



Teknostart Dag 4

Create your own Website

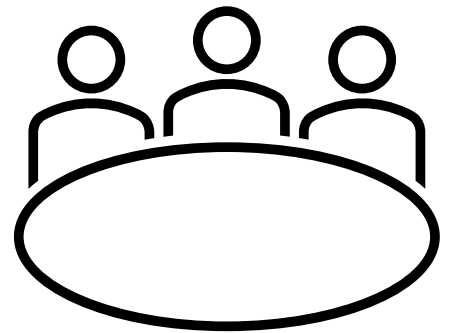
Innsjekk

Hva?

- Uformell, ved starten av dagen
- Mulighet til å dele noe med de andre i gruppen om hvordan du har det (feks. jeg er litt nervøs, spent på dagen, trøtt, ...)

Hvordan?

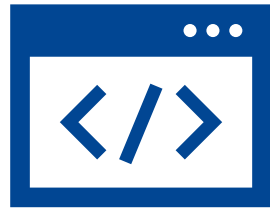
- Si gjerne også hvem du er, hvor du kommer fra
- Fortell kort noe om hvordan du har det? Hvordan har starten på dagen vært?
- 2-3 min. per person



Short Repetition of Day 3

- Redundante strukturer krever ekstra utstyr som øker kostnader (CAPEX = investering og drift)
- Hvordan bygge redundante strukturer?
- Hvordan beregne påliteligheten av en web-tjeneste mellom klient og server?
- Forskjellen mellom tilfeldige feil og målrettede angrep
- Viktig å beskytte informasjonen om system-struktur
- Mer om dette i TTM4185, TTM4110 ("PYSE"), [og TTM4158]

Goals for the Day



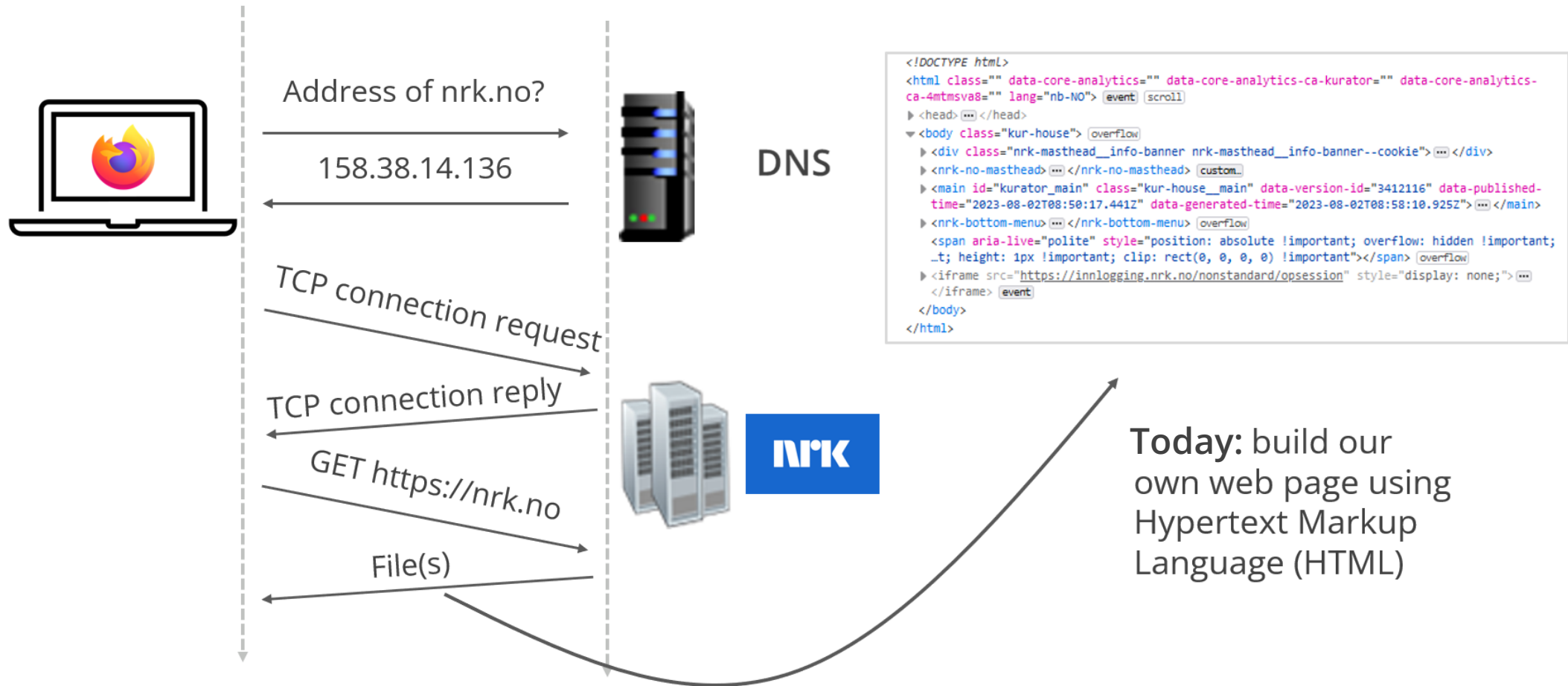
Understand how websites are created and served

