

# Frameworks and Architectures of the Web

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# About this Course

Practice-based subject

Modern Web Standards

Industry leading tools and practices

A small amount of design theory and practice

HTML5, CSS, JavaScript, TypeScript, React, AngularJS

Prior programming or Web experience: not required but  
strongly recommended

**HTML**



# Intended Learning Outcomes, BSc

understand and apply various web programming concepts, tools and techniques

develop a web-based user interface from existing server-side resources

use object-oriented features of web programming

create dynamic web sites and are able to validate their input data

# Intended Learning Outcomes, MSc

understand and apply various web programming concepts, tools and techniques as well as the principles of user interface design in developing dynamic web applications

develop and design a web-based user interface from existing server-side resources

use object-oriented features of web programming

create dynamic web sites that are effective in interacting with the visitors on the Web and are able to validate their input data

# Languages and Frameworks

The languages, technologies and tools that create the Web Experience.

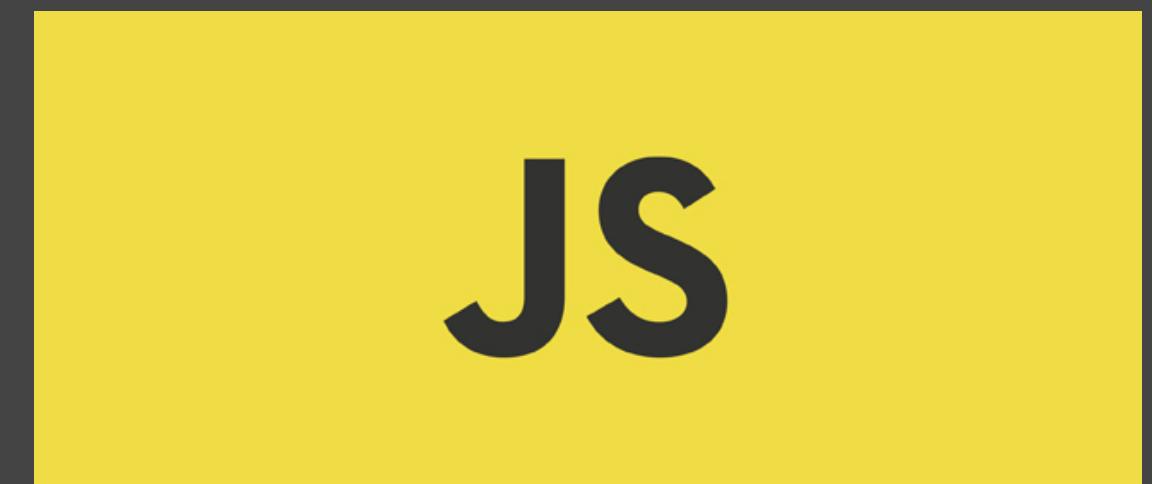
Core Technologies



HTML



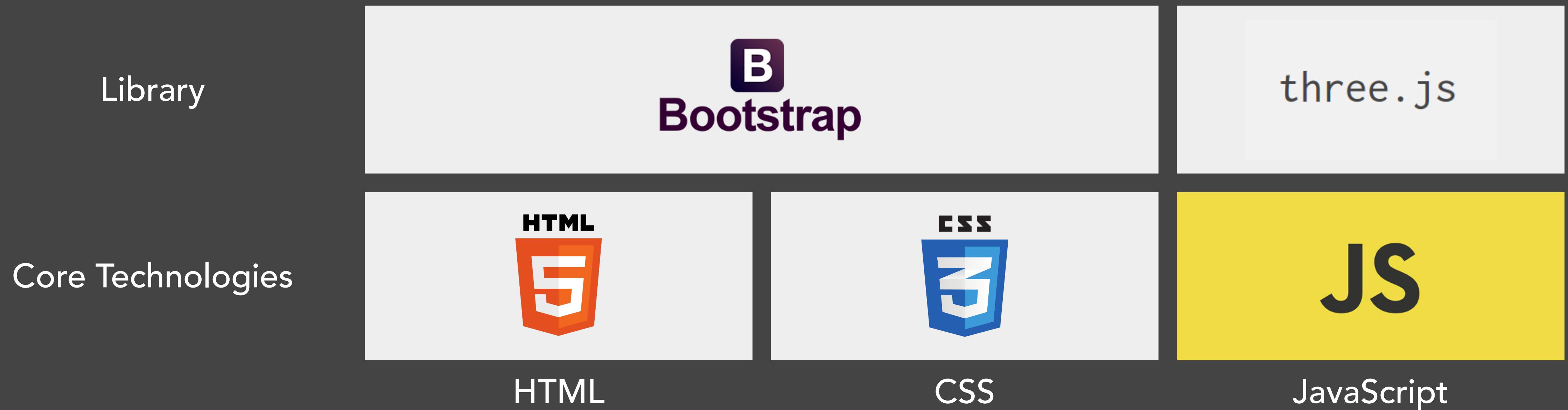
CSS



JavaScript

# Languages and Frameworks

The languages, technologies and tools that create the Web Experience.



# Languages and Frameworks

The languages, technologies and tools that create the Web Experience.



# Web Project

Design and implement a working website using WordPress.

You can either redesign an existing website or create your own portfolio site.

Your site should be responsive and be optimised for both mobile and desktop devices.

# Web Project - Design, Wireframes and Prototype

Use design, layout and prototyping tools to define the information architecture of their site, produce visual designs of each page

Produce an interactive prototype using Web-based prototyping tools.

Final deliverable is a clickable interactive prototype.

**No code will be written for this deliverable.**

UPGRADE NOW Tim Wray

# in + Tweeto Prototype v2

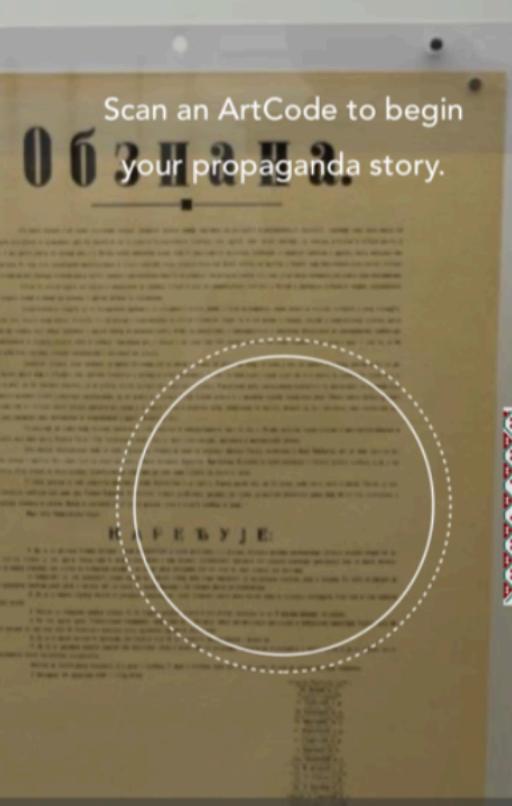
SCREENS WORKFLOW ACTIVITY COMMENTS ASSETS ...

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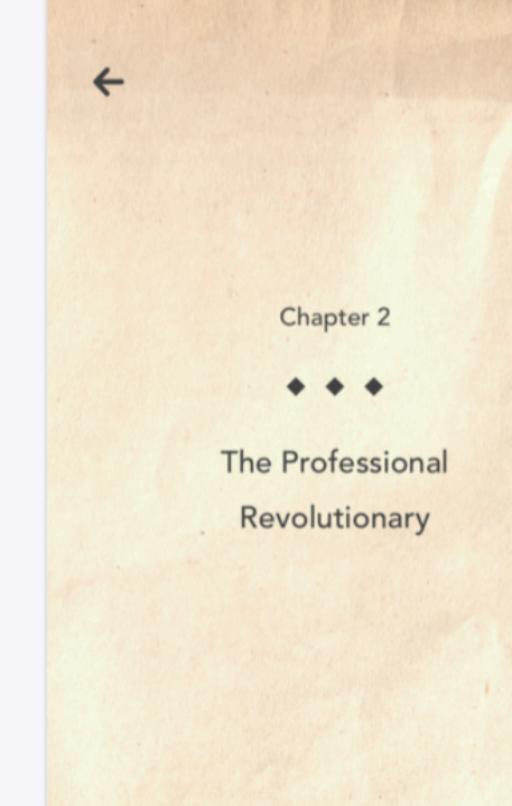
LOADING SCREEN (1)

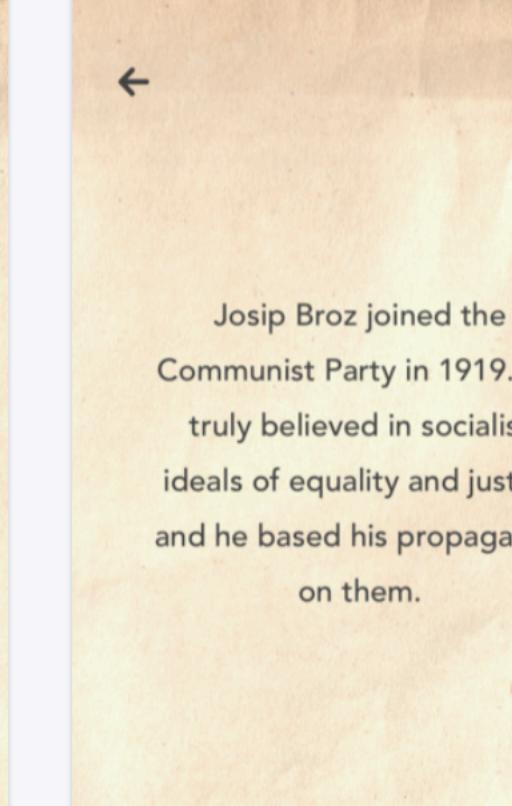
TUTORIAL (5)

CHAPTER 2 (32)

  
CH 2.1  
7 days ago

  
CH 2.2  
13 days ago

  
CH 2.3  
7 days ago

  
CH 2.4  
7 days ago

# Web Project - Implementation

Implement your designs, as a working, fully functional, WordPress-driven site

You are required to use HTML and CSS to layout the site, and implement these layouts as a custom WordPress theme so that the site's content can be deployed and updated.

The layouts also need to be responsive so that they are optimized for viewing on both mobile and desktop devices.

# Creative Implementation of a Web App

You are required to build a Web app in HTML5 and CSS3 that is built using React / Angular and/or creatively uses an API to process, present or otherwise interact with data on the Web.

For example, you could implement a creative photo browser using the Flickr API, a smart, clean modern interface for a Web-based Weather app using the OpenWeatherApp API or an Augmented Reality application written in React.

For this deliverable, you are assessed on your judgment, creativity and understanding of modern Web technologies to shape and interesting and engaging user experience.

# Course Outline

## Foundation

Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Introduction, HTML Syntax, Structure and Semantics	Interface Principles, Design Patterns and Aesthetics	HTML and CSS Preliminaries	CSS Layout & Positioning	Mobile and Responsive Design, Forms and Data Validation	Introduction to JavaScript	Document Object Model and Events in JavaScript	CSS3, Graphics and Media and Advanced JavaScript
Web Project - Design, Wireframes and Interactive Prototype						Web Project - Implement	

# Course Outline

## Frameworks

Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20
No Lecture (Easter Holiday)	Web Apps in React (Part 1)	Web Apps in React (Part 2)	TypeScript and Object-Oriented Programming	Web Apps in Angular (Part 1)	Web Apps in Angular (Part 2)	Augmented Reality in the Browser	No Lecture (End of Semester)
Creative Implementation of a Web App							
Web Project - Implementation							

