Tutorial 5

Ex3: recap,
JavaScript (+Demo), Ex4

Projects

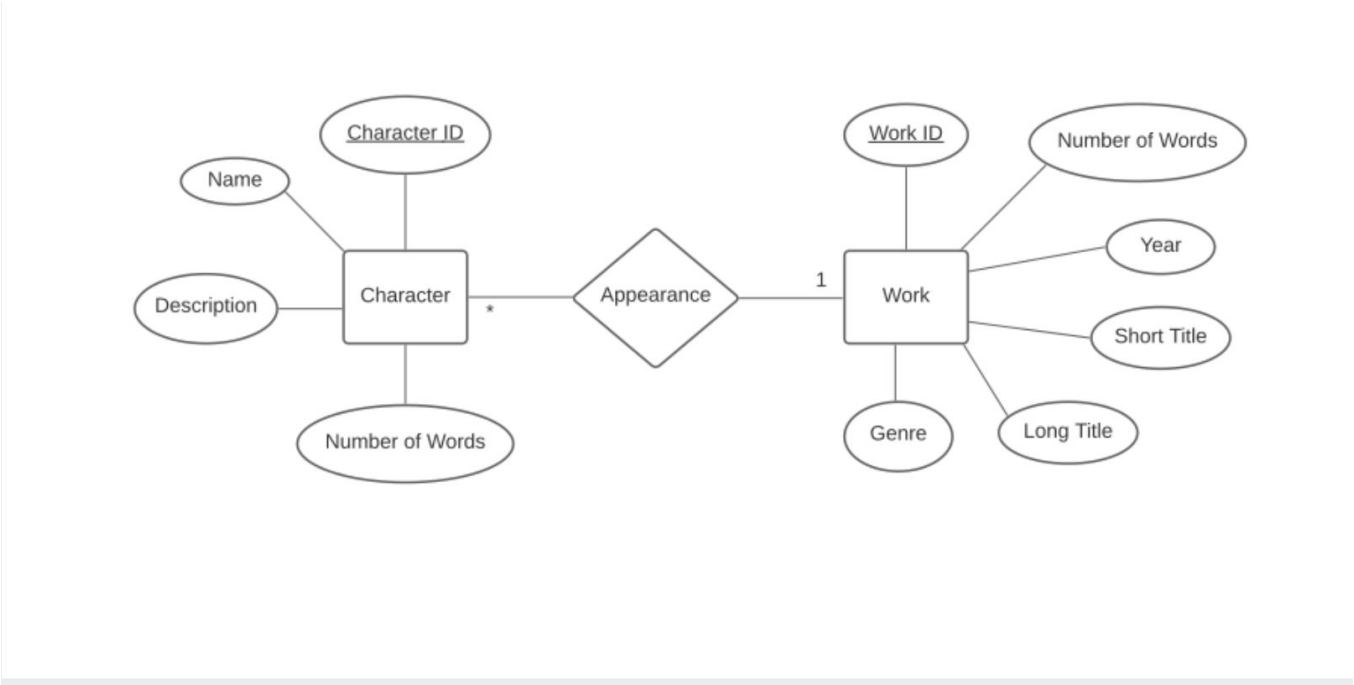
⇒ Is anyone not in a group yet?

Exercise 3: Recap

- Solutions for the ERD task were missing in the sample solution, so we included it here.
- Some points that may have been challenging:

Exercise 3: Recap

Make sure your ERD and Database structure actually match.



Exercise 3: Recap

Do clowns appear more often in comedies or in tragedies?

Where can we read information about clowns? - Character name, description

Do we care about upper or lower case? No. Solution: **String search with a trick**:

```
cursor.execute("""SELECT genre, COUNT(*) FROM character
INNER JOIN work
   ON character.work_id = work.id
WHERE upper(character.name) LIKE '%CLOWN%' OR upper(character.description) LIKE
'%CLOWN%'
GROUP BY genre;
""")
```

General JavaScript Tips

- **Don’t know something specific?**

  Google (or ChatGPT) is your best friend!
- **Something’s going wrong or not showing up?**

  You can debug with dev tools

  Go to sources and check if all your files are loaded correctly

  Online JS Compiler and Debugger
- **Changes aren’t showing up on your website?**

  Try debugging

  Go to network tab and disable cache or reload with emptying cache

JavaScript Variables

Defining variables

let x = 12; (mutable, might change later)

x = 15;

const x = 11; (immutable, will never change)

JavaScript Functions

Functions

// named functions

```
function add(a, b) {
        return a + b;
}
```

// anonymous functions

Anonymous Function with function keyword:

```
function(a, b) {
        return a + b;
}
```

