



JavaScript perusteet

Web-sovellusten kehittäminen Javascriptillä

TOooBL10, 5 op

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Agenda

- What is JavaScript?
- What can be done with it?
- How do you start using JS?

EVOLUTION OF WEB DEVELOPMENT



Where can you JavaScript in action?

Social media platforms: Facebook, Twitter etc.

Google: Search Suggestions, Gmail, Maps, Analytics

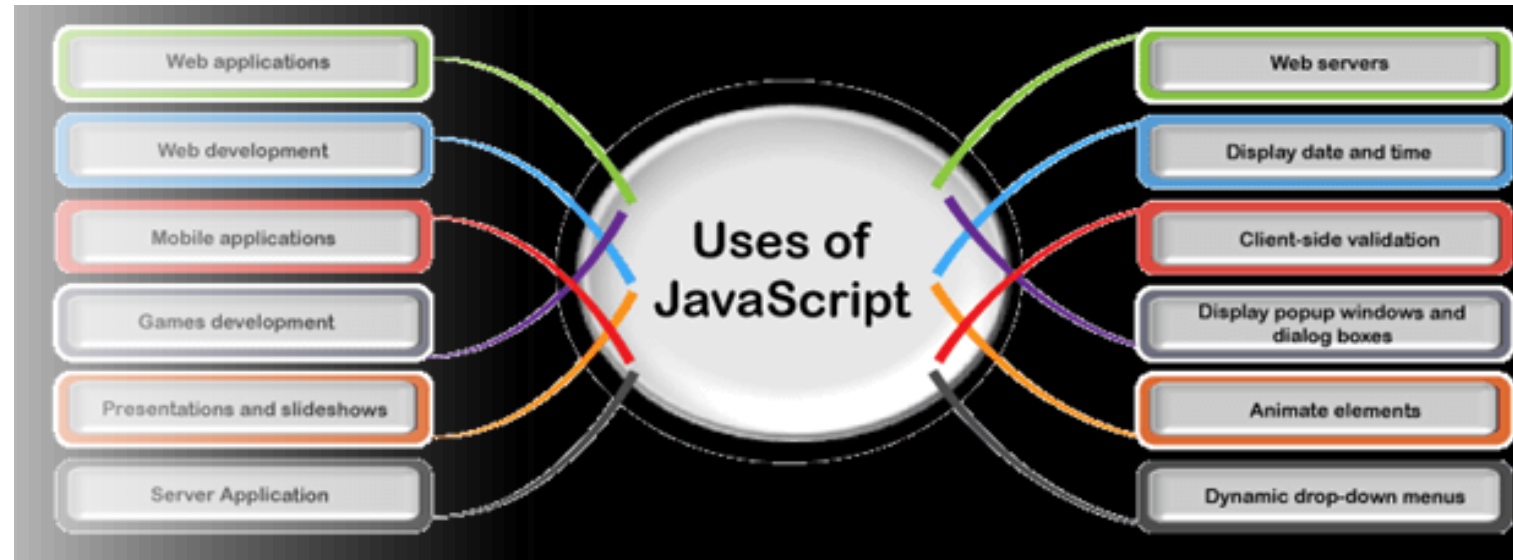
Webshops: shopping carts, user tracking

Navigational menus everywhere

Mobile apps and Windows apps

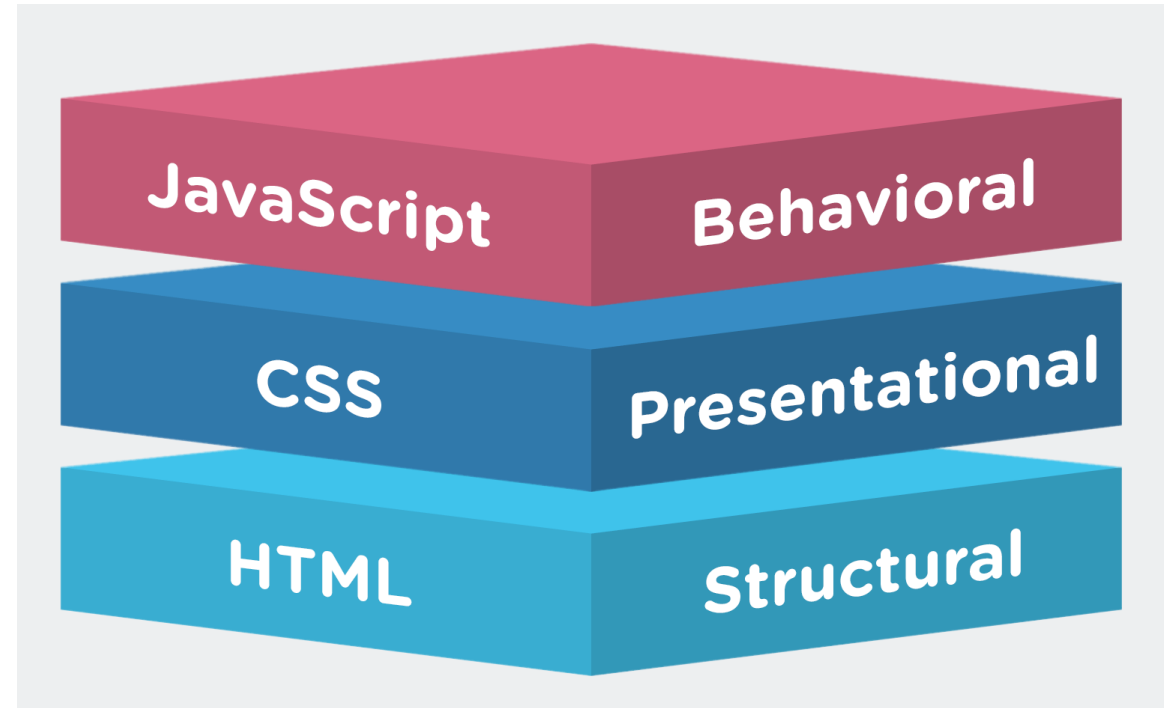
Where ...

- ...usability & user experience counts
- ...content needs to be updated



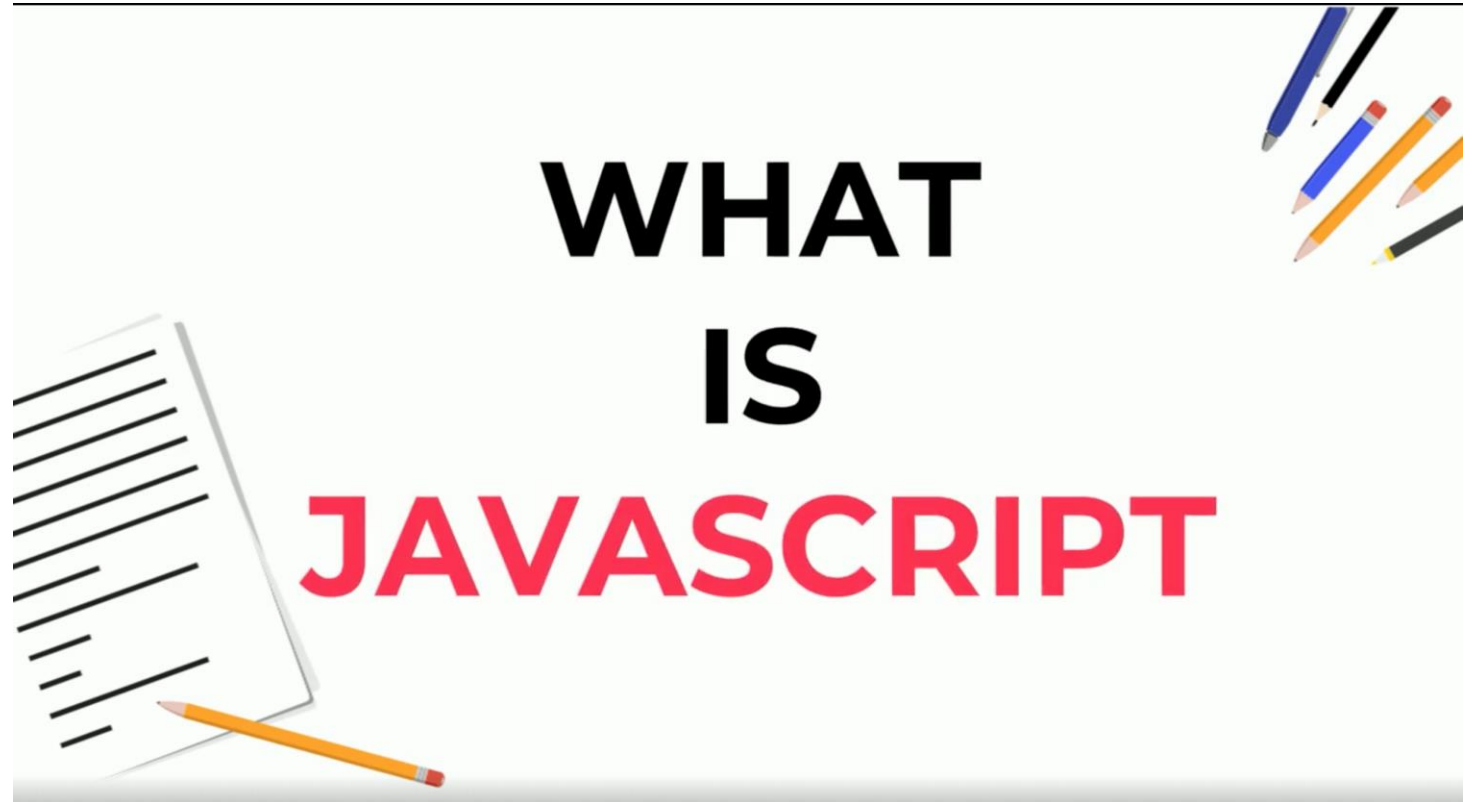
HTML, CSS and JavaScript for Web Development