What is HTML and how does it work?



Build your own website and share it with the world

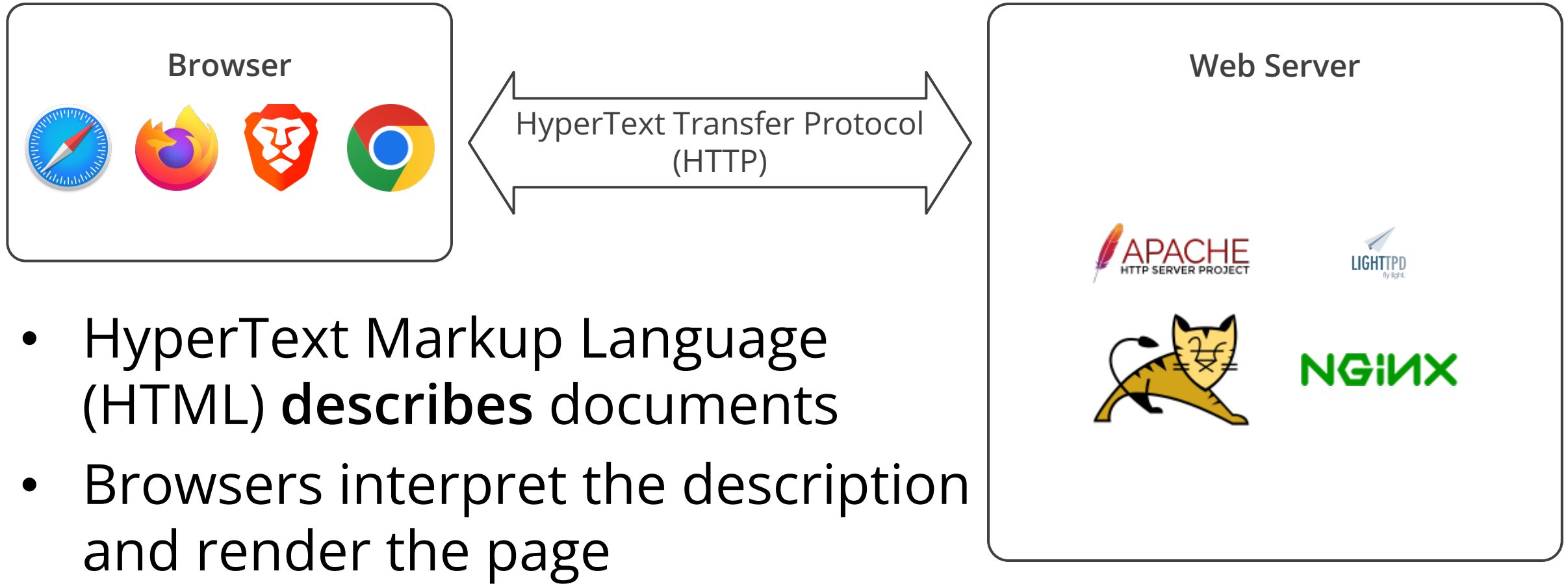
Context from Day 1



Context from Day 1

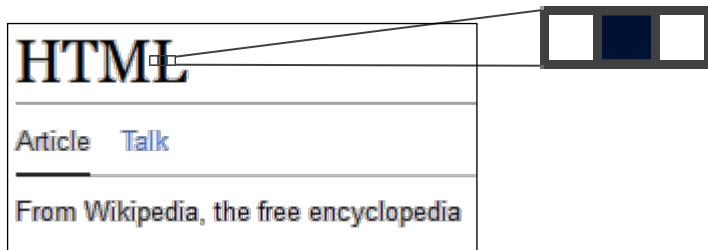
```
<!DOCTYPE html>
<html class="" data-core-analytics="" data-core-analytics-ca-kurator="" data-core-analytics-
ca-4mtmsva8="" lang="nb-NO"> event scroll
  <head> ... </head>
  <body class="kur-house"> overflow
    <div class="nrk-masthead__info-banner nrk-masthead__info-banner--cookie"> ... </div>
    <nrk-no-masthead> ... </nrk-no-masthead> custom...
    <main id="kurator_main" class="kur-house__main" data-version-id="3412116" data-published-
time="2023-08-02T08:50:17.441Z" data-generated-time="2023-08-02T08:58:10.925Z"> ... </main>
    <nrk-bottom-menu> ... </nrk-bottom-menu> overflow
      <span aria-live="polite" style="position: absolute !important; overflow: hidden !important;
_t; height: 1px !important; clip: rect(0, 0, 0, 0) !important"></span> overflow
    <iframe src="https://innlogging.nrk.no/nonstandard/opsession" style="display: none;"> ...
    </iframe> event
  </body>
</html>
```

Web Application Structure



Different Representations

Pixel-based



- Fixed size / resolution
- Color information for each coordinate

Declarative

```
<h1>HTML</h1>  
<span>Article</span>  
...
```

- Content annotated with tags that supply meaning & formatting

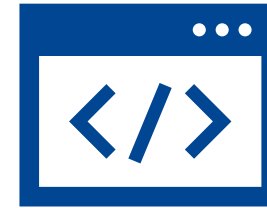
Preparation – Get Firefox



Installation

Mac: <https://support.mozilla.org/en-US/kb/how-download-and-install-firefox-mac>

Windows: <https://support.mozilla.org/en-US/kb/how-install-firefox-windows>



Accessing devtools

Mac: Cmd + Opt + I

Windows: F12

➔ Explore the different tabs, especially inspector & network

Simple Text File

- Pick your favorite editor
- Create a plain text file
- Save it as .html
- Open it in a browser
 - ➔ Outcome?
- Content, but without structure & formatting

