiles and provides a red 'LÆS MERE' link. The footer is identical to the first screenshot.

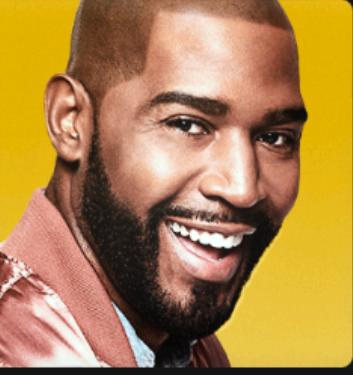
Hvad ser du?

The screenshot shows a web browser window with the URL kea.dk/find-medarbejder#qx-kea-phonebook-7910. The page title is "Find en medarbejder - Københavns Erhvervsakademi". The navigation bar includes links for "For studerende", "For ansatte", "For alumner", "Blog", "Bibliotek", "Job", and "Kontakt". A language switcher shows "EN" and a search icon. The main heading is "FIND EN MEDARBEJDER". Below it is a search form with fields for "DEL AF NAVN, E-MAIL ELLER TELEFON" containing "RACE" and "AFDELING" dropdown set to "Alle". A search button labeled "Søg..." is present. To the right, there is a profile card for "RASMUS CEDERDORFF" showing a photo, title "Lektor", email "E: RACE@kea.dk", address "KEA Digital, Guldbergsgade 29N, 2200 København N", and a "LÆS MERE" link. At the bottom, there are footer sections for "KEA - KØBENHAVNS ERHVERVSAKADEMI", "OM OS", "FOR STUDERENDE", and "PRAKTISK INFO".

```
const race = {  
    name: "Rasmus Cederdorff",  
    position: "Lektor",  
    mail: "race@kea.dk",  
    department: "KEA Digital",  
    address: "Guldbergsgade 29N, 2200 København N",  
    image: "https://kea.dk/slir/w180-c1x1/images/us";  
};
```

NETFLIX

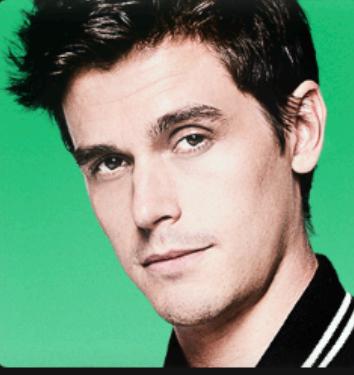
Hvem ser?



Personen der
rent faktisk
betaler for
profilen



Nasser 1



Nasser 2



Nasser 3



Nasser 4 Khader

[Administrer profiler](#)

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netflix.com

NETFLIX Start Serier Film Nyt og populært Min liste

N SERIE

TOO HOT TO HANDLE

TOP 10 Nr. 4 i Danmark i dag

På paradisets kyst mødes de lækkere singler og mingler. Men der er et tvist. For at vinde den attraktive pengepræmie, må de give afkald på at have sex.

Afspil Mere info

13+

Kun på Netflix

TOO HOT TO HANDLE NYE EPISODER

EMILY IN PARIS

QUEER EYE more than a makeover

The Woman in the House Across the Street From the Girl in the Window

BRIDGERTON NYE EPISODER

Se videre med profilen Nasser 1

the office

TIGER KING

Don't Look UP

JEFFREY EPSTEIN: FILTHY RICH

THE MIND explained

Frost II (2019) - IMDb

imdb.com/title/tt4520988/

IMDb Menu All Search IMDb

Frost II

Original title: Frozen II
2019 · 7 · 1h 43m

IMDb RATING YOUR RATING POPULARITY

★ 6.8/10 160K ★ Rate 896 ▲ 102

Cast & crew · User reviews · Trivia · IMDbPro 🔍 All topics | [Share](#)

+ Play trailer 0:16

55 VIDEOS

99+ PHOTOS

Animation Adventure Comedy

+ Add to Watchlist

Anna, Elsa, Kristoff, Olaf and Sven leave Arendelle to travel to an ancient, autumn-bound forest of an enchanted land. They set out to find the origin of Elsa's powers in order to save their kingdom.

1.4K User reviews 289 Critic reviews 64 Metascore

Directors Chris Buck · Jennifer Lee

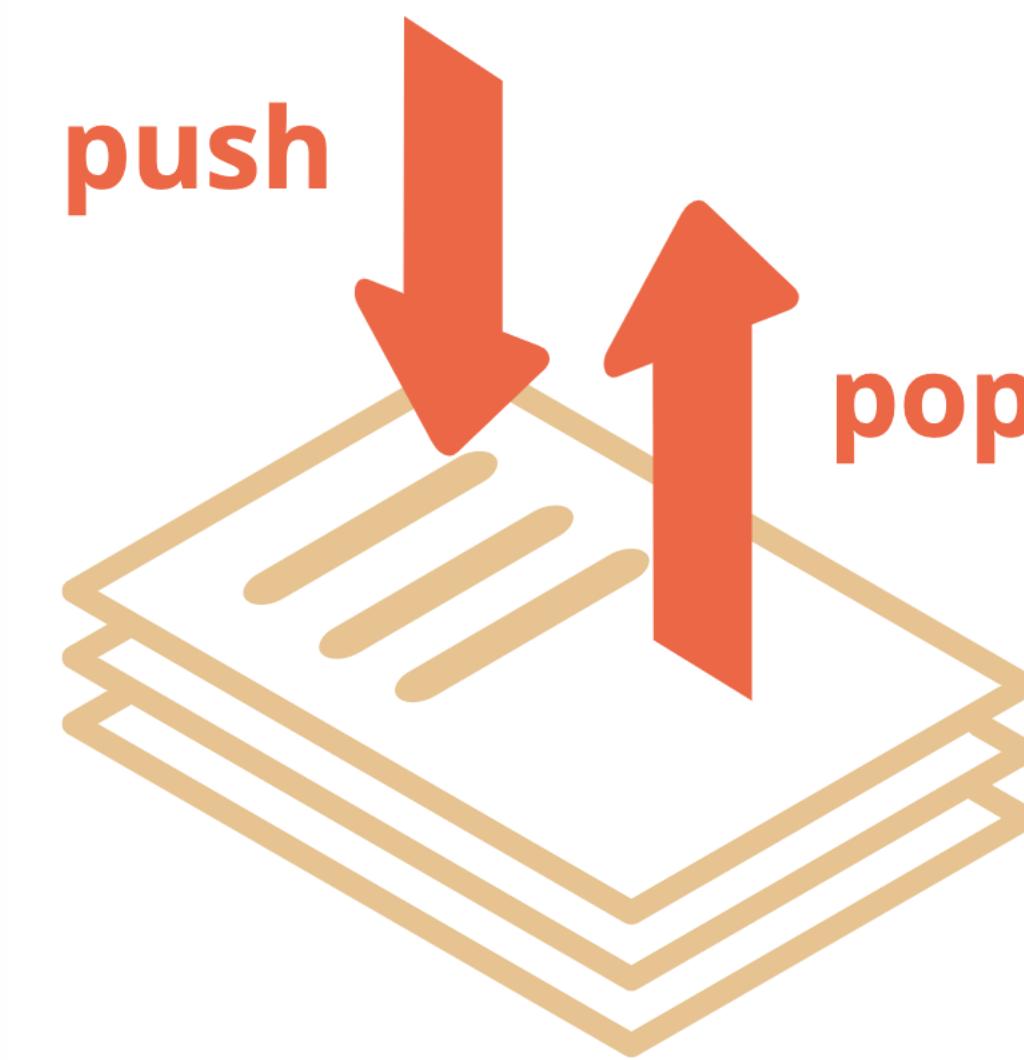
Writers

```
let movie = {  
  title: "Frozen 2",  
  description: "Elsa the Snow Queen has a",  
  trailer: "https://www.youtube.com/embed",  
  length: "1h 43m",  
  year: "2019"  
}
```

Arrays

Collections

Ordered collection of values or
objects



An array is a way to hold more than one value at a time we have a 1st, a 2nd, a 3rd, a 4th element and so on.

Hvad ser du?

The screenshot shows a web browser window for the KEA website. The URL is kea.dk/find-medarbejder#qx-kea-phonebook-7910. The page title is "Find en medarbejder". The header includes the KEA logo and navigation links for students, staff, alumni, blog, library, jobs, and contact. A search bar at the top has fields for "DEL AF NAVN, E-MAIL ELLER TELEFON" and "AFDELING" (set to "KEA Digital"), with a "Søg..." button. Below the search bar, there are five circular profile pictures. The first three profiles have associated data:

Name	Position	Mail	Department	Address	Image
LARS BOGETOFT	Uddannelseschef	T: 51850497 M: 51850497 E: larb@kea.dk	KEA Digital	Guldbergsgade 29N 2200 København N	https://share.cederdorff.com/images/lars-bogetoft.jpg
MAGDALENA MARIA OTAP	Adjunktvikar	E: mago@kea.dk	KEA Digital	Guldbergsgade 29N 2200 København N	https://share.cederdorff.com/images/magdalena-maria-otap.jpg
OSKAR TUSKA	Adjunkt	E: ostu@kea.dk	KEA Digital	Guldbergsgade 29N 2200 København N	https://share.cederdorff.com/images/oskar-tuska.jpg

The last two profiles are placeholder icons.

```
const lecturers = [
  {
    name: "Peter Lind",
    position: "Lektor",
    mail: "petl@kea.dk",
    department: "KEA Digital",
    address: "Guldbergsgade 29N, 2200 København N",
    image: "https://share.cederdorff.com/images/peter-lind.jpg"
  },
  {
    name: "Rasmus Cederdorff",
    position: "Lektor",
    mail: "race@kea.dk",
    department: "KEA Digital",
    address: "Guldbergsgade 29N, 2200 København N",
    image: "https://kea.dk/slir/w180-c1x1/images/rasmus-cederdorff.jpg"
  }
];
```

Hvad ser du?