- **HTML** - *"Hyper Text Markup language"*. The different types of content on the web page can be labeled using HTML tags naming as images tags, header tags and etc.
- **CSS** - help in giving style to the websites via slick coloring, alluring fonts, and enchanting background images correspondingly
- **JavaScript** - is the most complicated language as compared to the HTML and CSS. It enables the developers in designing the interactive sites



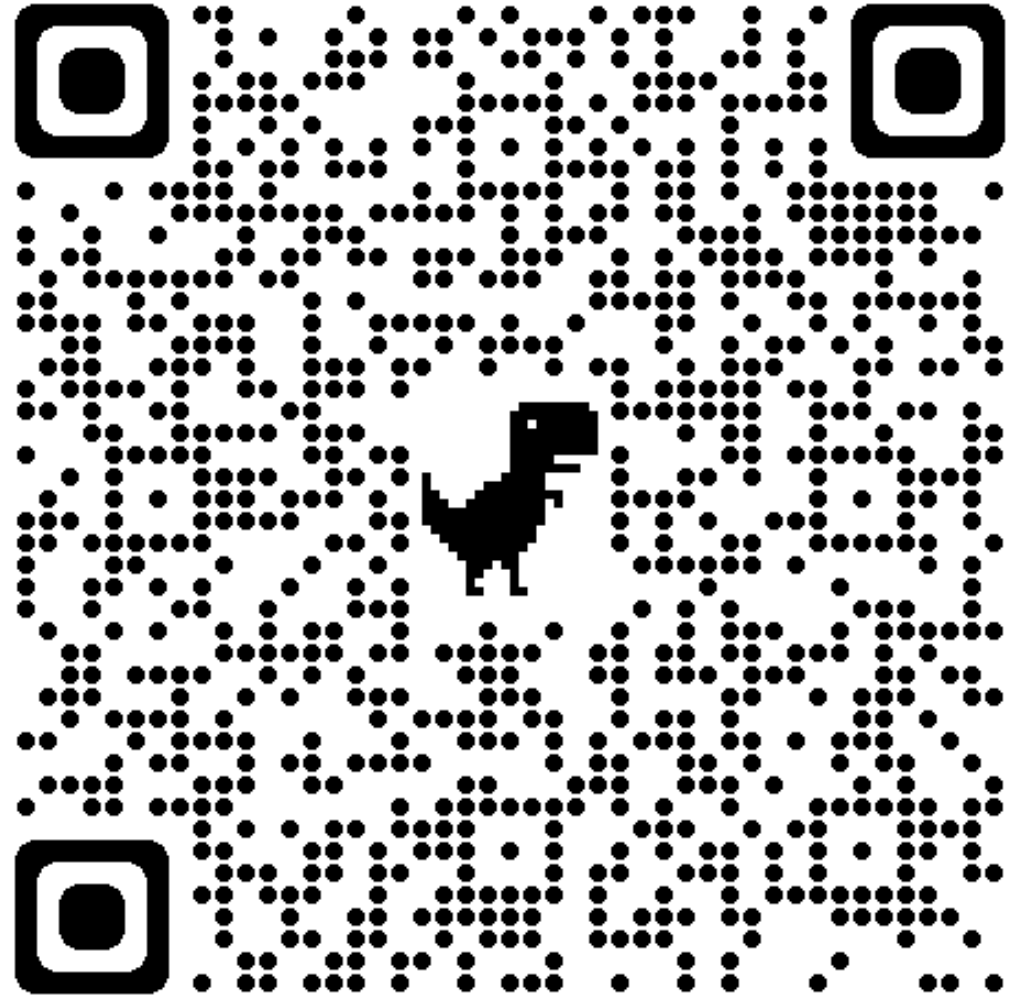
What is JavaScript

- Scripting language that enables you to create dynamically updating content, control multimedia, animate image
- Store useful values inside variables
- Running code in response to certain events occurring on a web page



HTML, CSS and JavaScript for Web Development

Excercise



https://developer.mozilla.org/en-US/docs/Learn/JavaScript/First_steps/What_is_JavaScript#so_what_can_it_really_do

What is JavaScript doing on your page?

- When you load a web page in your browser, you are running your code (the HTML, CSS, and JavaScript) inside an execution environment (the browser tab)