# Ida Dilling: Personal Portfolio Site

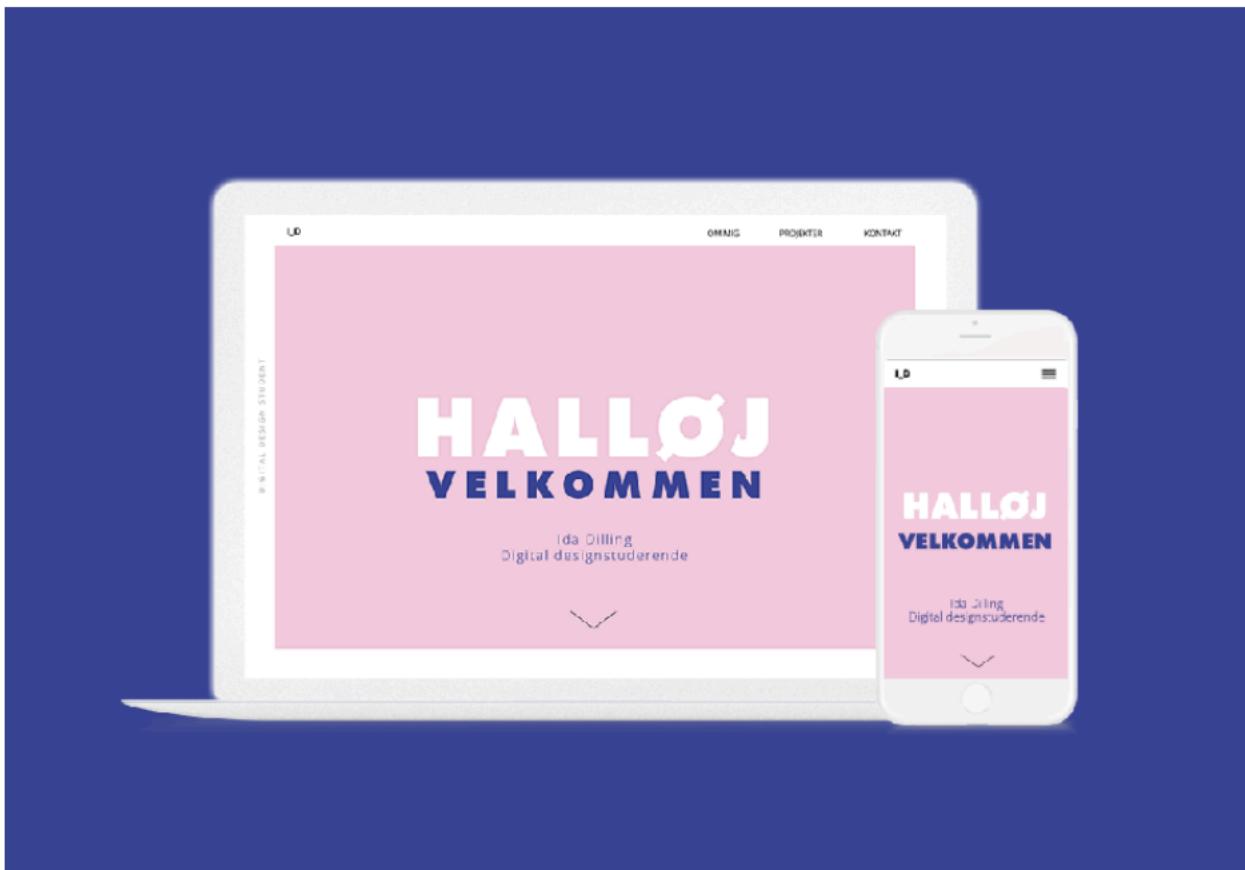
<http://idilling.dk/>

IDA DILLING

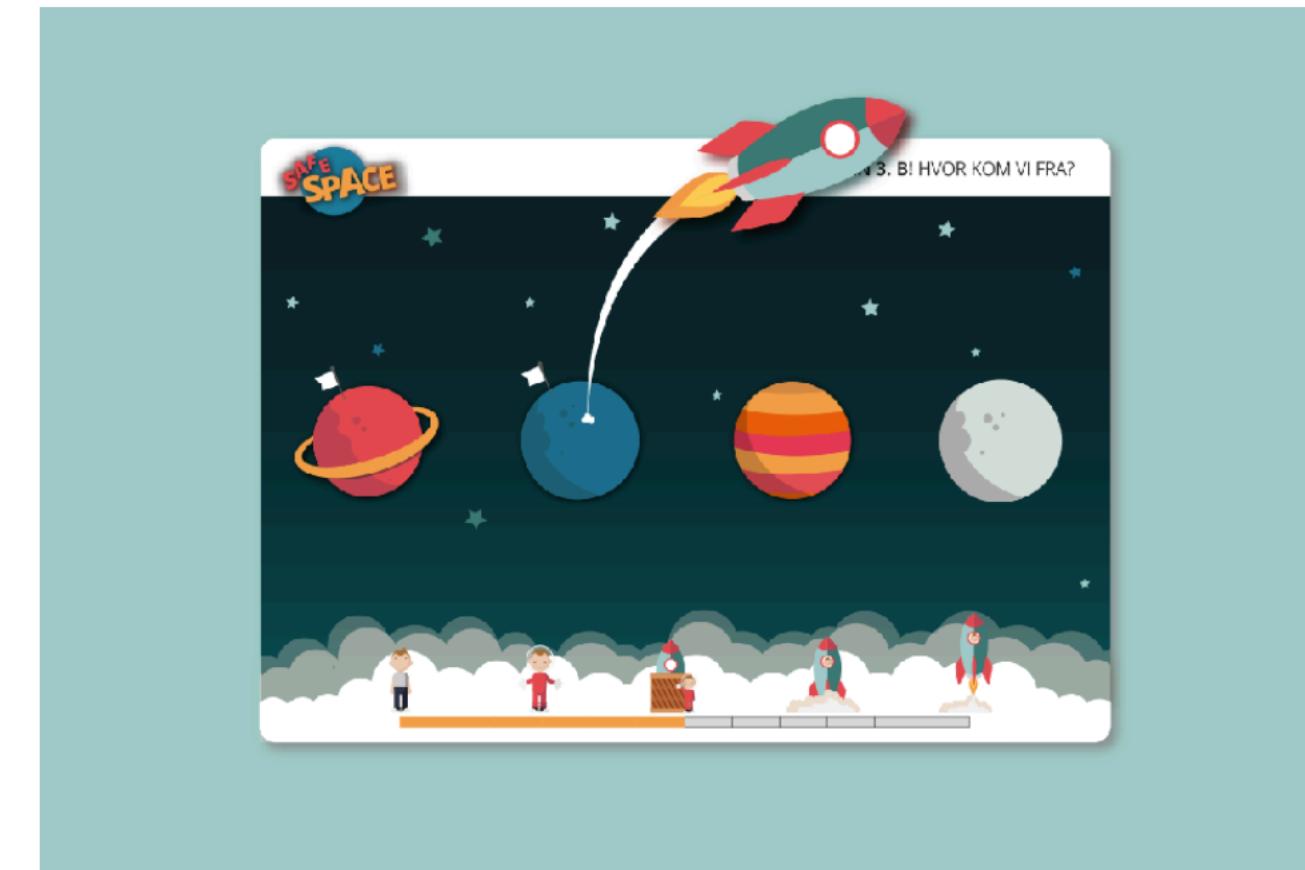
