Toegepaste Informatica

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UCLL HOGESCHOOL

Front-end development

Part 2: Dynamic web applications

2. Javascript Arrays

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Javascript: Arrays

- Creating
- Manipulating
- Iterating
- Spreading syntax
- Destructuring arrays

Creating arrays

- 2 ways to create an array:

```
let persons = new Array();
let persons = [];              // most common method
```

- Initialize array upon creation

```
let persons = [“John”, “Frank”, “Annie”];   //array of strings

let persons = [{name: “John”, age: 45},
               {name: “Annie”, age: 23}]    //array of objects
```

Creating arrays

- Getting item by index

```
let persons = [“John”, “Frank”, “Ivo”];

console.log(persons[0]);      // John
console.log(persons[1]);      // Frank
console.log(persons[2]);      // Annie
console.log(persons.length); // 3
```

Manipulating arrays

- Push: add item to the end

```
let persons = [“John”, “Frank”, “Annie”];
persons.push(“Martha”) // result: “John”, “Frank”, “Annie”, “Martha”
```

- Pop: remove last item

```
let persons = [“John”, “Frank”, “Annie”];
let last = persons.pop();
console.log(last)            // “Annie”
console.log(persons)         // “John”, “Frank”
```

Manipulating arrays

- Shift: extract first element

```
let persons = [“John”, “Frank”, “Annie”];
let first = persons.shift();
console.log(first)            // “John”
console.log(persons)          // “Frank”, “Annie”
```

- Unshift: add element to the beginning

```
let persons = [“John”, “Frank”, “Annie”];
persons.unshift(“Martha”);
console.log(persons)          // “Martha, “John”, “Frank”, “Annie”
```

Iterating over arrays

- Classic for-loop

```
const persons = [“John”, “Frank”, “Annie”];

for(let i=0; i<persons.length; i++) {
  console.log(persons[i]); // “John”, “Frank”, “Annie”
}
```

- For … of …

```
const persons = [“John”, “Frank”, “Annie”];

for(const person of persons) {
  console.log(person); // “John”, “Frank”, “Annie”
}
```

Iterating over arrays

- Modern ways of iterating: filter(…) and forEach(…)
  - Next lesson…

Spreading syntax

- “Spread” elements of one array into another one

```
let males = [“John”, “Frank”];
let females = [“Annie”, “Martha”];

let persons = […males, …females] //result: [“John”, “Frank”, “Annie”, “Martha”]
```

- The “…” takes all elements of the array and pushes them into another one.
- This is a **common** pattern in JS

Array destructuring

- Destructuring: unpack elements out of an array and assign them to a variable

```
let persons = [“John”, “Frank”, “Annie”];

const [one, two, three] = persons;

console.log(one);     // “John”
console.log(two);     // “Frank”
console.log(three);   // “Annie”
```

Array destructuring & spreading combined

- Add remaining elements in a new array:

```
let persons = [“John”, “Frank”, “Annie”];

const [one, …rest] = persons;

console.log(one);      // “John”
console.log(rest);     // [“Frank”, “Annie”]
```

- JS detects more elements than it can destruct in variables, so all the remaining elements are pushed in a new array called “rest”