Programming in JS

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Thursdays

1. ~~Intro to JS / variables / types / GH~~
2. Conditions, simple overview functions, simple events – onclick, loops
3. HTML DOM; Eventlisteners;
4. Arrays / Objects
5. Arrays / Objects
6. Functions / ES5/ES6 -> other JS versions
7. Handling API response, API calls
8. Project presentations (inc. Portfolio presentations)

Last session

How to connect js file // external and internal

Data types – primitive // number, string, boolean, undefined, null, (symbol)

JS syntax // case sensitive, hypens not allowed, semicolon

Operators

- Arithmetic // + - * ** / % ++ --
- Assignment // = += -= *= /= %= **=
- Comparison // == === != !== < > <= >= ?
- Type // typeof()

prompt(), alert(), confirm()

This session

Conditions

Loops

Functions

HTML DOM

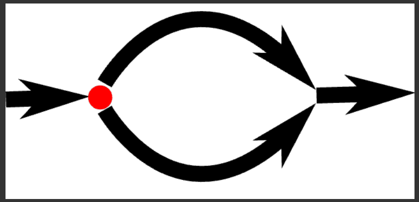
Conditional Statements

Use if to specify a block of code to be executed, if a specified condition is true

Use else to specify a block of code to be executed, if the same condition is false

Use else if to specify a new condition to test, if the first condition is false

Use switch to specify many alternative blocks of code to be executed



```
if (condition) {
  //  block of code to be executed if the condition is true
} else {
  //  block of code to be executed if the condition is false
}
```

```
condition ? exprIfTrue : exprIfFalse
```

```
switch(expression) {
  case x:
    // code block
    break;
  case y:
    // code block
    break;
  default:
    // code block
}
```

Loops

Loops

There are many different kinds of loops, but they all essentially do the same thing: they repeat an action some number of times.

For

Do…while

While

For…in - objects

For…of - array

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

For loop

```
for (let number = 0; number <= 12; number += 2) {
  console.log(number);
}
```

```
for (let current = 20; ; current++) {
  if (current % 7 == 0) {
    console.log(current);
    break;
  }
}
```

Do…While and While

```
let yourName;

do {
  yourName = prompt("Who are you?");
} while (!yourName);
console.log(yourName);
```

```
let number = 0;

while (number <= 12) {
  console.log(number);
  number = number + 2;
}
```

Functions

A JavaScript function is a block of code designed to perform a particular task.

A JavaScript function is executed when "something" invokes it (calls it).

Function syntax

```
function name(parameter1, parameter2) {
  // code to be executed
}
```

```
function hello(val) {
  return console.log("Hello " + val);
}
```

Arrow function (ES6) syntax

```
hello = (parameter1, parameter2) => {
 // code to be executed
}
```

```
const hello = (val) => console.log("Hello " + val);
```

Function Invocation

The code inside the function will execute when "something" **invokes** (calls) the function:

- When an event occurs (when a user clicks a button)
- When it is invoked (called) from JavaScript code
- Automatically (self invoked)

HTML events

Here are some examples of HTML events:

- An HTML web page has finished loading
- An HTML input field was changed
- An HTML button was clicked

https://www.w3schools.com/jsref/dom_obj_event.asp

```
<element event="some JavaScript">
```

```
<button onclick="displayDate()">The time is?</button>
```

JavaScript can change all the HTML elements in the page

JavaScript can change all the HTML attributes in the page

JavaScript can change all the CSS styles in the page

JavaScript can remove existing HTML elements and attributes

JavaScript can add new HTML elements and attributes

JavaScript can react to all existing HTML events in the page

JavaScript can create new HTML events in the page getElementsByTagName

getElementsByClassName

getElementById

querySelector

querySelectorAll

JS output

✗ The innerText property returns just the text, without spacing and inner element tags.

✗ The innerHTML property returns the text, including all spacing and inner element tags.

✓ The textContent property returns the text with spacing, but without inner element tags.

✗ document.write()

✗ window.alert()

✓ console.log()

Task – Gasoline

Make a program that asks the price of the gasoline and amount of money from the user. The program calculates how much gasoline the user gets with the money. The result is displayed to screen.