

# Teknostart Dag 4

Create your own Website

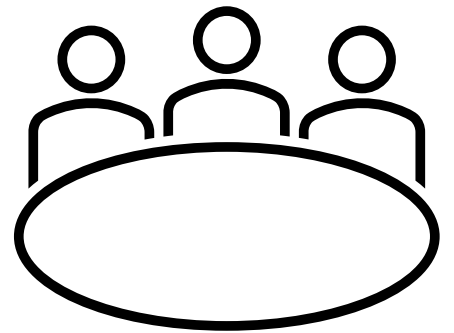
# Innsjekk

## 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?

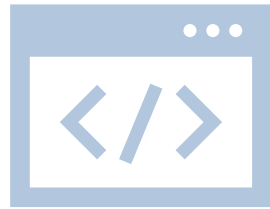
- Si gjerne også hvem du er, hvor du kommer fra
- Fortell kort noe om hvordan du har det? Hvordan har starten på dagen vært?
- 2-3 min. per person



# 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



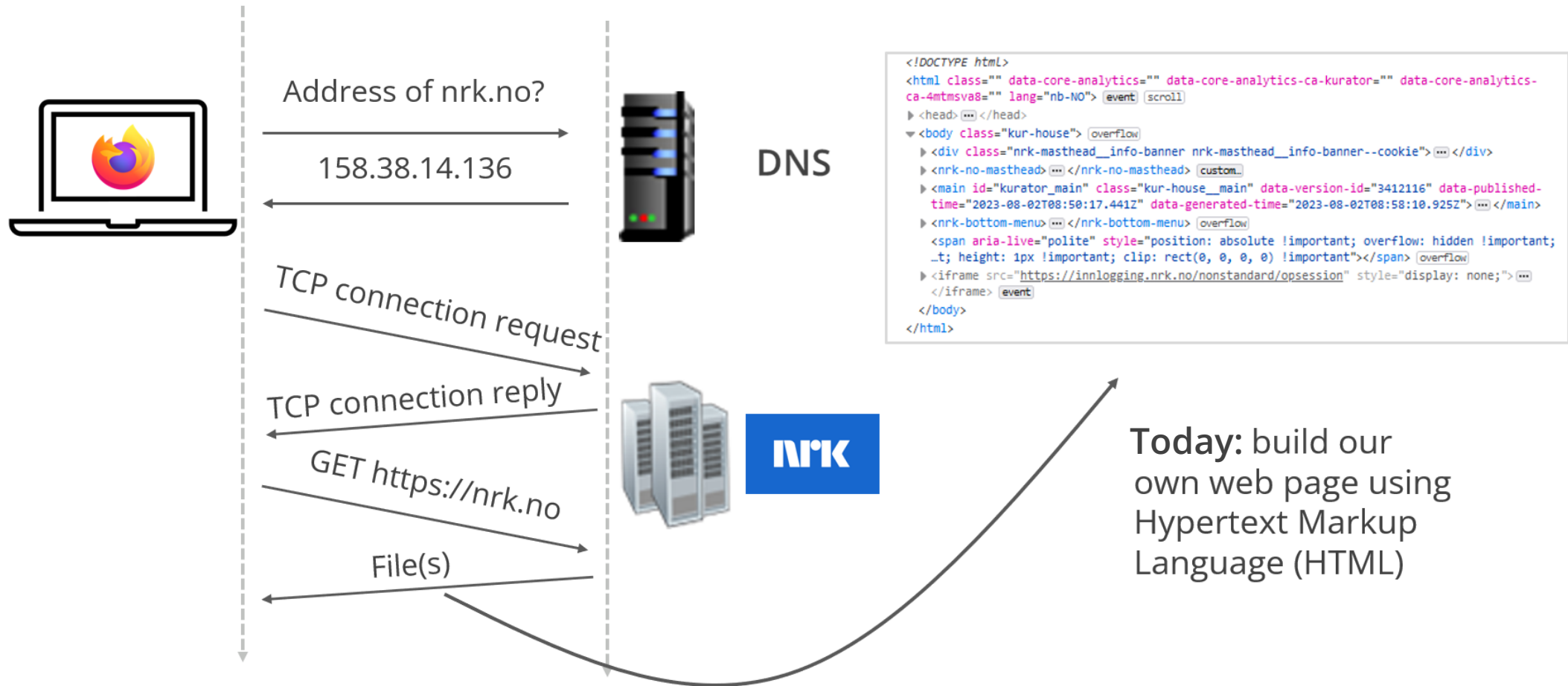
**Understand how websites are created and served**

What is HTML and how does it work?