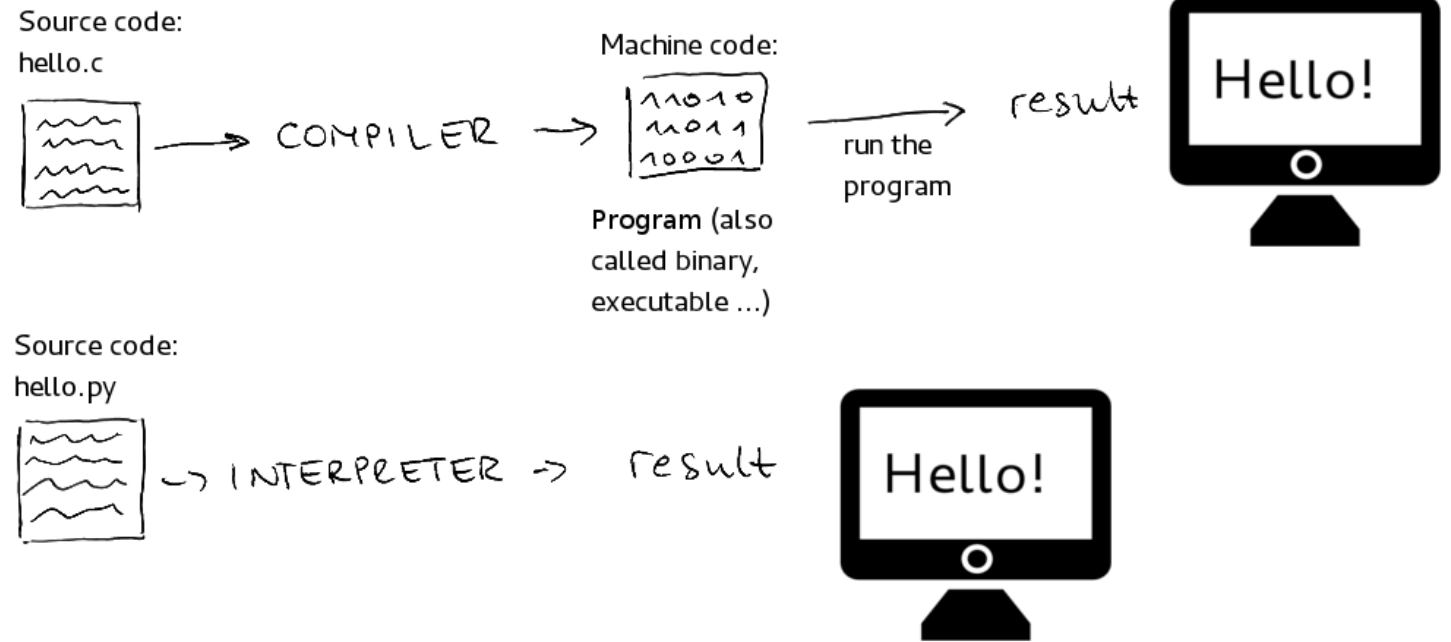
Browser security

Each browser tab has its own separate execution environment for running code in — this means that in most cases the code in each tab is run completely separately, and the code in one tab cannot directly affect the code in another tab — or on another website

Interpreted versus compiled code