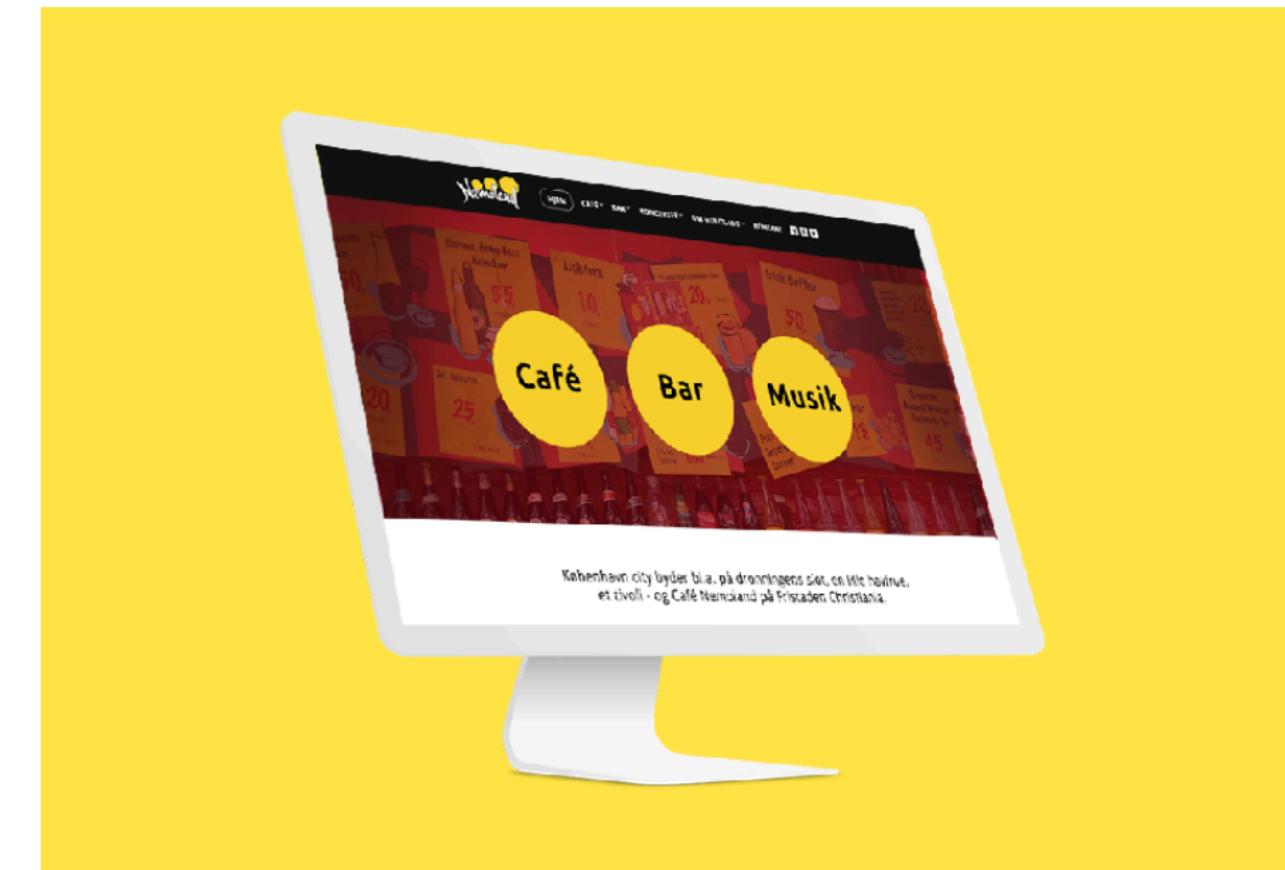
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DIGITAL DESIGNSTUDERENDE