CRUD App



Lars Bogetoft
Head of Education
lrb@kea.dk

UPDATE **DELETE**



Peter Lind
Senior Lecturer
petl@kea.dk

UPDATE **DELETE**



Magdalena "Lenka" Otap
Lecturer
mago@kea.dk

UPDATE **DELETE**



Rasmus Cederdorff
Senior Lecturer
race@kea.dk

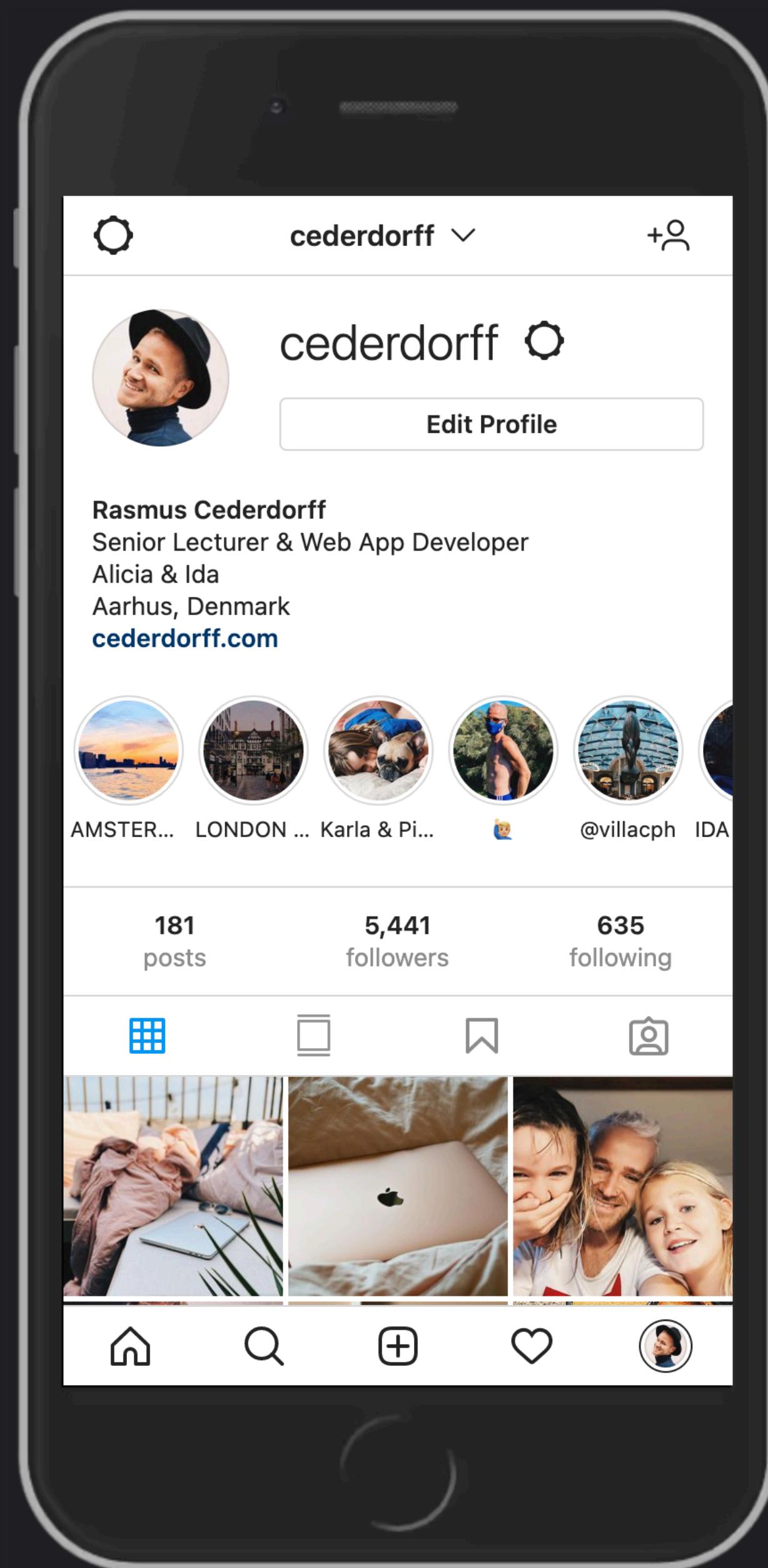
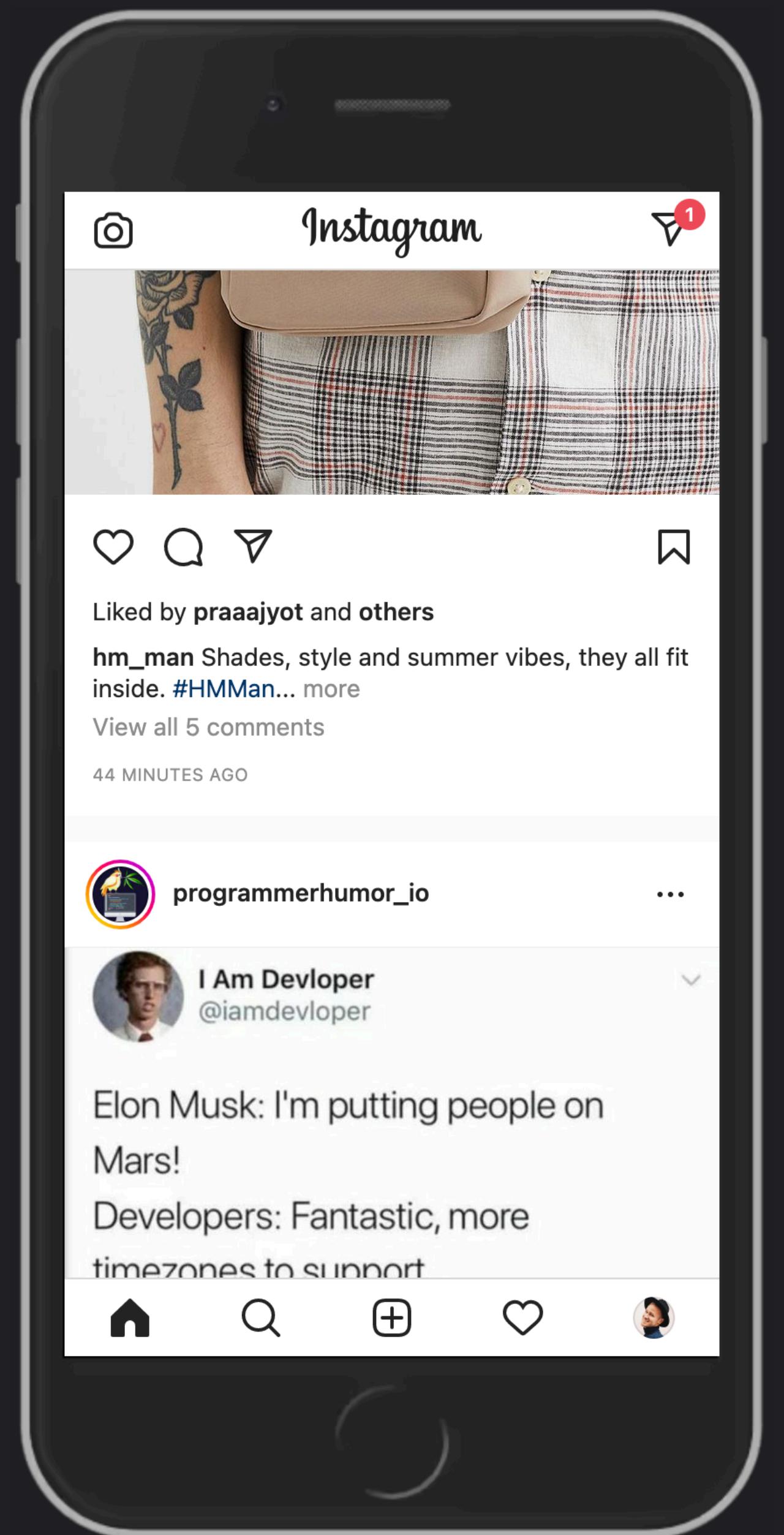
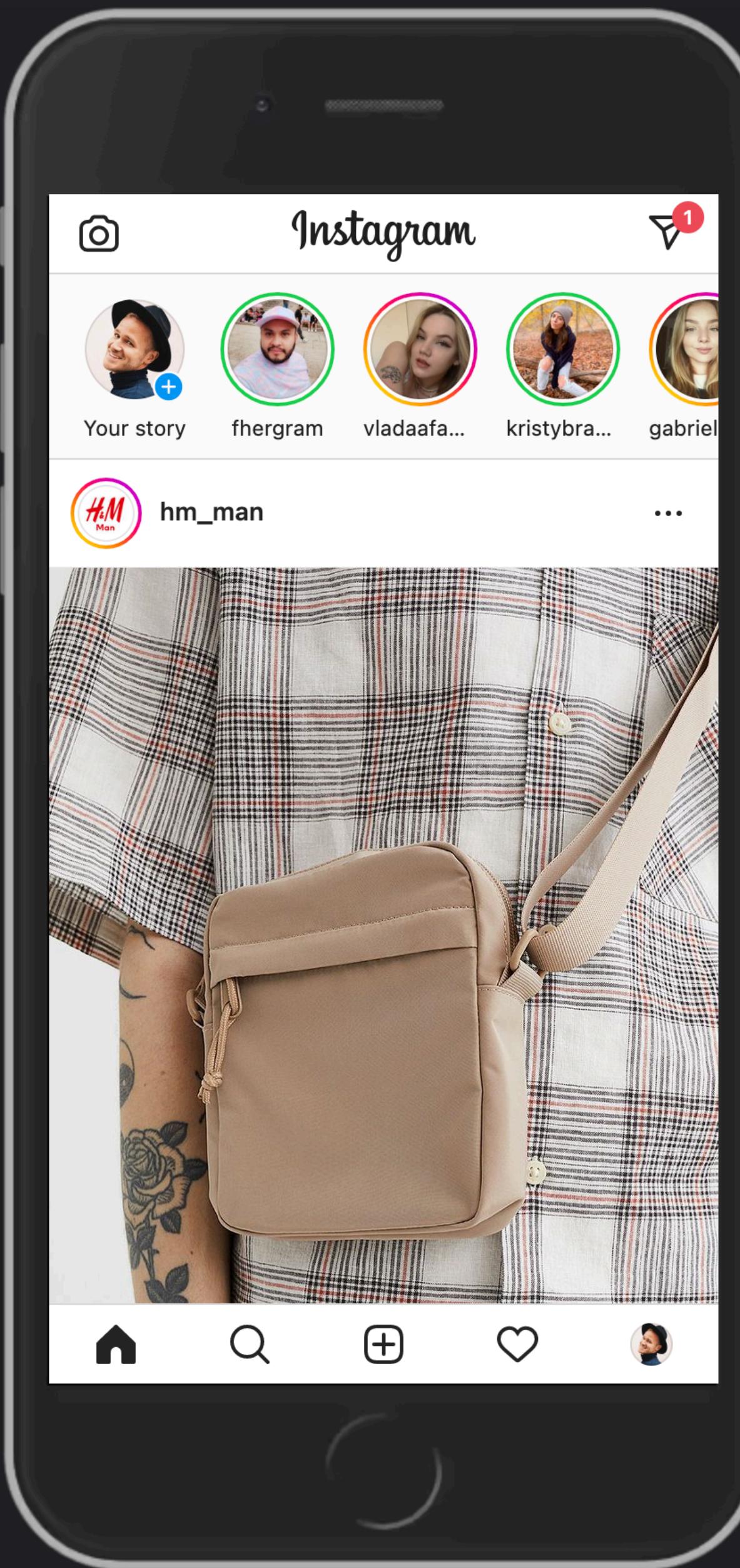
UPDATE **DELETE**

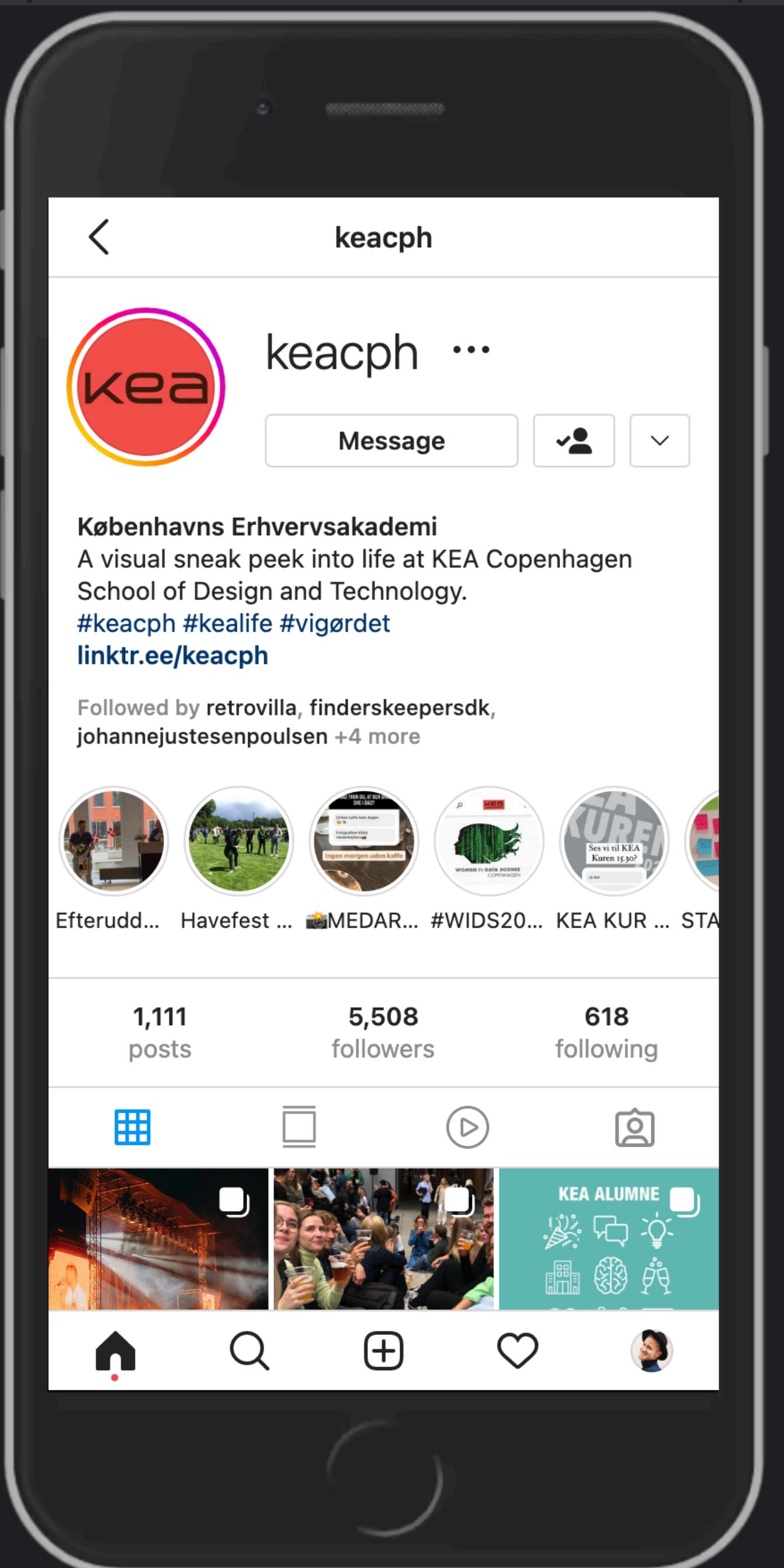
Create a new User

CREATE USER

Update User

<https://cederdorff.github.io/dat-js-crud-intro/>





Name	Headers	Payload	Preview	Response	Initiator	Timing	Cookies
□ ?modules=PolarisBD...							
□ ?content_type=PROF...							
□ ?username=keacph							
□ reels_tray/							
□ timeline/							
□ ig_sso_users/							
□ logging_client_events							
□ bz?__d=dis							
□ falco							
□ bz?__a=1&__ccg=G...							
□ batch_fetch_web/							
□ get_encrypted_crede...							
□ highlights_tray/							
□ ?target_user_id=140...							
□ badge/							
□ story/							
□ bulk-route-definitions/							
□ bulk-route-definitions/							
□ ?query_hash=69cba4...							
□ bz?__a=1&__ccg=G...							
□ bz?__a=1&__ccg=G...							
□ bulk-route-definitions/							
□ bz?__a=1&__ccg=G...							
□ logging_client_events							
□ bz?__d=dis							

Objects? Arrays?

The screenshot shows the homepage of DR Nyheder. At the top, there are navigation links for NYHEDER, DRTV, and DR LYD. Below the navigation, there are six thumbnail cards for TV shows: DR1: Løvens Hule, DR3: Nationens stærkeste, P1: LSD kælderen, DR LYD: Annas Margrethe, DR3: Du fucker med de forkerte, and A Very British Scandal. Under these, a section titled "Seneste nyt" (Latest news) displays three news items: "EU klager over Kinas hårde kurs over for Litauen" (5 MIN. SIDEN), "Børn og skoleelever opfordres stadig til to ugentlige coronatest" (13 MIN. SIDEN), and "England skrætter størstedelen af coronarestriktionerne fra i dag" (25 MIN. SIDEN). The main content area features a large image of medical supplies (a mask, a thermometer, a syringe, and a bottle of hand sanitizer) against a blue background, with the text "15 lande bakker Danmark op: Danske soldater skal blive i Mali" overlaid. At the bottom, a red banner reads "Regeringen har meldt genåbning - men ikke".

The screenshot shows the "ALLE ERHVERVSAKADEMI-UDDANNELSER" (All Business Academy Programs) page. The page has two main navigation links: "ALLE UDDANNELSER" and "UDDANNELSER UD FRA INTERESSE". Below these, there is a heading "ALLE ERHVERVSAKADEMI-UDDANNELSER" followed by a grid of 12 program profiles, each featuring a student's portrait and the program name. The programs listed are: AUTOMATIONSTEKNOLOG, BYGGEKOORDINATOR, BYGGETEKNIKER, DATAMATIKER, DESIGNTEKNOLOG, ENTREPRENØRSKAB OG DESIGN, EL-INSTALLATOR, ENERGITEKNOLOG, IT-TEKNOLOG, KORT- OG LANDMÅLING, MULTIMEDIEDESIGNER, and VVS-INSTALLATOR. Each program name is followed by a small arrow icon.

It's all objects &
arrays!

Data Types & Data Structures

Objects & Arrays

fetch(...)

HTTP Requests in
JavaScript.

A way to get and post data
from and to data sources.

```
// fetch with callbacks
fetch("https://cederdorff.github.io/web-frontend/callback.js")
  .then(function (response) {
    return response.json();
  })
  .then(function (data) {
    console.log(data);
  });
// or with promises
const response = fetch("https://cederdorff.github.io/web-frontend/promise.js");
const data = response.json();
console.log(data);
```

fetch(...)

HTTP Requests in
JavaScript.

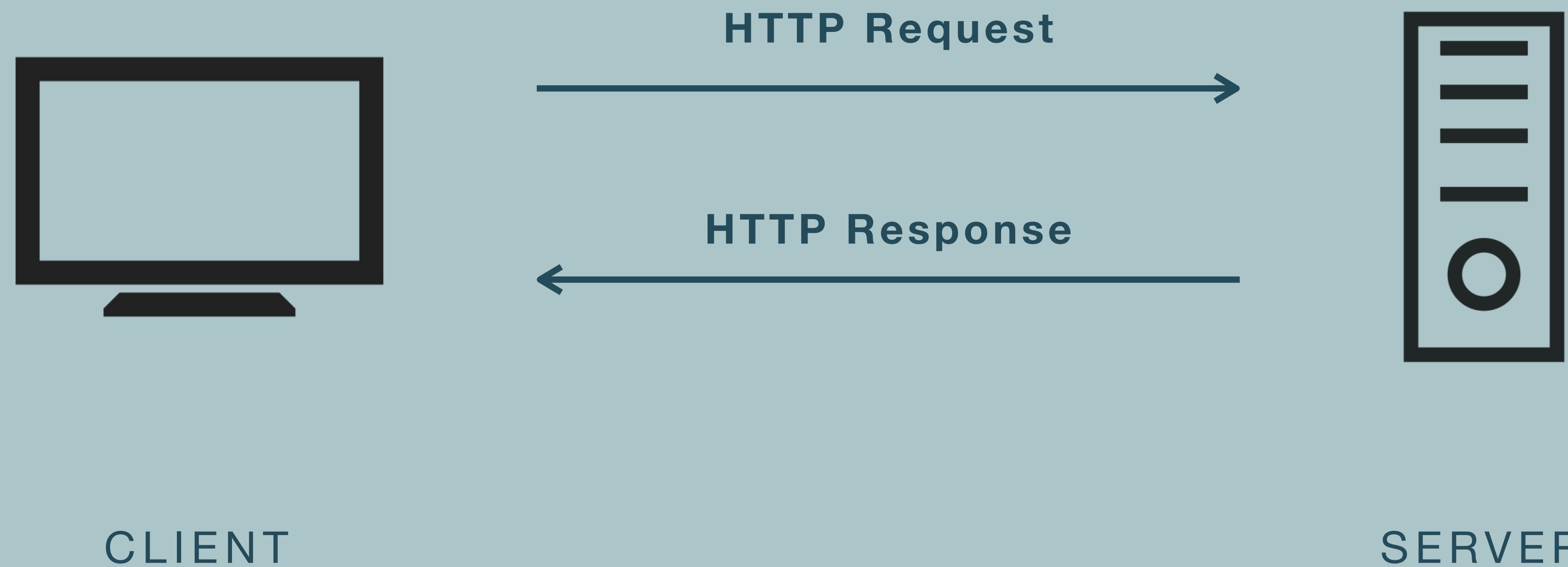
A way to get and post data
from and to data sources.

getCharacters fetches a list of characters
from a JSON data source, parses the JSON
to JS and returns the data.

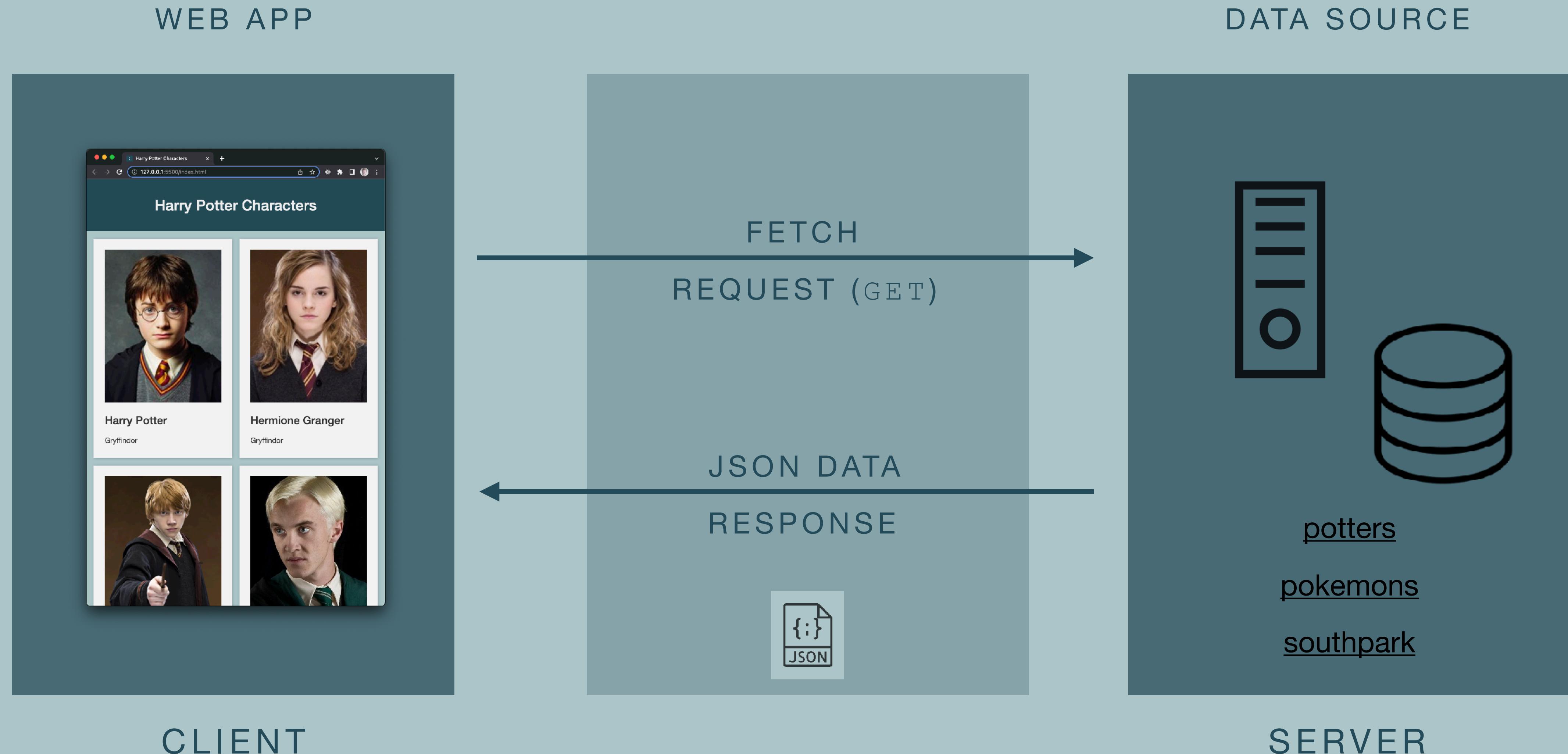
```
async function getCharacters() {  
  const response = await fetch(url);  
  const data = await response.json();  
  console.log(data);  
  return data;  
}
```

Client-Server Model

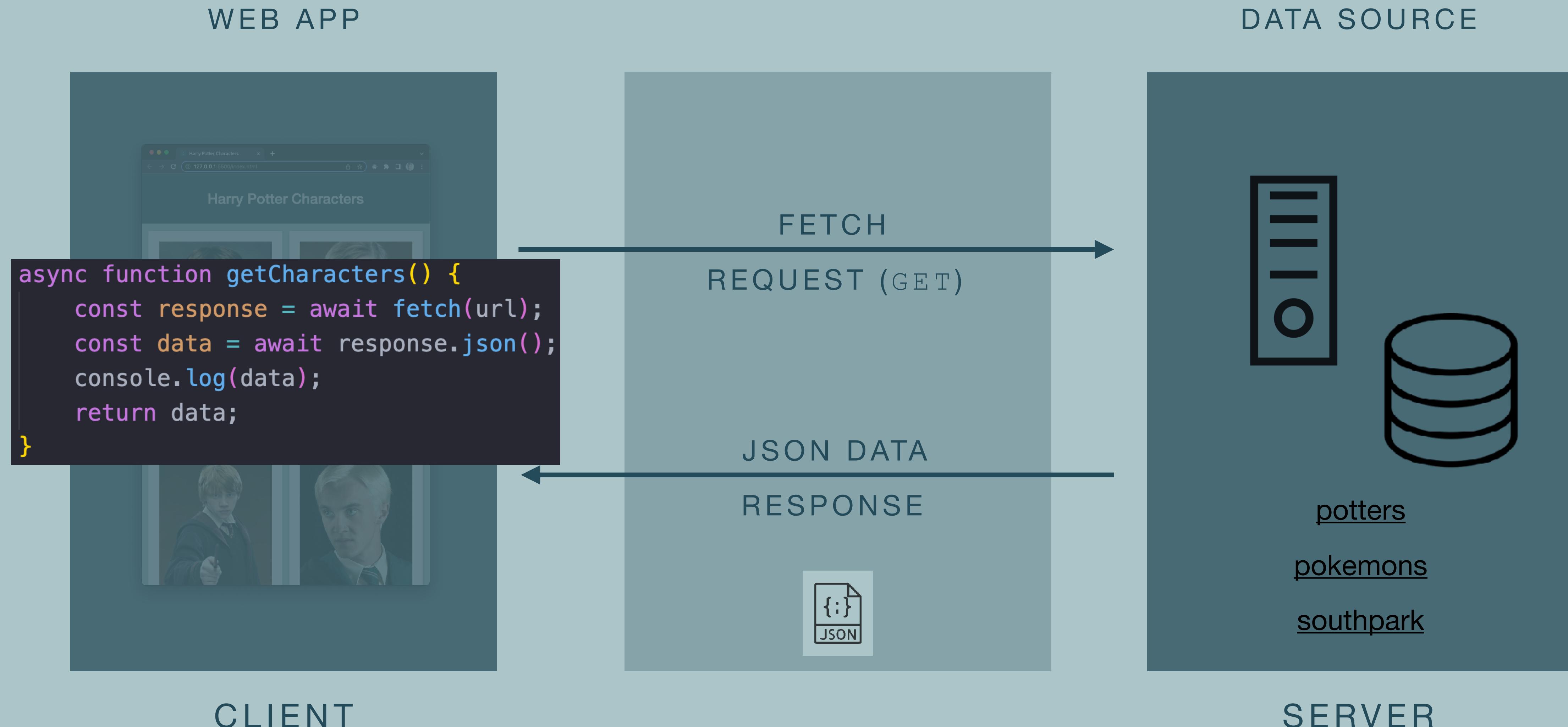
Communication between web **clients** and web **servers**.



Fetch, HTTP Request & Response



Fetch, HTTP Request & Response

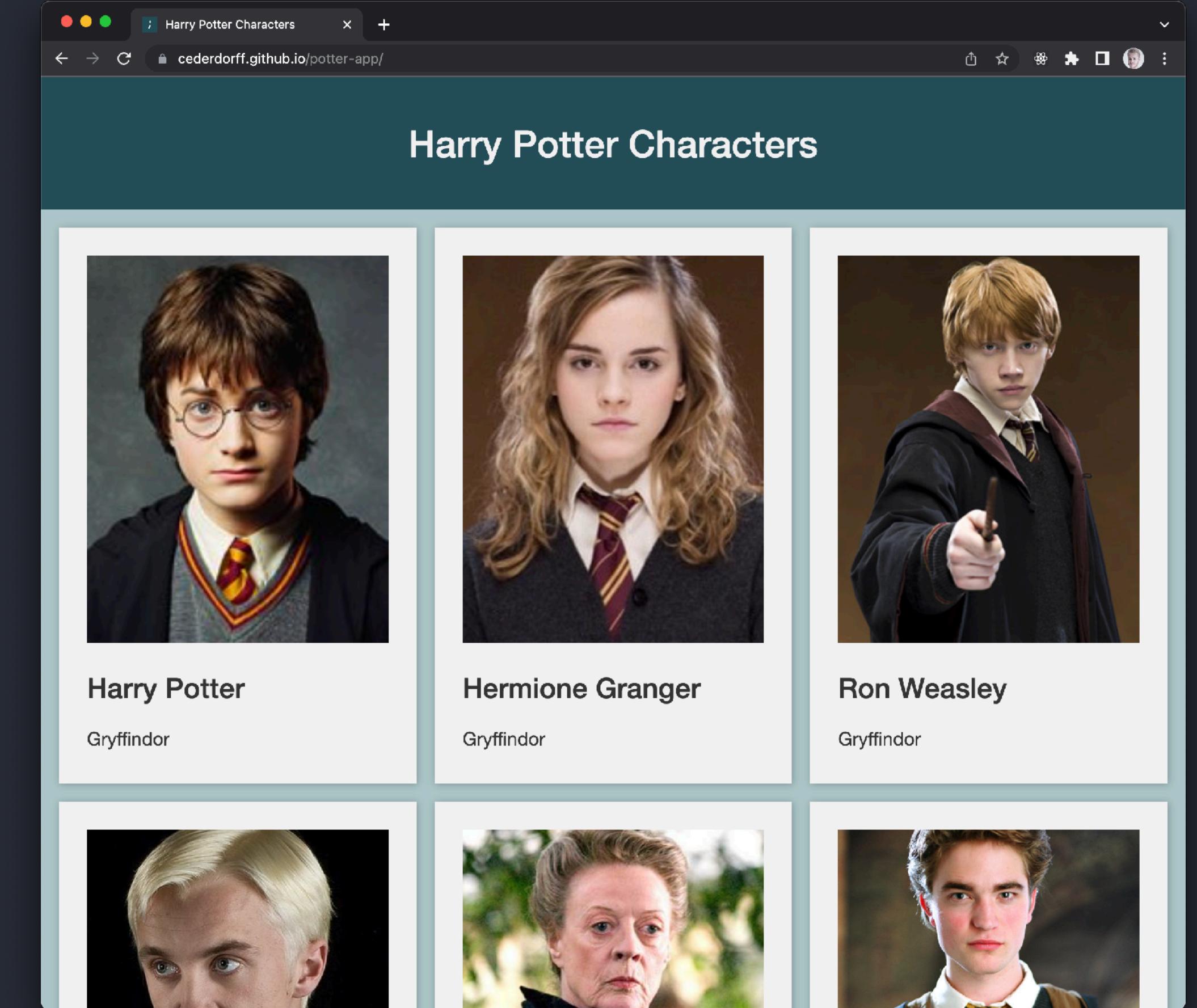


fetch(...)

Og Potter App

Løsning

Kode



fetch(...) og “call stack”

1) initApp kaldes på load.

