Javascript Notes

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Getting started

1.1 Javascript directly in HTML

Here is an example of how to write a very simple web page that will give a pop-up box saying Hi there!:

```
<html>
    <script type="text/javascript"> alert("Hi there!");
    </script>
</html>
```

1.2 External file

First, we are going to create a separate JavaScript file. These files have the postfix .js. I'm going to call it ch1_alert.js. This will be the content of our file:

```
alert("Saying hi from a different file!");
```

Then, in an html file

```
<html>
    <script type="text/javascript" src="ch1_alert.js"></script>
</html>
```

1.3 Running javascript like a script with node

You can run JavaScript code in the terminal using Node.js.

```
console.log("Hello world")
```

```
node script.js
```

1.4 Semicolons

After every statement, you should insert a semicolon. JavaScript is very forgiving and will understand many situations in which you have forgotten one

1.5 Comments

Js has two types of comments, single line // and multi line /* */

1.6 Prompts

Another thing we would like to show you here is also a command prompt. It works very much like an alert, but instead, it takes input from the user

```
prompt("Enter something")
```

1.7 Random

We can generate random reals between 0 and 1 with

```
Math.random()
```

Multiply by 100 to get reals between 0 and 100

```
Math.random() * 100
```

Use the floor function to truncate to integers

```
Math.floor(Math.random() * 100)
```

Essentials

2.1 Vars

2.1.1 let, var, and const

A variable definition consists of three parts: a variable-defining keyword (let, var, or const), a name, and a value. Let's start with the difference between let, var, or const. Here you can see some examples of variables using the different keywords:

```
let nr1 = 12;
var nr2 = 8;
const PI = 3.14159;
```

let and var are both used for variables that might have a new value assigned to them somewhere in the program. The difference between let and var is complex. It is related to scope.

var has global scope and let has block scope. var's global scope means that you can use the variables defined with var in the entire script. On the other hand, let's block scope means you can only use variables defined with let in the specific block of code in which they were defined

On the other hand, const is used for variables that only get a value assigned once— for example, the value of pi, which will not change. If you try reassigning a value declared with const, you will get an error:

Note: