Introcution to JavaScript

Nils Twelker

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 run test file`

Tipp: Dont forget to commit and push your changes

Goals of this week

- Comparing values
- Conditional Statements
- Loops
- Logical Operators

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

Strict 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
```

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
}
```

Example

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

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

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.

Exercise

Link will be posted on Discord