In interpreted languages, the code is run from top to bottom and the result of running the code is immediately returned

Compiled languages are transformed (compiled) into another form before they are run by the computer



JavaScript running order

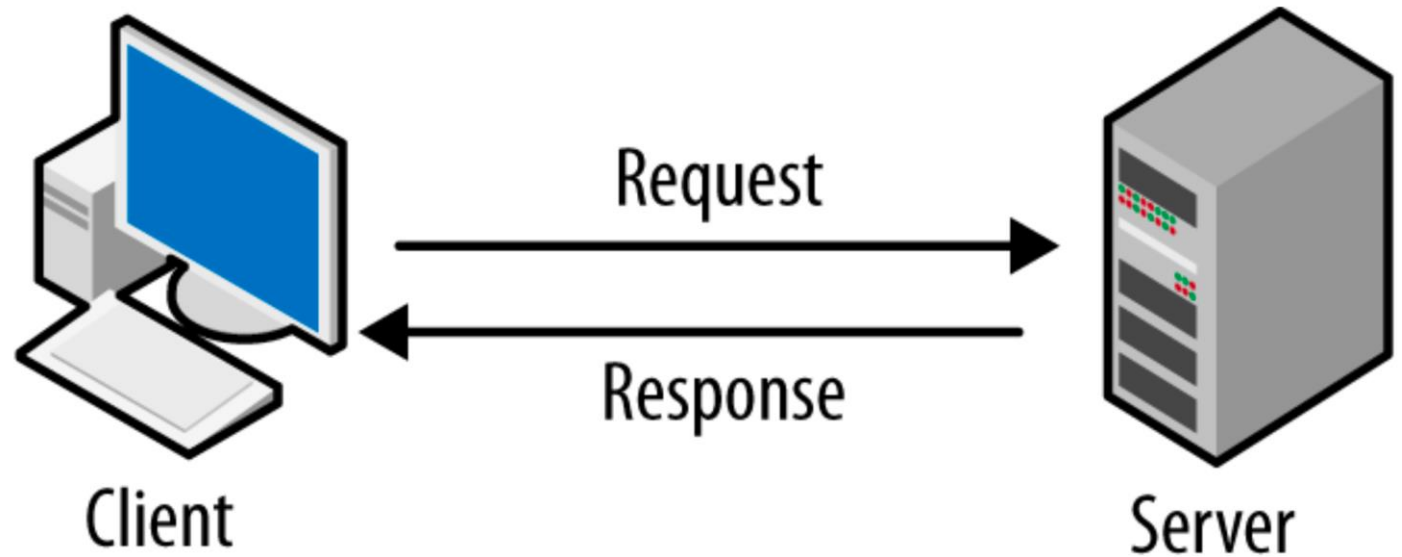
When the browser encounters a block of JavaScript, it generally runs it in order, from top to bottom.