Sublime Text



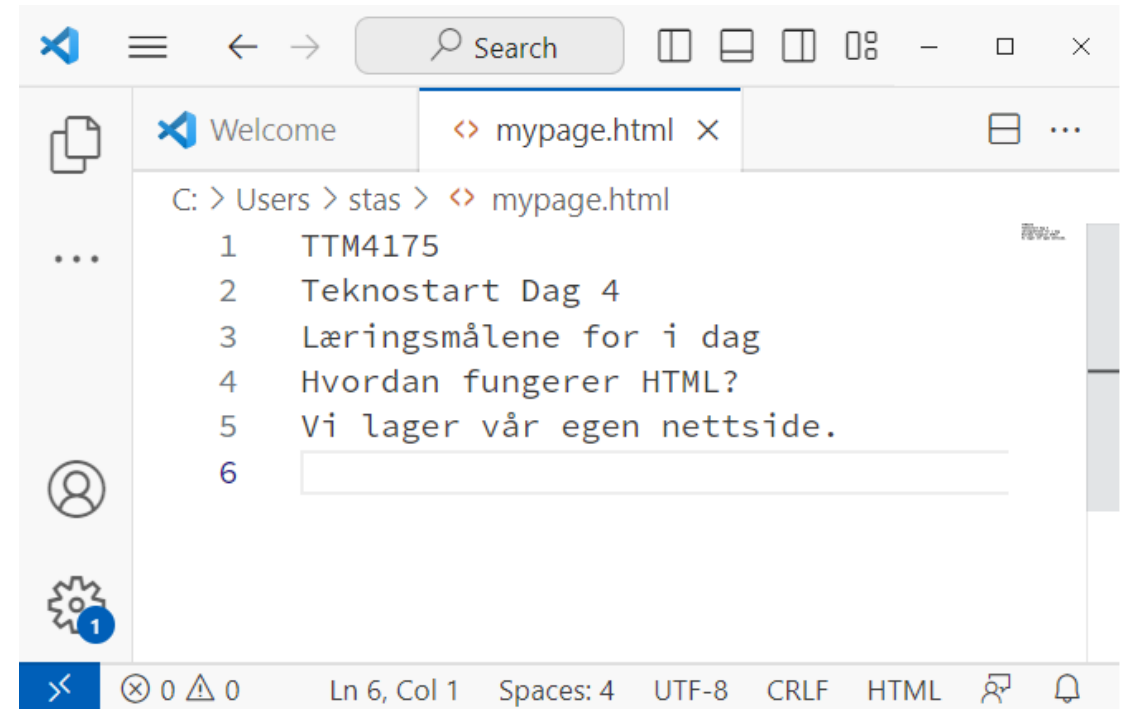
Notepad++



VS Code

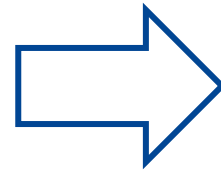


PhpStorm



Adding Annotations

```
<h1>TTM4175</h1>
<h2>Teknostart Dag 4</h2>
<p>Læringsmålene for i dag</p>
<ul>
  <li>Hvordan fungerer HTML?</li>
  <li>Vi lager vår egen nettside.</li>
</ul>
```



TTM4175

Teknostart Dag 4

Læringsmålene for i dag

- Hvordan fungerer HTML?
- Vi lager vår egen nettside.

- Content surrounded by opening and closing **tags**
- Tags create **elements** such as headings (h1, h2), paragraphs (p), or lists / list items (ul, li)
- **Nesting** allows creating complex structure

Adding More Structure

- Document type
 - HTML version and structure, automatic validation¹
- Actual HTML document
 - Root of hierarchical structure
 - Meta information via attributes
- Head / body