Arrow Function with Block Body:

```
(a, b) => {
        return a + b;
}
```

Arrow Function with Expression Body:

```
(a, b) => a + b;
```

→ *When an arrow function has only one expression, you can omit the curly braces {} and the return keyword.*

Arrow Function with a Single Parameter:

```
a => a + 100;
```

JavaScript Functions

```
const addFunction = function(a, b) {
  return a + b;
};

const addArrowBlock = (a, b) => {
  return a + b;
};

const addArrowExpression = (a, b) => a + b;

const add100 = a => a + 100;

console.log(addFunction(2, 3)); // 5
console.log(addArrowBlock(2, 3)); // 5
console.log(addArrowExpression(2, 3)); // 5
console.log(add100(50)); // 150
```

JavaScript For-Loops

```
for (const c of "Hello") {

        console.log(c);

}
```

```
const a = "Hello";
for (let i = 0; i < a.length; i++) {
  console.log(a[i]);
}
```

JavaScript Sorting Arrays

```
const fruits = ["Banana", "Orange", "Apple", "Mango"];
```

fruits.sort(); → ?

Apple,Banana,Mango,Orange

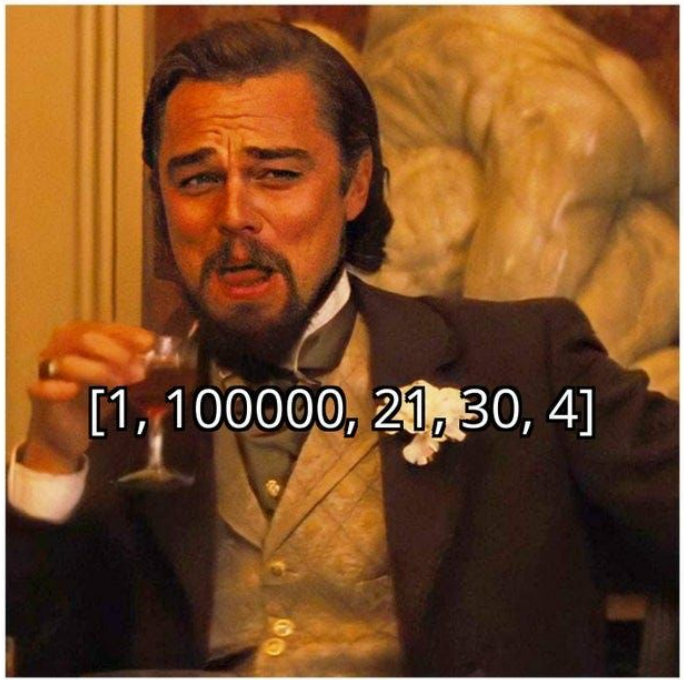
JavaScript Sorting Arrays

- let test_array;
- test_array = [1,30,21,4,100000]
- test_array.sort() → ?

⇒ By default, the sort() function sorts values as strings.
→ when numbers are sorted as strings, "21" is bigger than "100000", because "2" is bigger than "1"

People learning JavaScript:
"I'll use array.sort() to sort this list of numbers!"

JavaScript:



JavaScript Sorting Arrays

- Because of this, the sort() method will produce incorrect result when sorting numbers.
- You can fix this by providing a compare function:

```
const points = [1, 30, 21, 4, 100000];
points.sort(function(a, b){return a - b});
```

- → (finally) 1,4,21,30,100000
- When the sort() function compares two values, it sends the values to the compare function, and sorts the values according to the returned (negative, zero, positive) value.
- If the result is…
  - negative, a is sorted before b.
  - positive, b is sorted before a.
  - is 0, no changes are done with the sort order of the two values.
- JS Array Sort

JavaScript

- Very Basic Exercises:
  - DEMO is available on OLAT
- Process an input
- change button color
- “generate” emojis

Maybe useful links

- Python to JS converter
- Online JS Compiler and Debugger
- JS Tutorials (German)

Exercise 4


Word Analytics
Enter a noun below and start analyzing!
HoUsE
Analyze!
Word entered: HoUsE
The language of your word is: The language of the word cannot be determined.
Your word has the length: 5
The first letter is capitalized: true
Number of distinct letters: 5
Ratio of consonants to vowels in the word: 0.67
Inverted the case of the word: hOuSe
Worth of the word: 68
Palindromeness:


Word Analytics
Enter a noun below and start analyzing!
Nonsens-ikeit
Analyze!
Word entered: Nonsens-ikeit
The language of your word is: German
Your word has the length: 13
The first letter is capitalized: true
Number of distinct letters: 9
Ratio of consonants to vowels in the word: 1.60
Inverted the case of the word: nONSENS-IKEIT
Worth of the word: 154
Palindromeness: