

Introcution to JavaScript

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March 2023

Discord

<https://discord.gg/W3QJrBwD6Z>



What learned we last Week?

- Variables `let x = 1`
- Data Types `number` , `string` , `boolean` , `null` , `undefined`
- Conversion between data types `Number()` , `String()` , `Boolean()`
- Operators `+` , `-` , `*` , `/` , `%`
- Debugging with `console.log()`
- Comments `//` and `/* */`
- Run using `node file.js` and test with `npm test file`

Tipp: Dont forget to commit and push your changes

Goals of this week

- Comparing values
- Conditional Statements
- Loops
- Logical Operators
- Prompts

Loose Comparison

```
1 == 1 // true
```

```
1 == 2 // false
```

```
1 != 1 // false
```

```
1 != 2 // true
```

```
1 < 2 // true
```

```
1 > 2 // false
```

```
const isEqual = 11 == 10 // isEqual = false
```

When comparing two values of different types, JavaScript will try to convert one type into the other type.

```
1 == "1" // true
0 == false // true

"false" != true // true
1 != true // false

"1" < 2 // true
true > 0 // true
```

```
null == undefined // true

"" == false // true
"0" == false // true
"false" == false // false
```

Strict Comparison

```
1 === 1 // true  
1 === 2 // false  
1 !== 1 // false
```

```
1 < 2 // true  
1 > 2 // false
```

```
1 === "1" // false  
0 === false // false
```

Tipp: Use strict comparison whenever possible

Conditional Statements

```
if (condition) {  
    // do something  
}
```

```
if (condition) {  
    // do something  
} else {  
    // do something else  
}
```

```
if (condition) {  
    // do something  
} else if (condition) {  
    // do something else  
} else {  
    // do something else  
}
```

Example

```
const x = 1
if (x === 1) {
  console.log("x is 1")
} else if (x === 2) {
  console.log("x is 2")
} else {
  console.log("x is not 1 or 2")
}
```

Logical Operators

`&& // and` `|| // or` `! // not`

```
const x = 1; const y = 2;
```

```
if (x === 1 && y !== 2) {  
    // do something  
}
```

```
if (!(x === 1) || y === 2) {  
    // do something  
}
```

Loops

```
while (condition) {  
    // do something  
}  
do {  
    // do something  
} while (condition)  
  
for (let i = 0; i < 10; i++) {  
    // do something  
}
```

```
while(true) {  
    // do something  
    if (condition) { break }  
}  
  
for(let i = 0; i < 10; i++) {  
    if (condition) { continue }  
    // do something  
}
```

Examples

```
let i = 0
while (i < 10) {
  console.log(i)
  i++
}

for (let i = 0; i < 10; i++) {
  console.log(i)
}

// Both print the numbers 0 to 9
```

Prompt

Get user input from the console.

```
// Needed to access the prompt function
import { prompt } from "../prompt.js"

const name = prompt("What is your name?")
console.log("Your name is: " + name)
```

Tipp: The function is normally not available in Node.js.

Tipp: The function always returns a string.

Assignment

Link in the Discord channel.

Ways to open the assignment:

Click on `Open in Visual Studio Code` to run the code on your PC.

Use the url e.g.

`https://github.com/JS-Kurs-TU-Dresden/lesson-2-Nitwel` but
replace the `.com` with `.dev` to open the assignment in the
browser.

Tasks and Points

Goal is to get 100 Points.

- `basic-branching` 20
- `basic-logical-operators` 20
- `basic-comparisons` 20
- `basic-loops` 20
- `basic-prompt` 10
- `calculator` 30
- `fibonacci` 30
- `fizzbuzz` 30
- `pyramid` 30
- `quiz` 40