 - Broad separation into meta information / imports and visible content

```
<!DOCTYPE html>
```

```
<html lang="no">
```

```
<head>
```

```
<meta charset="UTF-8">
```

```
</head>
```

```
<body>
```

```
<h1>TTM4175</h1>
```

```
<h2>Teknostart Dag 4</h2>
```

```
<p>Læringsmålene for i dag</p>
```

```
<ul>
```

```
<li>Hvordan fungerer HTML?</li>
```

```
<li>Vi lager vår egen nettside.</li>
```

```
</ul>
```

```
</body>
```

```
</html>
```

Character set
that includes
Norwegian
and other
international
characters

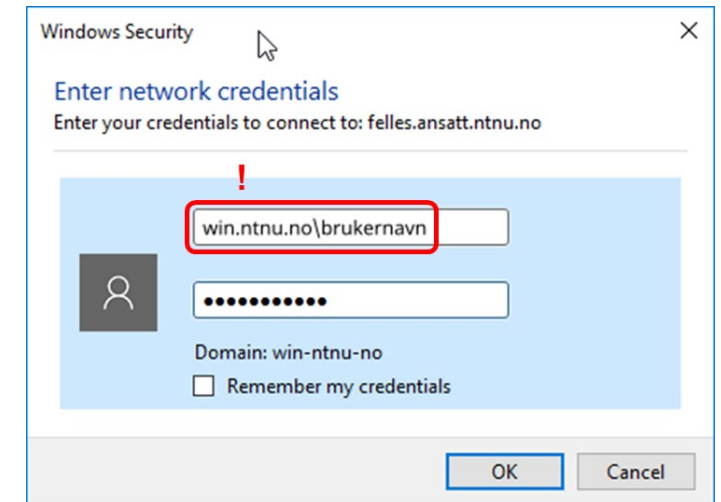
Towards Publishing Your Site

- Navigate to <https://s.ntnu.no/nettside>
- Follow the guide to connect to your directory

Webområder:

Nettverksområde	Beskrivelse
\\webedit.ntnu.no\brukernavn	<u>Nettverksområde for nettsiden din (for studenter og ansatte) på folk.ntnu.no.</u> Alle får leserettigheter til filer lagret her.