Server-side versus client- side code

Client-side code is run on the user's computer — when a web page is viewed, the page's client-side code is downloaded, then run and displayed by the browser

Server-side code is run on the server, then its results are downloaded and displayed in the browser

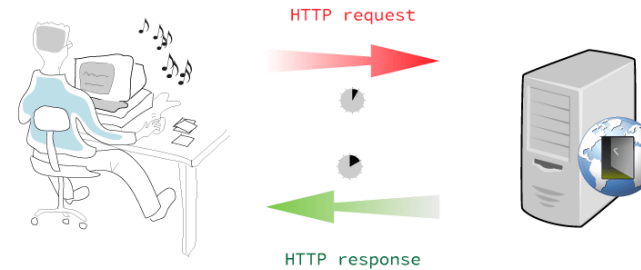


Dynamic versus static code

- The word dynamic is used to describe both client-side JavaScript, and server-side languages
- Server-side code dynamically generates new content on the server, e.g. pulling data from a database
- Client-side JavaScript dynamically generates new content inside the browser on the client, e.g. creating a new HTML table, filling it with data requested from the server, then displaying the table in a web page shown to the user
- Static shows the same content all the time

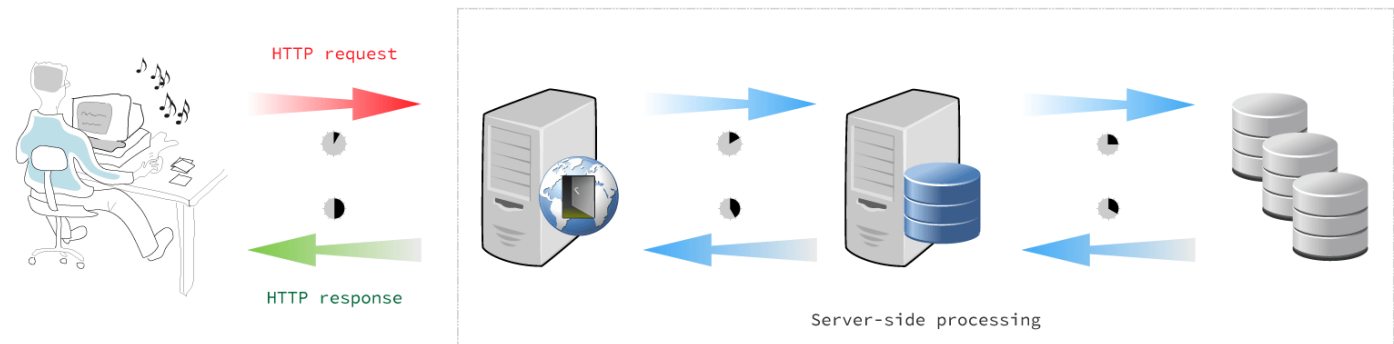
Scheme A

Static Website



Scheme B

Dynamic Website



How do you add JavaScript to your page?

```
document.addEventListener('DOMContentLoaded', () => {  
  function createParagraph() {  
    const para = document.createElement('p');  
    para.textContent = 'You clicked the button!';  
    document.body.appendChild(para);  
  }  
  
  const buttons = document.querySelectorAll('button');  
  
  for (const button of buttons) {  
    button.addEventListener('click', createParagraph);  
  }  
});
```

```
<script>  
  
  // JavaScript goes here  
  
</script>
```

```
<script src="script.js" defer></script>
```

Developer tools

DevTools is a set of web developer tools built directly into the browser. DevTools can help you edit pages on-the-fly and diagnose problems quickly, which ultimately helps you build better websites, faster

[Find out more...](#)

<https://www.youtube.com/watch?v=VYyQv0CSZOE>

WS1





Valmistautuminen seuraavaan tapaamiseen

Aika ja Paikka: Perjantai 9.9.2022, klo 9.00 -
11.45, Tikkurilan kampus

Kotitehtävänä on laittaa työkalut kuntoon (VSC, GitHub) ja ladata WS matskut GitHubista (linkki löytyy aloitussivulta).

WS1 tehtävät on word tiedostossa ja tarkoitus on, että teette ne ennen seuraavaa tapaamista.