2) initApp kalder getCharacters og gemmer hvad der returneres i const'en characters. initApp er async, da den venter på getCharacters' returneret data fra et fetch-kald.

3) getCharacters er en async funktion, da der anvendes await inde i funktionen. Funktionen fetcher data fra en given url. Data parses fra JSON til JavaScript-array, der gemmes i data-variablen. data returneres, så det kan læses hvor funktionen kaldes.

4) initApp kalder nu showCharacters med characters som argument (parameter). characters holder den data, som returneres fra getCharacters i 3).

5) showCharacters har characterList som parameter. characterList holder den data som blev sendt med fra initApp, dvs at det er samme data som lå i characters i initApp og tidligere i data i getCharacters.

showCharacters loop'er igennem characterList. For hver character (objekt) i characterList (array) kaldes showCharacter.

6) showCharacter tager en character (et objekt) som parameter og genererer HTML med værdier fra character-objektets properties. HTML'en tilføjes med insertAdjacentHTML.

```
JS app.js    x JS app.js > ...
4
5 window.addEventListener("load", initApp); 1)
6
7 async function initApp() {
8     const characters = await getCharacters(); 2)
9     showCharacters(characters); 4)
10 }
11
12 // ===== READ ===== //
13 // Read (GET) characters from json file located on GitHub
14 async function getCharacters() {
15     const response = await fetch("https://raw.githubusercontent.com/cederdorff/characters.json");
16     const data = await response.json(); 3)
17     console.log(data);
18     return data;
19 }
20
21 // Create HTML and display all users from given list
22 function showCharacters(characterList) {
23     //loop through all users and create an article with content for each
24     for (const character of characterList) {
25         showCharacter(character); 5)
26     }
27 }
28
29 function showCharacter(character) {
30     document.querySelector("#characters").insertAdjacentHTML( 6)
31         "beforeend",
32         /*html*/
33         <article class="grid-item">
34             
35             <h2>${character.name}</h2>
36             <p>${character.house}</p>
37         </article>
Ln 1, Col 14  Spaces: 4  UTF-8  LF  {}  JavaScript  ⚡ Port : 5500  ✓ Prettier  ⌂  ⌂
```

fetch(...) og “call stack”

7) showCharacter tilføjer click-event til senest tilføjede article. Derfor article:last-child. Dette matcher med, at der i 6) anvendes “beforeend” som position til at indsætte.

8) Click-eventet er characterClicked, der er en nested function i showCharacter. Det er en nested function, da vi har brug for at kunne læse character og sende det med som argument (parameter) til showCharacterModal. På denne måde svarer character altid til den karakter, der bliver klikket på.

9) showCharacterModal tager character som parameter. character er netop den, vi klikker på. showCharacterModal bruger værdierne i character-objektet til at foretage DOM-manipulationen og opdatere de eksisterende HTML-elementer.

10) I showCharacterModal kaldes generateDescription, der er en hjælpefunktion.

11) generateDescription genererer en beskrivelse på baggrund af character objektets properties hogwartsStaff, hogwartsStudent, alive og name. Beskrivelsen returneres tilbage til showCharacterModal og vises.

12) Når alle informationer i dialog er sat med DOM-manipulation og .textContent, vises dialog'en med metoden .showModal().

```
app.js — potter-app
JS app.js x
JS app.js > ...
29  function showCharacter(character) {
30      document.querySelector("#characters").insertAdjacentHTML(
31          "beforeend",
32          /*html*/
33          <article class="grid-item">
34              
35              <h2>${character.name}</h2>
36              <p>${character.house}</p>
37          </article>
38      );
39  }
40
41  document.querySelector("#characters article:last-child").addEventListener("click", characterClicked);
42
43  function characterClicked() {
44      showCharacterModal(character);
45  }
46
47
48  function showCharacterModal(character) { 9)
49      console.log(character);
50      document.querySelector("#dialog-image").src = character.image;
51      document.querySelector("#dialog-title").textContent = character.name;
52      document.querySelector("#dialog-house").textContent = character.house;
53
54      // description
55      let description = generateDescription(character); 10)
56      document.querySelector("#dialog-character-description").textContent = description;
57
58      document.querySelector("#dialog-gender").textContent = character.gender;
59      document.querySelector("#dialog-birth-date").textContent = character.dateOfBirth;
60      document.querySelector("#dialog-eye-color").textContent = character.eyeColour;
61      document.querySelector("#dialog-hair-color").textContent = character.hairColour;
62      document.querySelector("#dialog-ancestry").textContent = character.ancestry;
63      document.querySelector("#dialog-species").textContent = character.species;
64
65      document.querySelector("#dialog-name").textContent = character.name;
66      document.querySelector("#dialog-actor-name").textContent = character.actor;
67
68      // show dialog
69      document.querySelector("#dialog-character").showModal(); 12
70  }
71
72  function generateDescription(character) { 11)
73      let description = "";
74      if (character.hogwartsStaff && character.alive) {
75          description = `${character.name} is employed at Hogwarts.`;
76      } else if (character.hogwartsStaff && !character.alive) {
77          description = `${character.name} was employed at Hogwarts but is no longer alive.`;
78      } else if (character.hogwartsStudent && character.alive) {
79          description = `${character.name} is a student at Hogwarts.`;
80      } else if (character.hogwartsStudent && !character.alive) {
81          description = `${character.name} was a student at Hogwarts but is no longer alive.`;
82      }
83  }
84
85  
```

Line 1, Col 14 Spaces: 4 UTF-8 LF {} JavaScript Port: 5500 ✓ Prettier

JSON

... a syntax for storing and exchanging data over the web

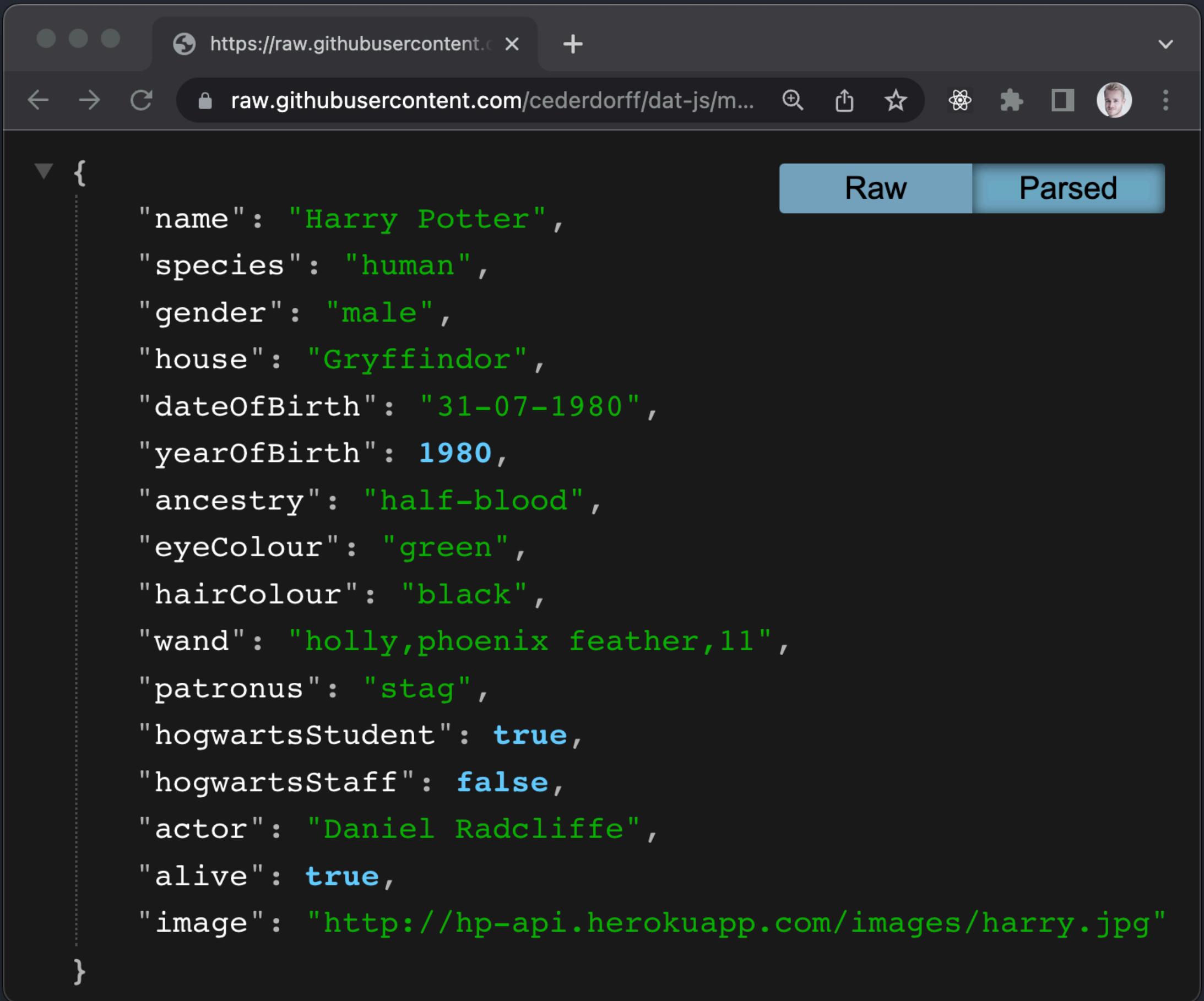
```
{  
  "name": "Alicia",  
  "age": 6  
}
```

JSON OBJECT

```
[{  
  "name": "Alicia",  
  "age": 6  
, {  
  "name": "Peter",  
  "age": 22  
}]
```

LIST OF JSON OBJECTS

JSON



A screenshot of a web browser window displaying a single JSON object. The URL is <https://raw.githubusercontent.com/cederdorff/dat-js/master/data/harry.json>. The JSON object represents Harry Potter's character details. The 'Raw' tab is selected, showing the raw JSON code, while the 'Parsed' tab shows the same data as a hierarchical tree structure.

```
{  
  "name": "Harry Potter",  
  "species": "human",  
  "gender": "male",  
  "house": "Gryffindor",  
  "dateOfBirth": "31-07-1980",  
  "yearOfBirth": 1980,  
  "ancestry": "half-blood",  
  "eyeColour": "green",  
  "hairColour": "black",  
  "wand": "holly,phoenix feather,11",  
  "patronus": "stag",  
  "hogwartsStudent": true,  
  "hogwartsStaff": false,  
  "actor": "Daniel Radcliffe",  
  "alive": true,  
  "image": "http://hp-api.herokuapp.com/images/harry.jpg"  
}
```

JSON OBJECT



A screenshot of a web browser window displaying a list of three JSON objects. The URL is <https://raw.githubusercontent.com/cederdorff/dat-js/master/data/characters.json>. The JSON array contains three objects: Harry Potter, Hermione Granger, and Ron Weasley. The 'Raw' tab is selected, showing the raw JSON code, while the 'Parsed' tab shows the data as a list of three objects.

```
[  
  {  
    "name": "Harry Potter",  
    "species": "human",  
    "gender": "male",  

```

LIST OF JSON OBJECTS



<https://www.instagram.com/p/CVqbCzgsZUF/>

JSON

The diagram illustrates the relationship between a piece of JavaScript code and its corresponding JSON data. On the left, a screenshot of a code editor shows a file named `app.js` with the following code:

```
28
29  function showCharacter(character) {
30      document.querySelector("#characters").insertAdjacentHTML(
31          "beforeend",
32          /*html*/
33          `

34              
35              <h2>${character.name}</h2>
36              <p>${character.house}</p>
37          </article>
38      `;
39  };
40 }


```

On the right, a screenshot of a web browser window displays a JSON object. A red curved arrow points from the `character.image` placeholder in the JavaScript code to the `"image": "http://hp-api.herokuapp.com/images/harry.jpg"` field in the JSON data. Another red curved arrow points from the `character.name` placeholder to the `"name": "Harry Potter"` field. The JSON data is as follows:

```
[{"name": "Harry Potter", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "31-07-1980", "yearOfBirth": 1980, "ancestry": "half-blood", "eyeColour": "green", "hairColour": "black", "wand": "holly,phoenix feather,11", "patronus": "stag", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Daniel Radcliffe", "alive": true, "image": "http://hp-api.herokuapp.com/images/harry.jpg"}, {"name": "Hermione Granger", "species": "human", "gender": "female", "house": "Gryffindor", "dateOfBirth": "19-09-1979", "yearOfBirth": 1979, "ancestry": "muggleborn", "eyeColour": "brown", "hairColour": "brown", "wand": "vine,dragon heartstring", "patronus": "otter", "hogwartsStudent": true}]
```

Review JSON-objekt

Det er vigtigt at vores properties matcher med det forventede! Det skal matche med den datamodel vi er blevet enige om: <https://cederdorff.github.io/dat-js/05-data/>

- Kontroller:

 - Values - er der værdier i properties? Se hvilke [her](#).
 - Navngivning af properties - ja også store og små bogstaver  Se navngivning [her](#).
 - Er det den rigtige datatype? Brug dem vi er blevet enige om - se [her](#). Det må fx ikke være et array, hvis vi er blevet enige om en kommasepareret tekststreng.
 - Dobbeltjek properties og values matcher med: <https://cederdorff.github.io/dat-js/05-data/>
 - Din billed url. Er det et billede? Kontroller i browser. Du skal højeklikke på billede og vælge “Copy Image Address” eller “Copy Image Link” - ikke bare “Copy Link”.
 - Valider din JSON. Se mere [her](#): [Validering af JSON](#)
 - Foretag tilpasninger af dit JSON-objekt (fra sidste uge), ikke noget med et array. Commit og push, så vi kan få de tilrettede objekter med.

Raw Parsed

```
[{"name": "Harry Potter", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "31-07-1980", "yearOfBirth": 1980, "ancestry": "half-blood", "eyeColour": "green", "hairColour": "black", "wand": "holly,phoenix feather,11", "patronus": "stag", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Daniel Radcliffe", "alive": true, "image": "http://hp-api.herokuapp.com/images/harry.jpg"}, {"name": "Hermione Granger", "species": "human", "gender": "female", "house": "Gryffindor", "dateOfBirth": "19-09-1979", "yearOfBirth": 1979, "ancestry": "muggleborn", "eyeColour": "brown", "hairColour": "brown", "wand": "vine,dragon heartstring", "patronus": "otter", "hogwartsStudent": true, "hogwartsStaff": false}], [{"name": "Ronald Weasley", "species": "human", "gender": "male", "house": "Gryffindor", "dateOfBirth": "11-07-1980", "yearOfBirth": 1980, "ancestry": "pureblood", "eyeColour": "blue", "hairColour": "red", "wand": "willow,dragon heartstring,11", "patronus": "ewe", "hogwartsStudent": true, "hogwartsStaff": false, "actor": "Rupert Grint"}]
```

Loops

Iterate over arrays or other iterable objects.