- ! Details matter and depend on your operating system / connection method when entering credentials
- Upload index.html and visit <https://folk.ntnu.no/yourusername>



Accessing and Connecting Pages

- `https://folk.ntnu.no/xyz` defaults to opening `index.html` in user `xyz`'s home directory
- Point to a specific file via `https://folk.ntnu.no/xyz/page1.html`
- Link pages using the `<a>` (anchor) tag

...

```
<h1>Welcome to page 1</h1>
  <a href="page2.html">Go to page 2</a>
  <a href="https://folk.ntnu.no/xyz/page2.html">Go to page 2</a>
  <a href="https://nrk.no">Check the news</a>
```

} Relative path
Absolute paths

...

 Attribute href (hypertext reference) of the `<a>` element

Bringing Life to Your Page: Styles

- Achieved by adding `style` attribute to regular elements
 - Pattern: `property1:value1;property2:value2;...`

...

```
<h1 style="font-size:150%;color:green;">TTM4175</h1>
```

```
<h2 style="font-family:verdana;background-color:lavender;">Teknostart Dag 4</h2>
```

```
<p>Læringsmålene for i dag</p>
```

```
<ul>
```

```
  <li style="color:blue;">Hvordan fungerer HTML?</li>
```

```
  <li style="color:blue;">Vi lager vår egen nettside.</li>
```

```
</ul>
```

...

- But: cumbersome maintenance and mix of style / content


Cascading Style Sheets (CSS)

- Commonly integrated as separate file(s)
- Syntax: **Selector** { **Style** }

```
styles.css
h1 {
  font-size: 150%;
  color: green;
}
li {
  color: blue;
}
```

```
mypage.html
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>TTM4175</title>
    <link rel="stylesheet" href="styles.css">
  </head>
  <body>
    ...
  </body>
</html>
```

Relative path
to style file



- Try the devtools inspector to temporarily edit styles

Create Your Own Group Page

- List group members
- Add a photo if you like
- Experiment with different HTML elements and CSS styles
- Show off your newly gained HTML skills!



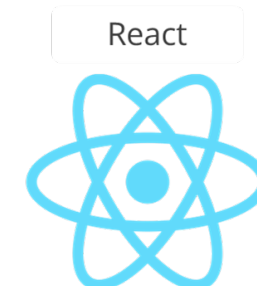
➔ Share the link to your page with me via Teams / email (stanislav.lange@ntnu.no) and I'll list it at <https://s.ntnu.no/ts-pages>

Reference / Cheat Sheets

- Overview of “ingredients” for building your page
 - <https://developer.mozilla.org/en-US/docs/Learn/HTML/Cheatsheet>
 - <https://www.w3schools.com/tags/default.asp>
 - <https://web.stanford.edu/group/csp/cs21/htmlcheatsheet.pdf>
- <http://www.csszengarden.com/001/> one page – many flavors purely via CSS (001 → anything in 001..221)

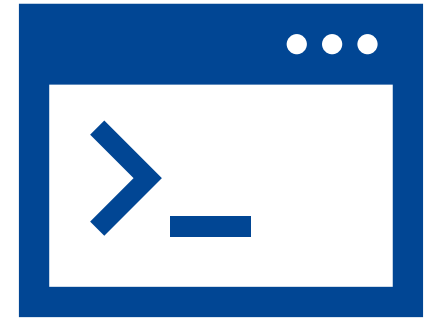
Summary

- Introduction to web servers, HTML, CSS
- Hands-on “from empty text file to published web site”
- Gallery of results @ <https://s.ntnu.no/ts-pages>
- Additional topics to explore
 - JavaScript
 - Server-side programming
 - Frameworks
 - Higher-level languages
 - ...



Next Session & Preparation

- The Linux Command Line Interface (CLI)
 - Learn basic commands for
 - Navigation
 - Remote access
 - Networking-related tasks
 - Understand basic virtualization principles
 - Learning principles: <https://ttm4175.iik.ntnu.no/learning/learning.html>
- Check ttm4175.iik.ntnu.no/unit-cli
 - ➔ Preparation: videos, readings, establishing connectivity



Evaluation of this Week

Tell us how this week was for you

<https://s.ntnu.no/tekno>

Evaluering av studiestart og
Teknostart