**Build your own website and share it with the world**

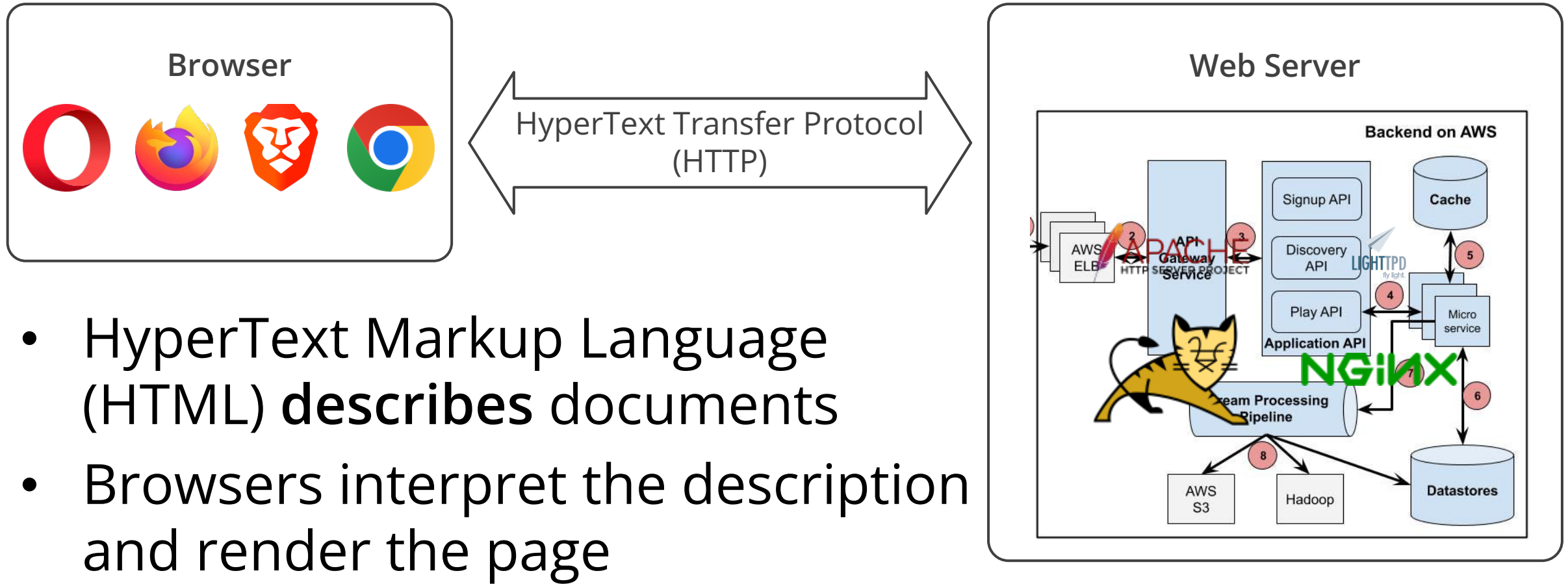
# Context from Day 1



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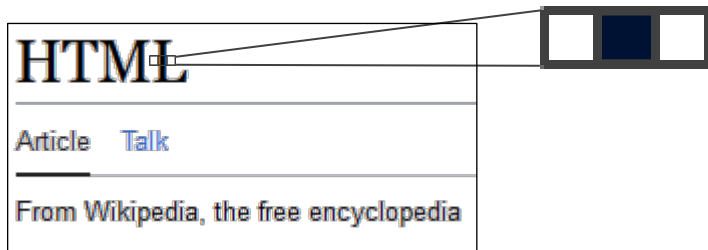
```
<!DOCTYPE html>
<html class="" data-core-analytics="" data-core-analytics-ca-kurator="" data-core-analytics-
ca-4mtmsva8="" lang="nb-NO"> event scroll
  <head> ... </head>
  <body class="kur-house"> overflow
    <div class="nrk-masthead__info-banner nrk-masthead__info-banner--cookie"> ... </div>
    <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



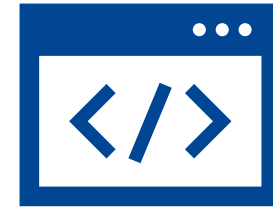
# Preparation – Get Firefox



## 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



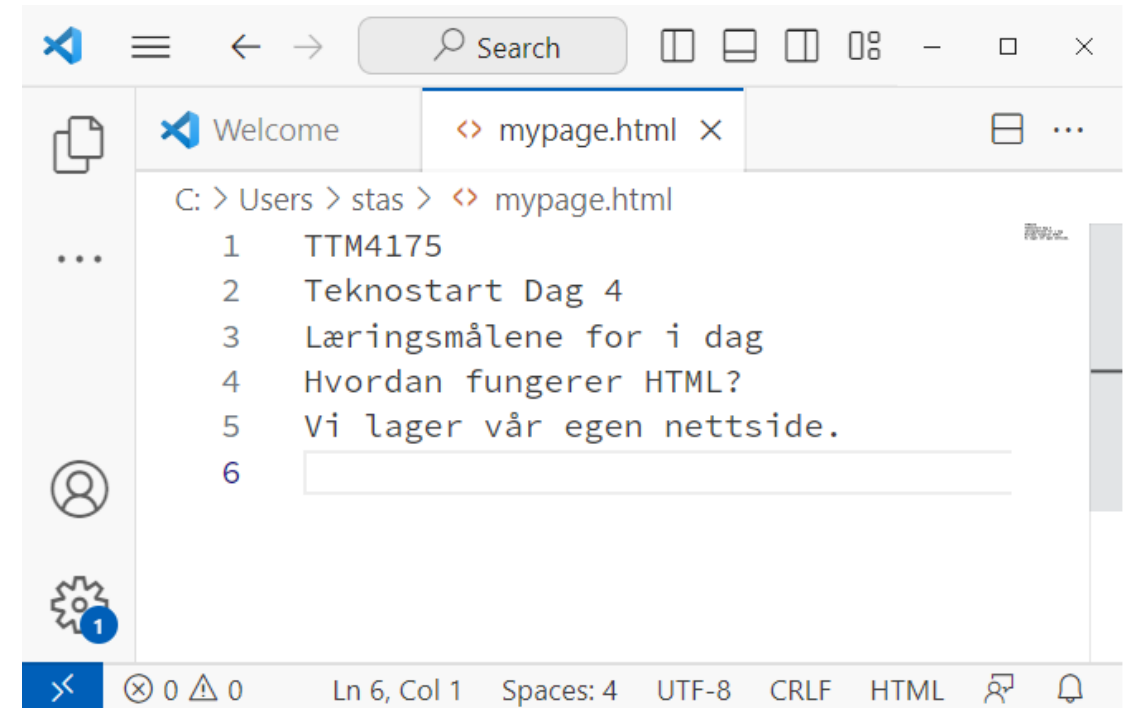
Notepad++



VS Code

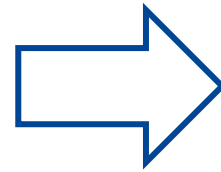


PhpStorm



# 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 validation<sup>1</sup>
- 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>
```

```
</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>
```

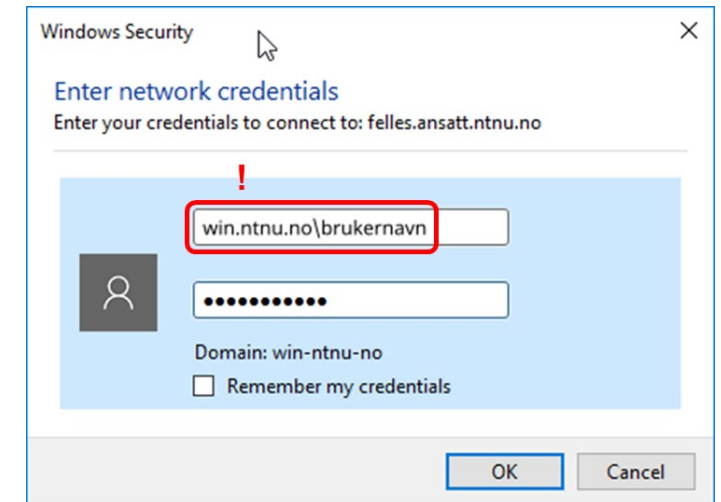
# Towards Publishing Your Site

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

Webområder:

Nettverksområde	Beskrivelse
\\webedit.ntnu.no\brukernavn	Nettverksområde for nettsiden din (for studenter og ansatte) på <a href="https://folk.ntnu.no">folk.ntnu.no</a> . 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!



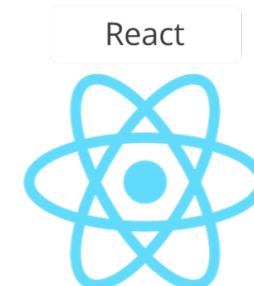
➔ Share the link to your page with me via Teams / email ([stanislav.lange@ntnu.no](mailto:stanislav.lange@ntnu.no)) and I'll list it at <https://s.ntnu.no/ts-pages>

# 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)

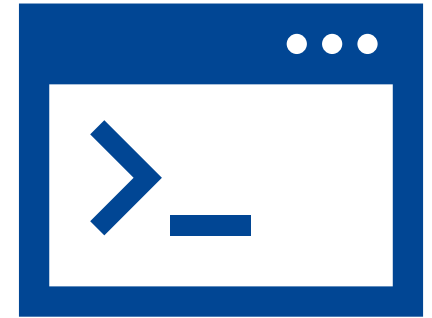
# Summary

- 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
- Check [ttm4175.iik.ntnu.no/unit-cli](https://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