Ex loop through an array of objects.

```
// .forEach
characterList.forEach(showCharacter);

// for of loop
for (const character of characterList) {
    showCharacter(character);
}

// for loop
for (let index = 0; index < characterList.length; index++) {
    const character = characterList[index];
    showCharacter(character);
}
```

.forEach

an array method

```
const names = ["Peter", "Oskar", "Lenka", "Rasmus"];
names.forEach(showName);

function showName(name) {
  console.log(name);
}
```

You can use it on an array to do *something* for each element in the array.

forEach will call a function for each element in an array.

For of Loop

```
const names = ["Peter", "Lenka", "Oskar", "Rasmus"];
for (const name of names) {
  console.log(name);
}
```

You can use it to loop over an array to do *something* for every element.

for of loops through the values of an iterable object (an array is an iterable object).

For of loop

Iterates over arrays or other iterable objects

<https://scrimba.com/learn/introductiontojavascript/for-loops-cMMM8U9>

<https://scrimba.com/learn/introductiontojavascript/challenge-for-loops-cPkpJrcv>

For Loop

```
const names = ["Peter", "Lenka", "Oskar", "Rasmus"];

for (let index = 0; index < names.length; index++) {
  const name = names[index];
  console.log(name);
}
```

You can use it to loop over an array.

A for loop repeats until a specified condition is false.

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Loops_and_iteration#for_statement

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/for>

https://www.w3schools.com/js/js_loop_for.asp

Loops

Even more options 🎉

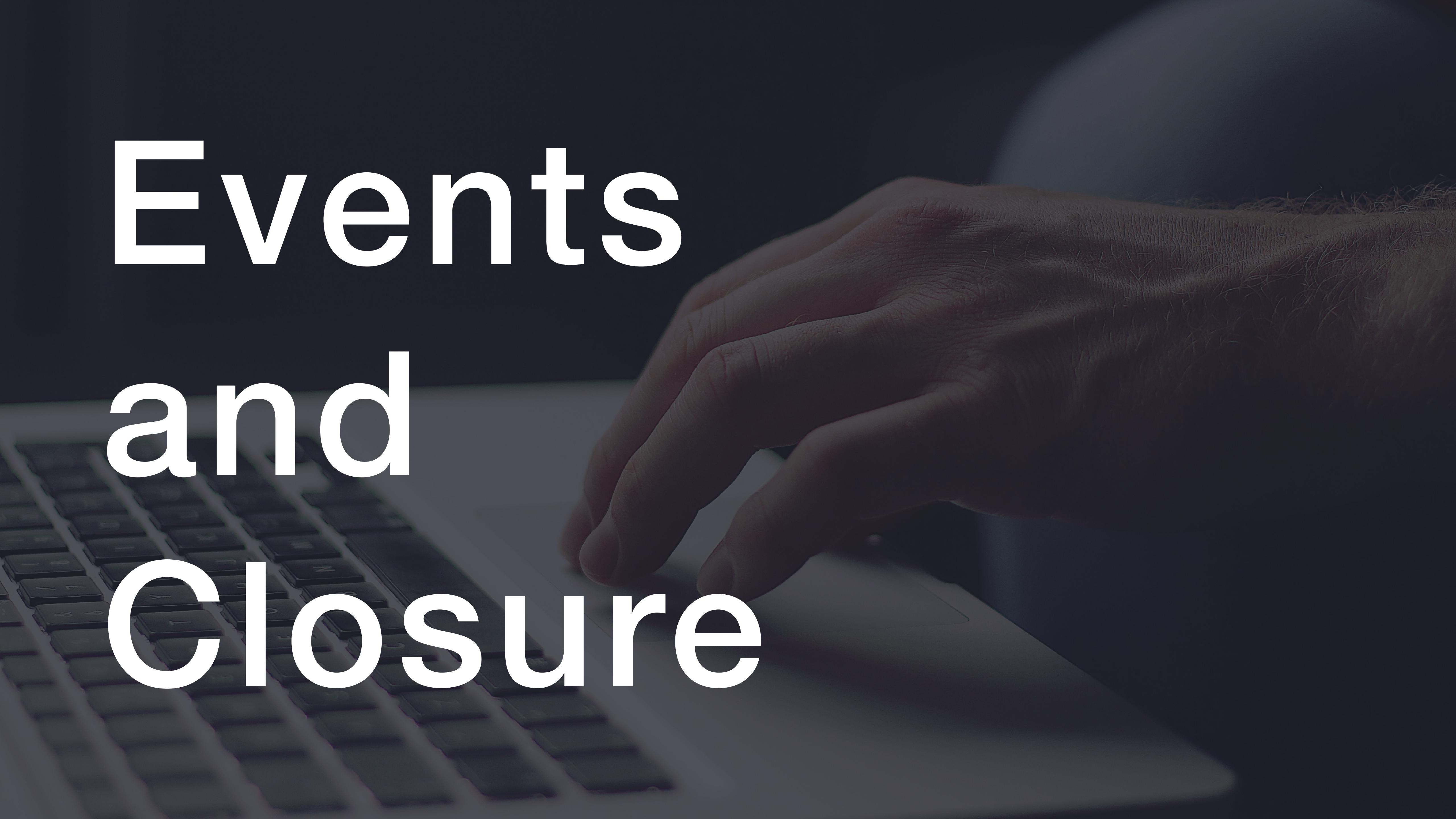
But use `forEach` or
`for of` for now.



JavaScript supports different kinds of loops:

- `for` - loops through a block of code a number of times
- `for/in` - loops through the properties of an object
- `for/of` - loops through the values of an iterable object
- `while` - loops through a block of code while a specified condition is true
- `do/while` - also loops through a block of code while a specified condition is true

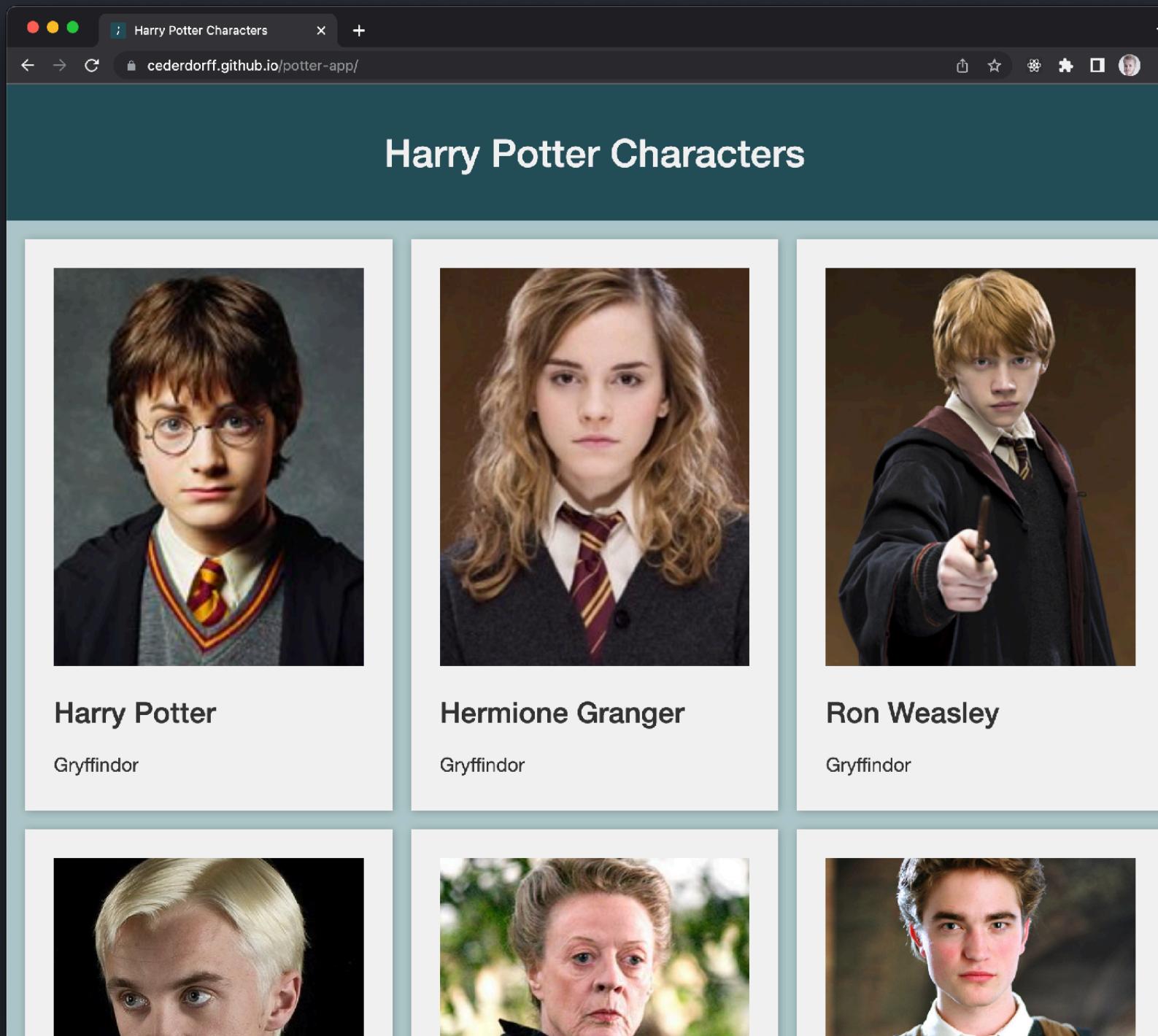
https://www.w3schools.com/js/js_loop_for.asp



Events
and
closure

EventListener

The eventListener attaches an event handler to the specified element

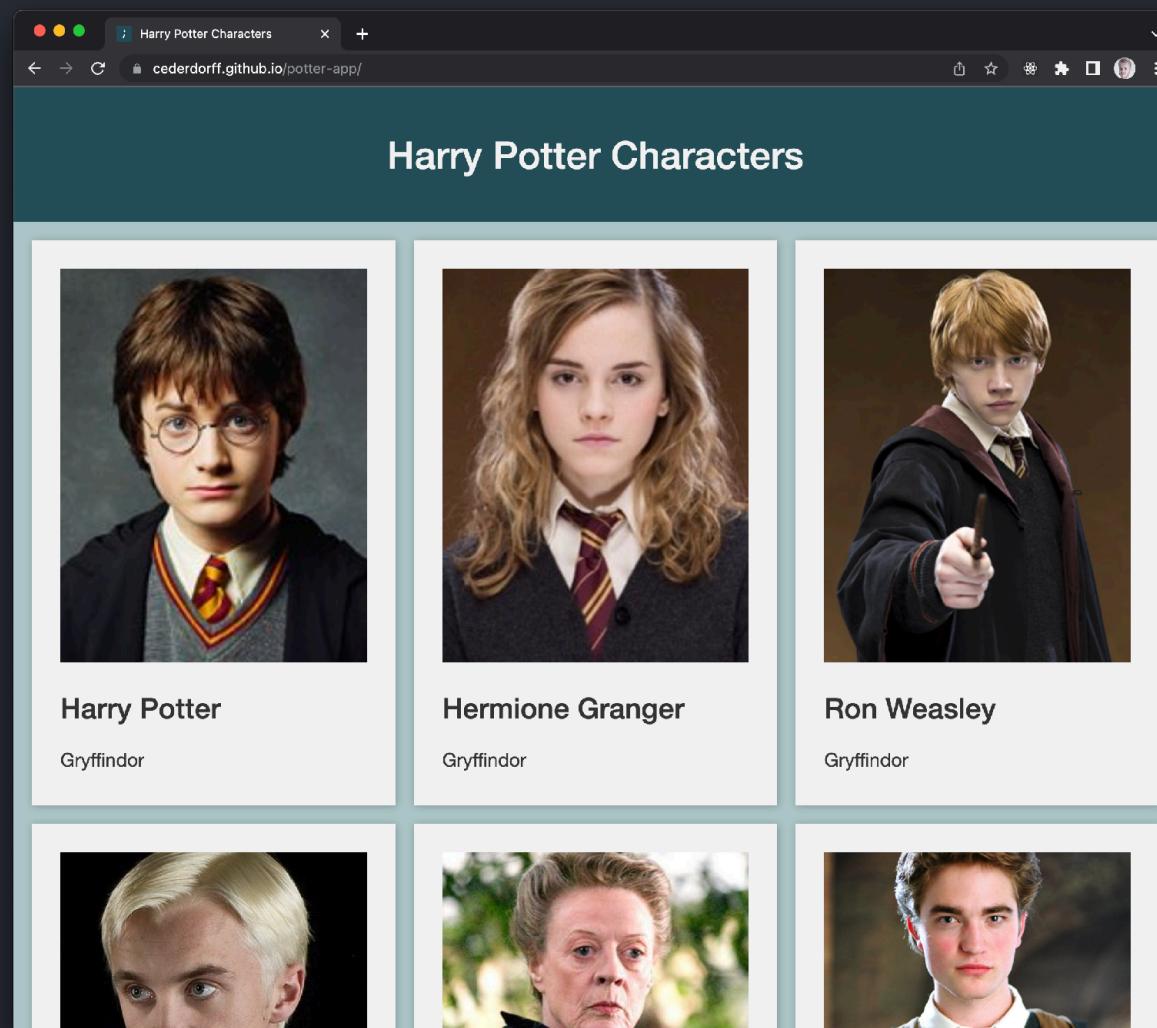


```
document.querySelector("#characters article:last-child")
    .addEventListener("click", characterClicked);
```

```
function characterClicked() {
    // do something
}
```

EventListener

Vi tilføjer event for hver article som vi indsætter i DOM'en



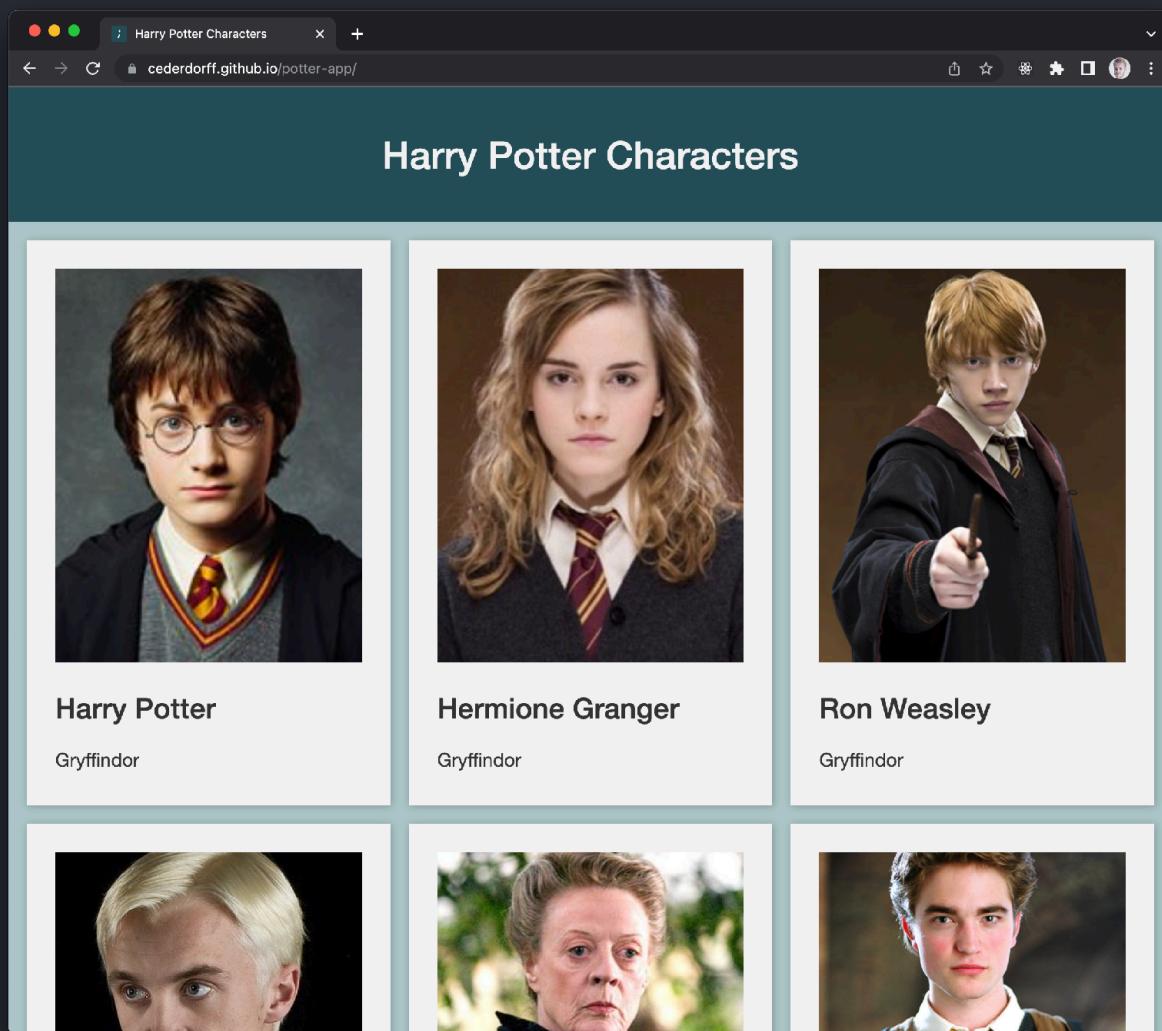
```
function showCharacter(character) {  
    document.querySelector("#characters").insertAdjacentHTML(  
        "beforeend",  
        /*html*/ `'  
            <article class="grid-item">  
                  
                <h2>${character.name}</h2>  
                <p>${character.house}</p>  
            </article>  
        );  
  
    document.querySelector("#characters article:last-child").addEventListener("click", characterClicked);  
}
```

https://www.w3schools.com/js/js_htmldom_events.asp

https://www.w3schools.com/js/js_htmldom_eventlistener.asp

Nested functions & closure

Men vi skal kende character, for at kunne vise
lige præcis den character vi klikker på.



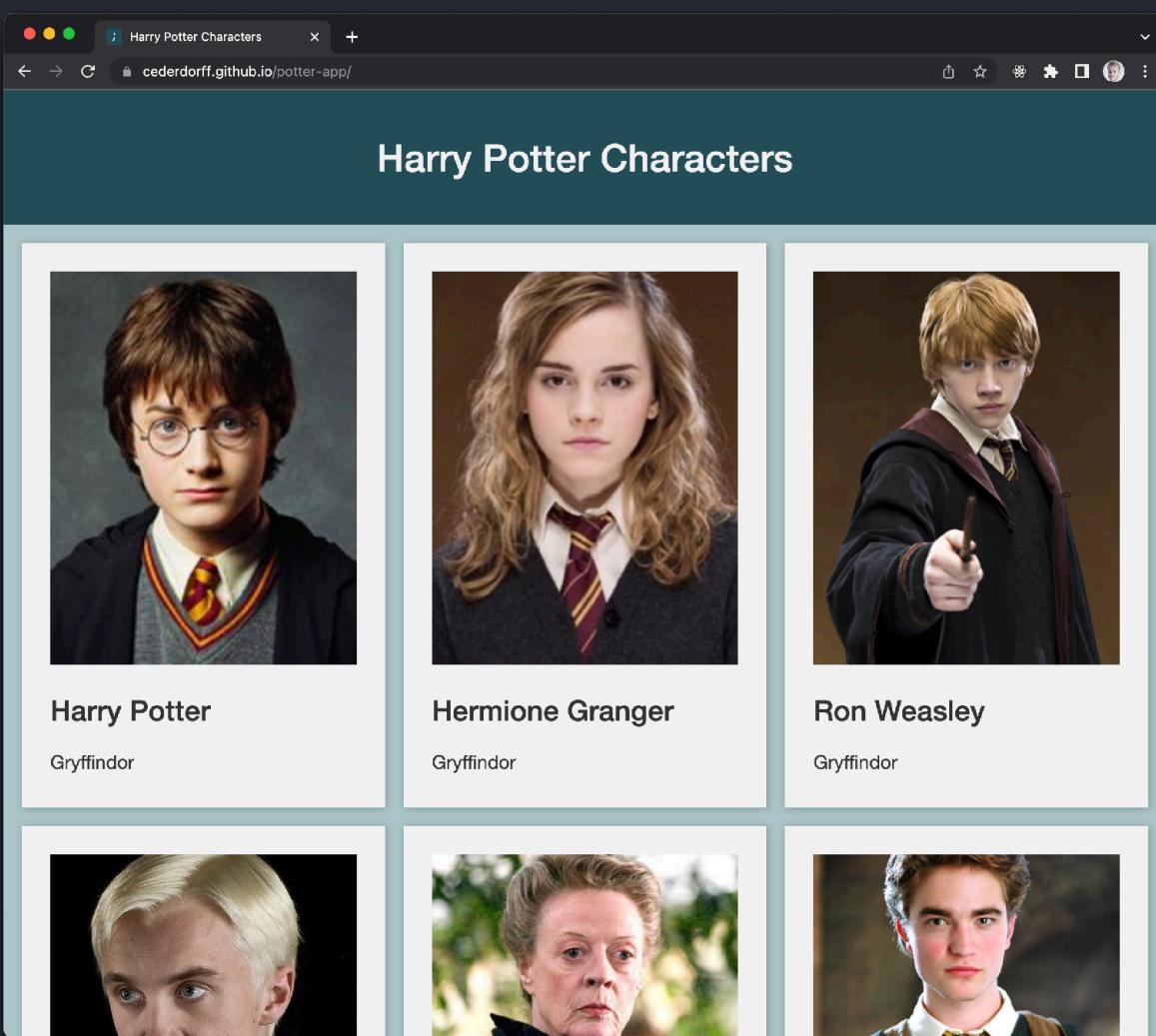
```
function showCharacter(character) {
  document.querySelector("#characters").insertAdjacentHTML(
    "beforeend",
    /*html*/
    `<article class="grid-item">
      
      <h2>${character.name}</h2>
      <p>${character.house}</p>
    </article>
  );
}

document.querySelector("#characters article:last-child").addEventListener("click", characterClicked);

function characterClicked() {
  showCharacterModal(character);
}
```

Nested functions & closure

Derfor har vi en funktion i en funktion. Så vil characterClicked (nested function) have adgang til showCharacter's scope, og der ved kan vi læse character



```
function showCharacter(character) {
  document.querySelector("#characters").insertAdjacentHTML(
    "beforeend",
    /*html*/
    <article class="grid-item">
      
      <h2>${character.name}</h2>
      <p>${character.house}</p>
    </article>
  );
}

document.querySelector("#characters article:last-child").addEventListener("click", characterClicked);

function characterClicked() {
  showCharacterModal(character);
}

}
```

Nested function

A function inside a function.

All functions have access to the global scope.

Nested functions have access to the scope "above" them.

Closure

A closure is a function that have access to the parent scope - also after the parent function has closed / has been executed.

```
function showCharacter(character) {  
    document.querySelector("#characters").insertAdjacentHTML(  
        "beforeend",  
        /*html*/ `'  
            <article class="grid-item">  
                  
                <h2>${character.name}</h2>  
                <p>${character.house}</p>  
            </article>  
        );  
  
    document.querySelector("#characters article:last-child").addE  
};  
  
function characterClicked() {  
    showCharacterModal(character);  
}  
}
```

DOM Manipulation

“

When you use JavaScript to
add, remove, and modify
elements of a website

”

- document.querySelector(selector)
- document.querySelectorAll(name)
- document.createElement(name)
- parentNode.appendChild(node)
- element.append(node, node, ...)
- element.insertAdjacentHTML(position, html)
- element.innerHTML
- element.textContent
- element.style.xxx
- element.setAttribute()
- element.getAttribute()
- element.addEventListener()
- element.classList
- window.content
- Window.onload
- window.scrollTo()

Methods for DOM Manipulation

Common Methods

Vi har anvendt to metoder

```
// .createElement and .appendChild  
const title = document.createElement("h1");  
title.textContent = "Hi!";  
document.querySelector("body").appendChild(title);  
  
// backticks and .insertAdjacentHTML  
const html = /*html*/ `<h1>Hi, again!</h1>`;  
document.querySelector("body").insertAdjacentHTML("beforeend", html);
```

```
// .textContent - you must have a h1 element in your html  
document.querySelector("h1").textContent = "Hi, again, again!";
```

1. Byg ny HTML og tilføj til DOM/ eksisterende HTML-element.
2. Ændr indhold på eksisterende HTML-elementer.

DOM Manipulation

```
let fullName = "Peter Lind";
console.log(fullName);
document.querySelector("#fullName_container").textContent = fullName;
```

.textContent

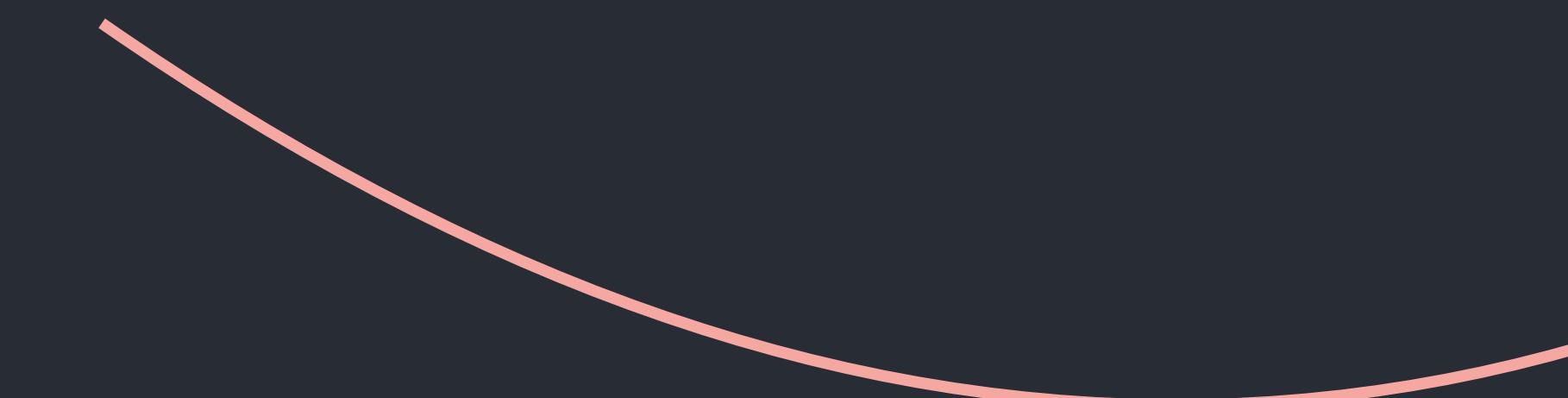
Get or set the text content of a given (HTML) element

.textContent

Get or set the text content of a given (HTML) element. The element **must** be in the DOM.

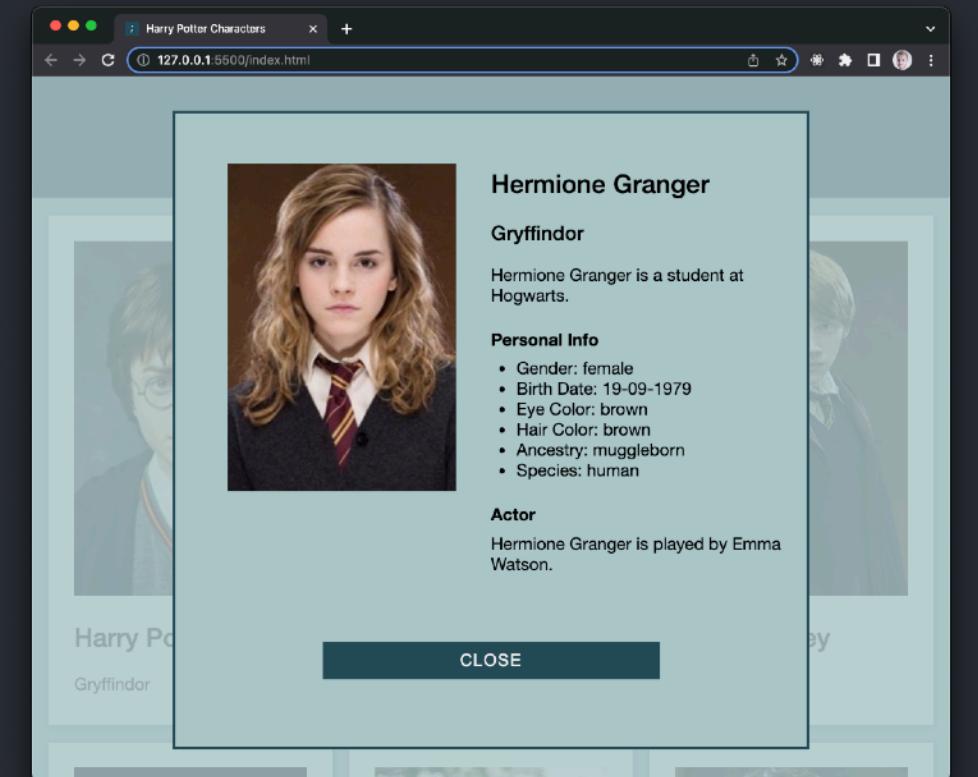
```
let fullName = "Peter Lind";
console.log(fullName);
document.querySelector("#fullName_container").textContent = fullName;
```

```
<body>
  <header>
    <h1 id="fullName_container"></h1>
  </header>
  <script src="app.js"></script>
</body>
```



.textContent

Get or set the text content of a given (HTML) element. The element **must** be in the DOM.



The diagram illustrates the data flow between two files: `app.js` and `index.html`.

app.js:

```
function showCharacterModal(character) {
    console.log(character);
    document.querySelector("#dialog-image").src = character.image;
    document.querySelector("#dialog-title").textContent = character.name;
    document.querySelector("#dialog-house").textContent = character.house;

    // description
    let description = generateDescription(character);
    document.querySelector("#dialog-character-description").textContent = description;

    document.querySelector("#dialog-gender").textContent = character.gender;
    document.querySelector("#dialog-birth-date").textContent = character.dateOfBirth;
    document.querySelector("#dialog-eye-color").textContent = character.eyeColour;
    document.querySelector("#dialog-hair-color").textContent = character.hairColour;
    document.querySelector("#dialog-ancestry").textContent = character.ancestry;
    document.querySelector("#dialog-species").textContent = character.species;

    document.querySelector("#dialog-name").textContent = character.name;
    document.querySelector("#dialog-actor-name").textContent = character.actor;

    // show dialog
    document.querySelector("#dialog-character").showModal();
}
```

index.html:

```
<dialog id="dialog-character">
    <section class="dialog-grid">
        <figure></h2>
            <h3 id="dialog-house"></h3>
            <p id="dialog-character-description"></p>
            <section>
                <h4>Personal Info</h4>
                <ul>
                    <li>Gender: <span id="dialog-gender"></span></li>
                    <li>Birth Date: <span id="dialog-birth-date"></span></li>
                    <li>Eye Color: <span id="dialog-eye-color"></span></li>
                    <li>Hair Color: <span id="dialog-hair-color"></span></li>
                    <li>Ancestry: <span id="dialog-ancestry"></span></li>
                    <li>Species: <span id="dialog-species"></span></li>
                </ul>
            </section>
            <section>
                <h4>Actor</h4>
                <p><span id="dialog-name">Character</span> is played by <span id=
                <span id="dialog-name"></span></p>
            </section>
        </article>
    </section>
</dialog>
```

Annotations with arrows highlight the data flow:

- Arrows point from `character.image` in `app.js` to the `src` attribute of the `img` element in `index.html`.
- Arrows point from `character.name` in `app.js` to the `id="dialog-title"` element in `index.html`.
- Arrows point from `character.house` in `app.js` to the `id="dialog-house"` element in `index.html`.
- Arrows point from `description` in `app.js` to the `id="dialog-character-description"` element in `index.html`.
- Arrows point from each of the properties (`gender`, `dateOfBirth`, `eyeColour`, `hairColour`, `ancestry`, `species`) in `app.js` to their corresponding `span` elements with matching IDs in `index.html`.
- Arrows point from `character.name` in `app.js` to the `id="dialog-name"` element in `index.html`.
- Arrows point from `character.actor` in `app.js` to the `id="dialog-actor-name"` element in `index.html`.
- An arrow points from the final annotation in `index.html` back to the `name` property in `app.js`.

document.createElement()

```
// create a new h1 element
const newTitle = document.createElement("h1");

// and give it some content
newTitle.textContent = "Hi there and greetings!";

// add the newly created element into the DOM
document.querySelector("body").appendChild(newTitle);
```

.createElement

Creates an HTML element specified by tagName.

.appendChild

Appends an element as last child of an element.

insertAdjacentHTML(position, html)

```
// 1

// create a new h1 with content using a backtick
const newTitle = /*html*/ `<h1>Hi there and greetings!</h1>`;

// add the newly created element into the DOM
document.querySelector("body").insertAdjacentHTML("beforeend", newTitle);

// 2

// variable holding username
const username = "RACE";

// create a new p with content using a backtick and username variable
const newParagraph = /*html*/ `<p>Welcome, ${username}!</p>`;

// add the newly created element into the DOM
document.querySelector("body").insertAdjacentHTML("beforeend", newParagraph);
```

Backtick string

Create multiline strings (templates) with embedded expressions and tags.

.insertAdjacentHTML

Inserts HTML into a specified position.

showCharacter(character)

```
function showCharacter(character) {  
    document.querySelector("#characters").insertAdjacentHTML(  
        "beforeend",  
        /*html*/ `   
            <article class="grid-item">  
                  
                <h2>${character.name}</h2>  
                <p>${character.house}</p>  
            </article>  
        ` );  
}
```

Backtick string

Create multiline strings (templates) with embedded expressions and tags.

.insertAdjacentHTML

Inserts HTML into a specified position.

Hvorfor ikke .innerHTML?

```
function showCharacter(character) {  
  document.querySelector("#characters").innerHTML = /*html*/`  
    <article class="grid-item">  
        
      <h2>${character.name}</h2>  
      <p>${character.house}</p>  
    </article>  
`;  
}
```

Backtick string

Create multiline strings (templates) with embedded expressions and tags.

.innerHTML

... sets or returns the HTML content (inner HTML) of an element.

“To insert the HTML into the document rather than replace the contents of an element, use the method `insertAdjacentHTML()`.”

.innerHTML & events

```
function showCharacter(character) {  
  document.querySelector("#characters").innerHTML = /*html*/ `   
    <article class="grid-item">  
        
      <h2>${character.name}</h2>  
      <p>${character.house}</p>  
    </article>  
  `;  
  
  document.querySelector("#characters article:last-child").addEventListener("click", characterClicked);  
  
  function characterClicked() {  
    showCharacterModal(character);  
  }  
}
```

Backtick string

Create multiline strings (templates) with embedded expressions and tags.

.innerHTML

“Please note that using innerHTML to append HTML elements [...] will result in the removal of any previously set event listeners. That is, after you append any HTML element that way you won't be able to listen to the previously set event listeners.”

Which one?

```
// backticks and .insertAdjacentHTML
const html = /*html*/ `<h1>Hi, again!</h1>`;
document.querySelector("body").insertAdjacentHTML("beforeend", html);

// .textContent – you must have a h1 element in your html
const title = "Hi, again, again!";
document.querySelector("h1").textContent = title;
```

.insertAdjacentHTML

Inserts HTML into a specified position.

.textContent

Get or set the text content of a given (HTML) element

Which one?

.insertAdjacentHTML

```
function showCharacter(character) {
  document.querySelector("#characters").insertAdjacentHTML(
    "beforeend",
    /*html*/
    `<article class="grid-item">
      
      <h2>${character.name}</h2>
      <p>${character.house}</p>
    </article>
  `;
}
//...
```

.textContent

```
function showCharacterModal(character) {
  console.log(character);
  document.querySelector("#dialog-image").src = character.image;
  document.querySelector("#dialog-title").textContent = character.name;
  document.querySelector("#dialog-house").textContent = character.house;

  // description
  let description = generateDescription(character);
  document.querySelector("#dialog-character-description").textContent = description;

  document.querySelector("#dialog-gender").textContent = character.gender;
  document.querySelector("#dialog-birth-date").textContent = character.dateOfBirth;
  document.querySelector("#dialog-eye-color").textContent = character.eyeColour;
  document.querySelector("#dialog-hair-color").textContent = character.hairColour;
  document.querySelector("#dialog-ancestry").textContent = character.ancestry;
  document.querySelector("#dialog-species").textContent = character.species;

  document.querySelector("#dialog-name").textContent = character.name;
  document.querySelector("#dialog-actor-name").textContent = character.actor;

  // show dialog
  document.querySelector("#dialog-character").showModal();
}
```

Specialisering af output

“

Hmm, det handler vel om at vise
det “rigtige”, og det der giver
bedst mening for brugeren.

”

Hvis du ikke kendte til programmering?

A screenshot of a web browser window titled "Harry Potter Characters". The URL in the address bar is "127.0.0.1:5500/index.html". The main content area displays a character card for Hermione Granger. The card features a portrait of Emma Watson as Hermione Granger. The character's name, "Hermione Granger", is displayed in bold. Below it, her house, "Gryffindor", is shown. A brief description states, "Hermione Granger is a student at Hogwarts." The "Personal Info" section lists the following attributes:

- Gender: female
- Birth Date: 19-09-1979
- Eye Color: brown
- Hair Color: brown
- Ancestry: muggleborn
- Species: human

The "Actor" section notes that Hermione Granger is played by Emma Watson. A "CLOSE" button is located at the bottom of the card.

A screenshot of a web browser window titled "Harry Potter Characters". The URL in the address bar is "127.0.0.1:5500/index.html". The main content area displays a character card for Hermione Granger. The card features a portrait of Emma Watson as Hermione Granger. The character's name, "Hermione Granger", is displayed in bold. Below it, her house, "Gryffindor", is shown. A brief description states, "Hermione Granger is a student at Hogwarts." The "Personal Info" section lists the following attributes:

- Hogwarts Student: true
- Hogwarts Staff: false
- Is alive: true

The "Actor" section notes that Hermione Granger is played by Emma Watson. A "CLOSE" button is located at the bottom of the card.

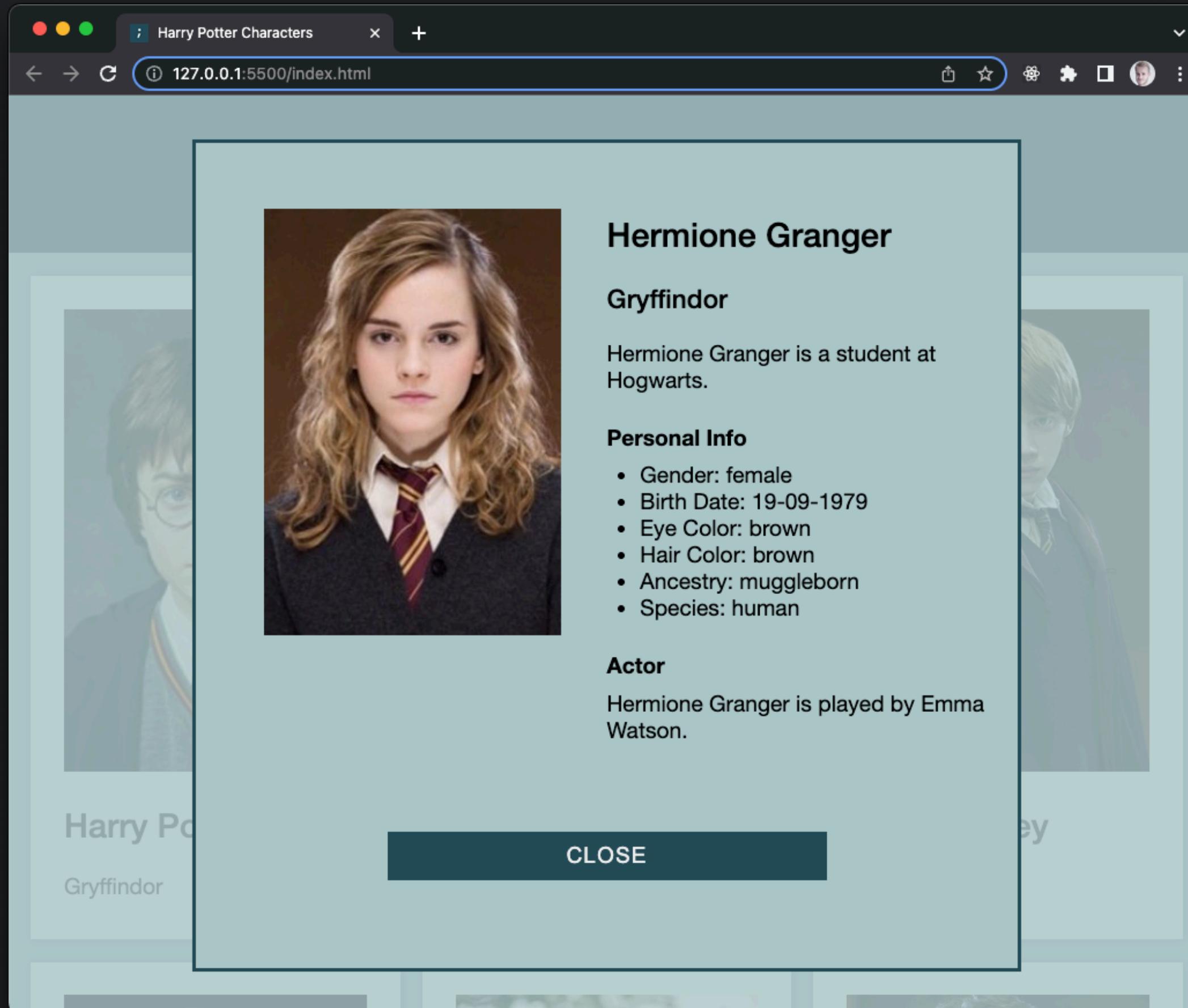
```
function showCharacterModal(character) {  
    console.log(character);  
    //...  
  
    // description  
    let description = generateDescription(character);  
    document.querySelector("#dialog-character-description").textContent = description;  
  
    //...  
  
    // show dialog  
    document.querySelector("#dialog-character").showModal();  
}
```

Returns the right description,
based on conditions

Calls helper function

```
function generateDescription(character) {  
    let description = "";  
  
    if (character.hogwartsStaff && character.alive) {  
        description = `${character.name} is employed at Hogwarts.`;  
    } else if (character.hogwartsStaff && !character.alive) {  
        description = `${character.name} was employed at Hogwarts but is no longer alive.`;  
    } else if (character.hogwartsStudent && character.alive) {  
        description = `${character.name} is a student at Hogwarts.`;  
    } else if (character.hogwartsStudent && !character.alive) {  
        description = `${character.name} was a student at Hogwarts but is no longer alive.`;  
    }  
  
    return description;  
}
```

Forbedringer



- Er der informationer, vi gerne vil vise på en anden måde, illustrere, tilpasse osv?

Specialisering af styling

Hvad nu, hvis du vil differentiere stylingen af dine grid-elementer og/eller dialog?

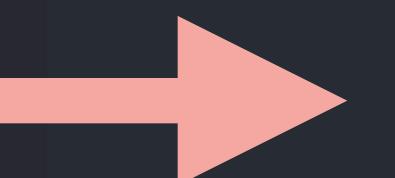
Specialisering af output og styling

The image displays seven screenshots of a Harry Potter-themed application interface, illustrating different levels of data specialization and styling.

- Index Page:** Shows a list of characters with their names and house affiliations. The background color changes by house: Gryffindor (red), Slytherin (green), Hufflepuff (yellow), and Ravenclaw (blue).
- Character Detail Page (Cho Chang):** Shows Cho Chang's profile. It includes her portrait, the Ravenclaw crest, and descriptive text: "a student at Hogwarts", "human | female |", and "type: hawthorn, core: unicorn tail-hair, length: 10\". It also notes her birthday: age: 2023 (approx.).
- Character Detail Page (Minerva McGonagall):** Shows Minerva McGonagall's profile. It includes her portrait, the Gryffindor crest, and descriptive text: "a teacher at Hogwarts", "human | female |", and "type: ash, core: unicorn hair, length: 12.25\". It also notes her birthday: 04-10-1925 age: 97.
- Character Detail Page (Draco Malfoy):** Shows Draco Malfoy's profile. It includes his portrait, the Slytherin crest, and descriptive text: "a student at Hogwarts", "human | male | pure-blood", and "type: hawthorn, core: unicorn tail-hair, length: 10\". It also notes his birthday: 05-06-1980 age: 42.
- Character Detail Page (Cedric Diggory):** Shows Cedric Diggory's profile. It includes his portrait, the Hufflepuff crest, and descriptive text: "a student at Hogwarts", "human | male |", and "type: ash, core: unicorn hair, length: 12.25\". It also notes his birthday: 1977 age: 46 (approx.).
- Character Detail Page (Severus Snape):** Shows Severus Snape's profile. It includes his portrait, the Slytherin crest, and descriptive text: "a student at Hogwarts", "human | male |", and "type: ash, core: unicorn hair, length: 12.25\". It also notes his birthday: 04-10-1925 age: 97.
- Character Detail Page (Neville Longbottom):** Shows Neville Longbottom's profile. It includes his portrait, the Gryffindor crest, and descriptive text: "a student at Hogwarts", "human | male |", and "type: ash, core: unicorn hair, length: 12.25\". It also notes his birthday: 1977 age: 46 (approx.).

class på grid-element

```
function showCharacter(character) {
  document.querySelector("#characters").insertAdjacentHTML(
    "beforeend",
    /*html*/
    <article class="grid-item ${character.house.toLowerCase()}">
      
      <h2>${character.name}</h2>
      <p>${character.house}</p>
    </article>
  );
}
```

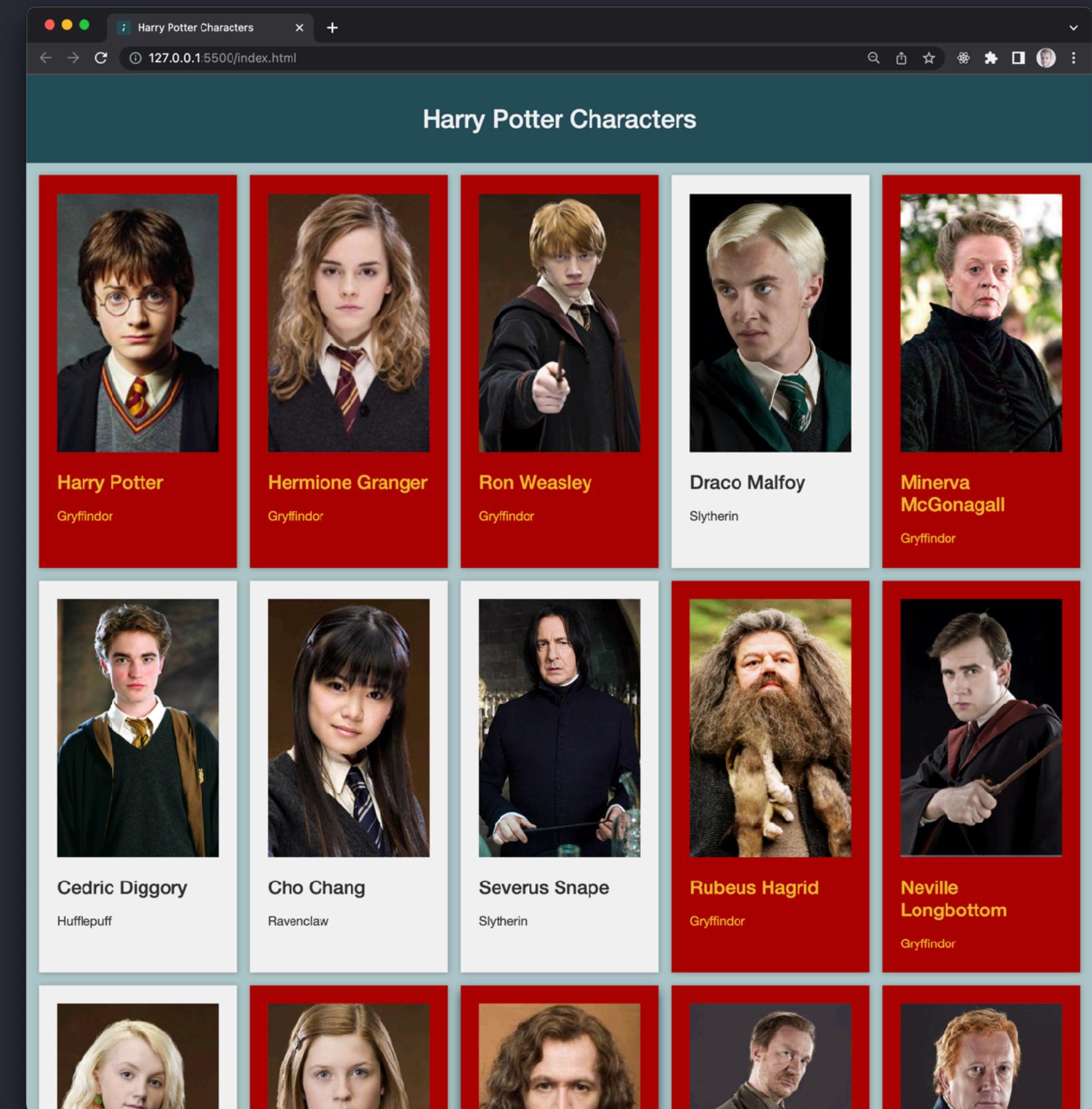
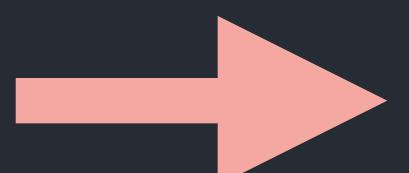


```
<!DOCTYPE html>
<html lang="en">
  ><head> ... </head>
  ><body>
    ><header> ... </header>
    ><main>
      ><section id="characters" class="grid-container" style="grid = $0">
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item slytherin"> ... </article>
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item hufflepuff"> ... </article>
        ><article class="grid-item ravenclaw"> ... </article>
        ><article class="grid-item slytherin"> ... </article>
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item ravenclaw"> ... </article>
        ><article class="grid-item gryffindor"> ... </article>
        ><article class="grid-item slytherin"> ... </article>
        ><article class="grid-item slytherin"> ... </article>
        ><article class="grid-item slytherin"> ... </article>
        ><article class="grid-item "> ... </article>
        ><article class="grid-item slytherin"> ... </article>
        ><article class="grid-item "> ... </article>
```

class på grid-element

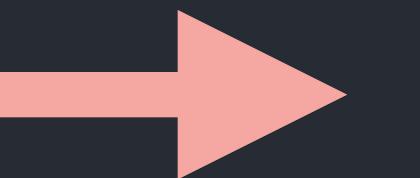
```
.grid-item.gryffindor {  
    background-color: #ae0001;  
    color: #eeba30;  
}
```

```
<!DOCTYPE html>  
<html lang="en">  
  <head>...</head>  
  <body>  
    <header>...</header>  
    <main>  
      <section id="characters" class="grid-container">grid == $0  
        <article class="grid-item gryffindor">...</article>  
        <article class="grid-item gryffindor">...</article>  
        <article class="grid-item gryffindor">...</article>  
        <article class="grid-item slytherin">...</article>  
        <article class="grid-item gryffindor">...</article>  
        <article class="grid-item hufflepuff">...</article>  
        <article class="grid-item ravenclaw">...</article>  
        <article class="grid-item slytherin">...</article>  
        <article class="grid-item gryffindor">...</article>
```



data-theme attribute på dialog

```
function showCharacterModal(character) {  
    // ...  
  
    const dialog = document.querySelector("dialog");  
    // set theme  
    dialog.setAttribute("data-theme", character.house.toLowerCase());  
    // show dialog  
    dialog.showModal();  
}
```

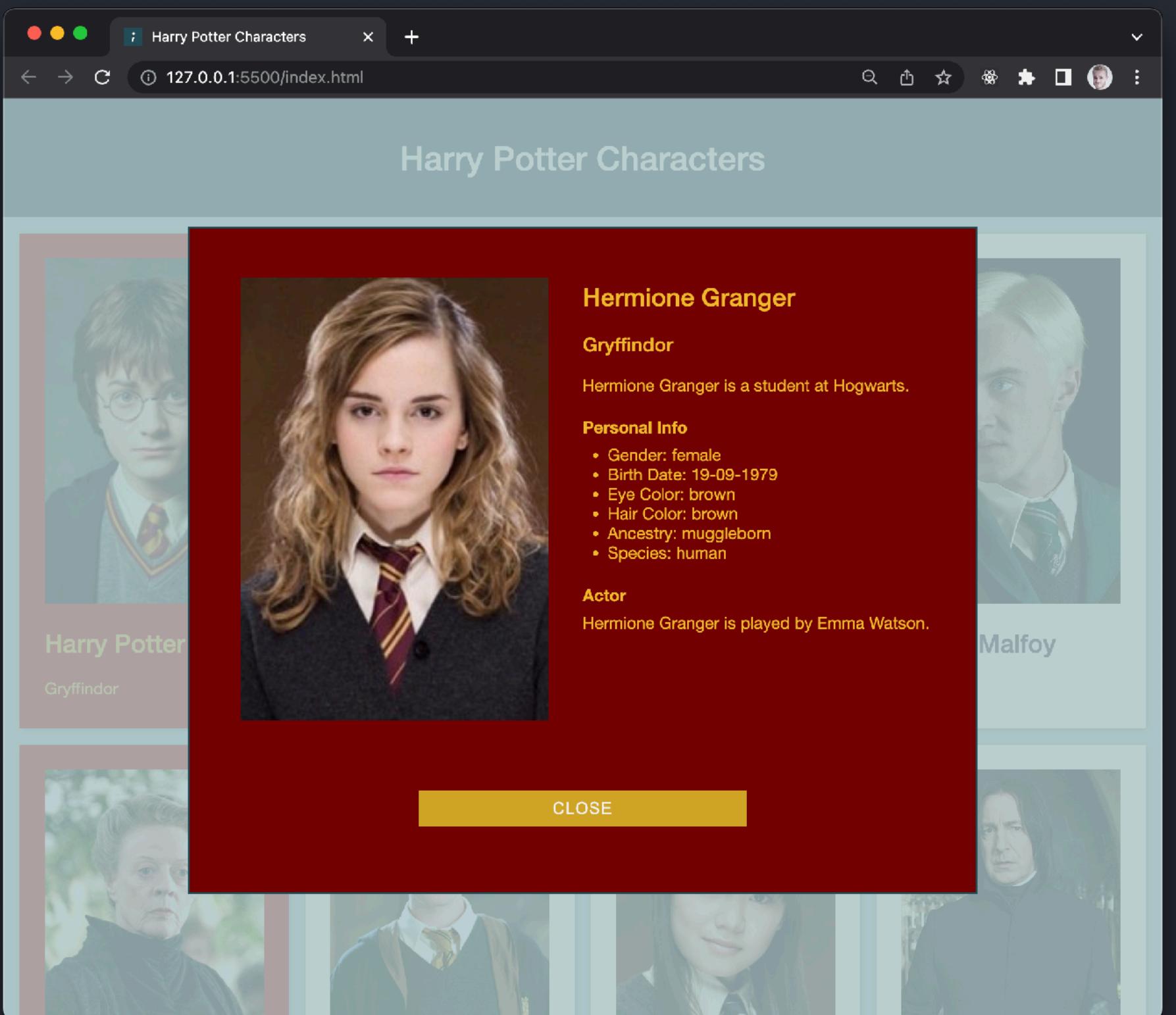
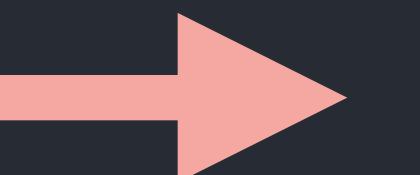


```
<!DOCTYPE html>  
<html lang="en">  
  <head>...</head>  
  <body>  
    <header>...</header>  
    <main>...</main>  
    ... <dialog id="dialog-character" data-theme="gryffindor" open>  
      <section class="dialog-grid">...</section>  
      <form method="dialog">...</form>  
      ::backdrop  
    </dialog>  
    <footer>...</footer>  
    <script src="app.js"></script>  
    <!-- Code injected by live-server -->  
    <script>...</script>  
  </body>  
</html>
```

data-theme attribute på dialog

```
dialog[data-theme="gryffindor"] {  
    background-color: #740001;  
    color: #eeba30;  
}
```

```
dialog[data-theme="gryffindor"] button {  
    background-color: #d3a625;  
}
```



```
<!DOCTYPE html>  
<html lang="en">  
  ><head>...</head>  
  ><body>  
    ><header>...</header>  
    ><main>...</main>  
    ><dialog id="dialog-character" data-theme="gryffindor" open>  
      ><section class="dialog-grid">...</section> grid  
      ><form method="dialog">  
        ><button id="btn-cancel">Close</button>  
      </form>  
      >::backdrop
```



Code
Every
Day

And have fun 