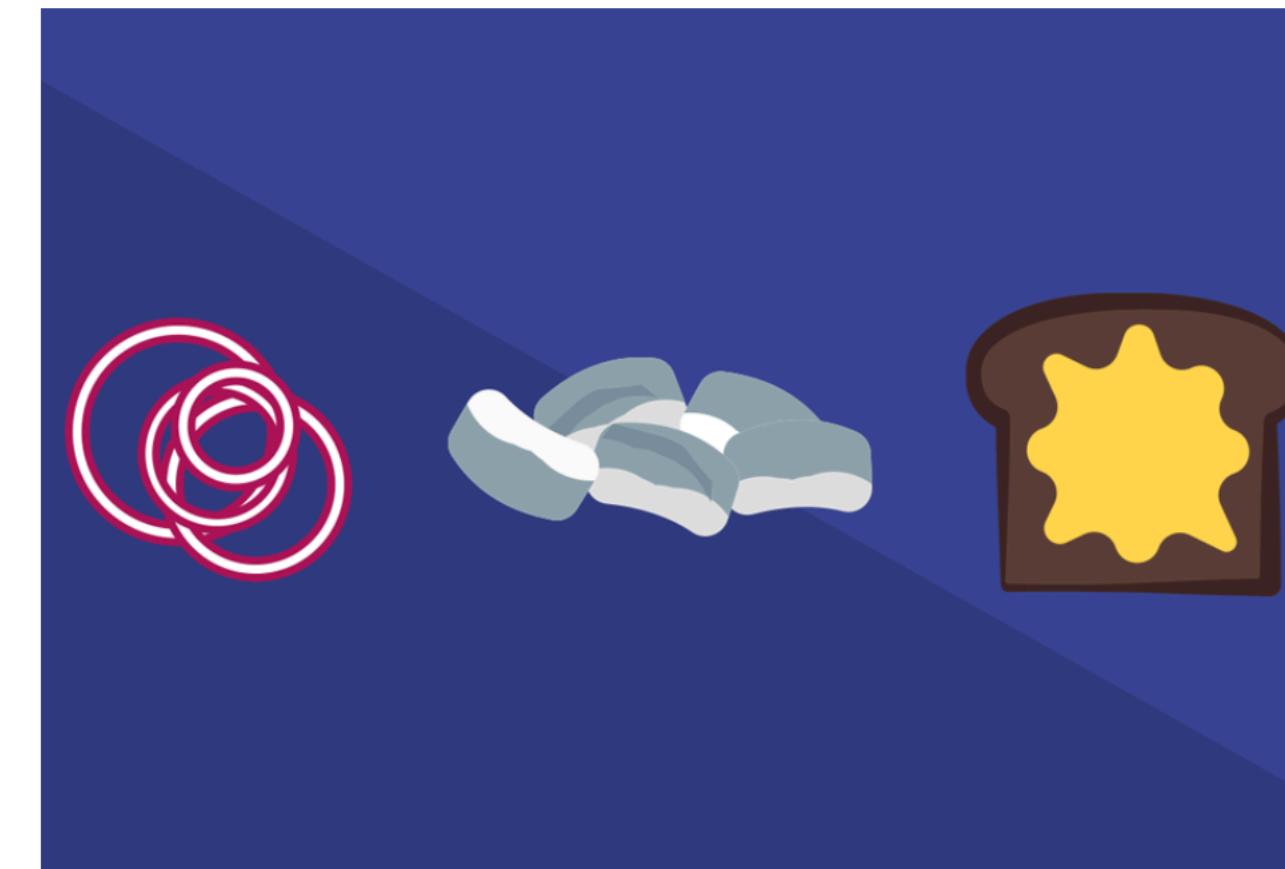
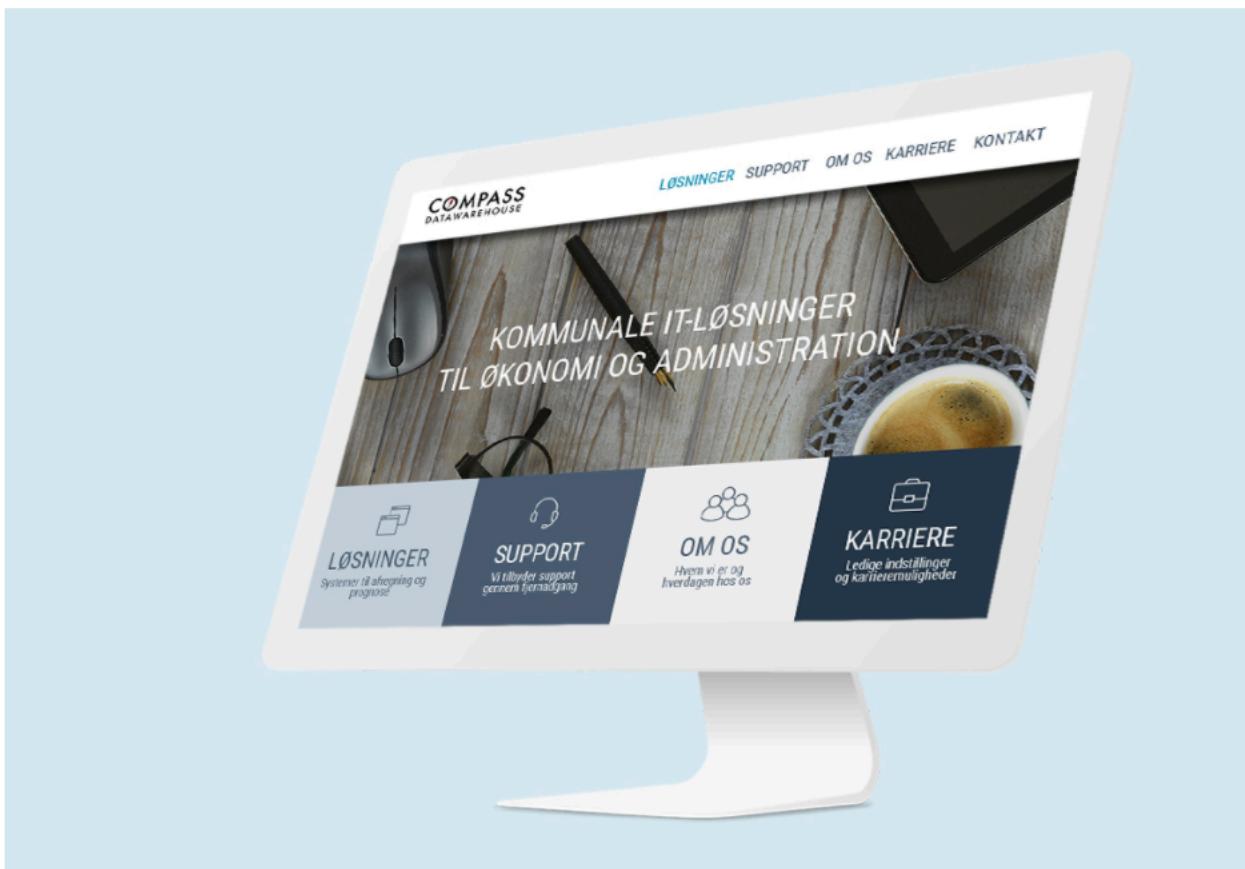


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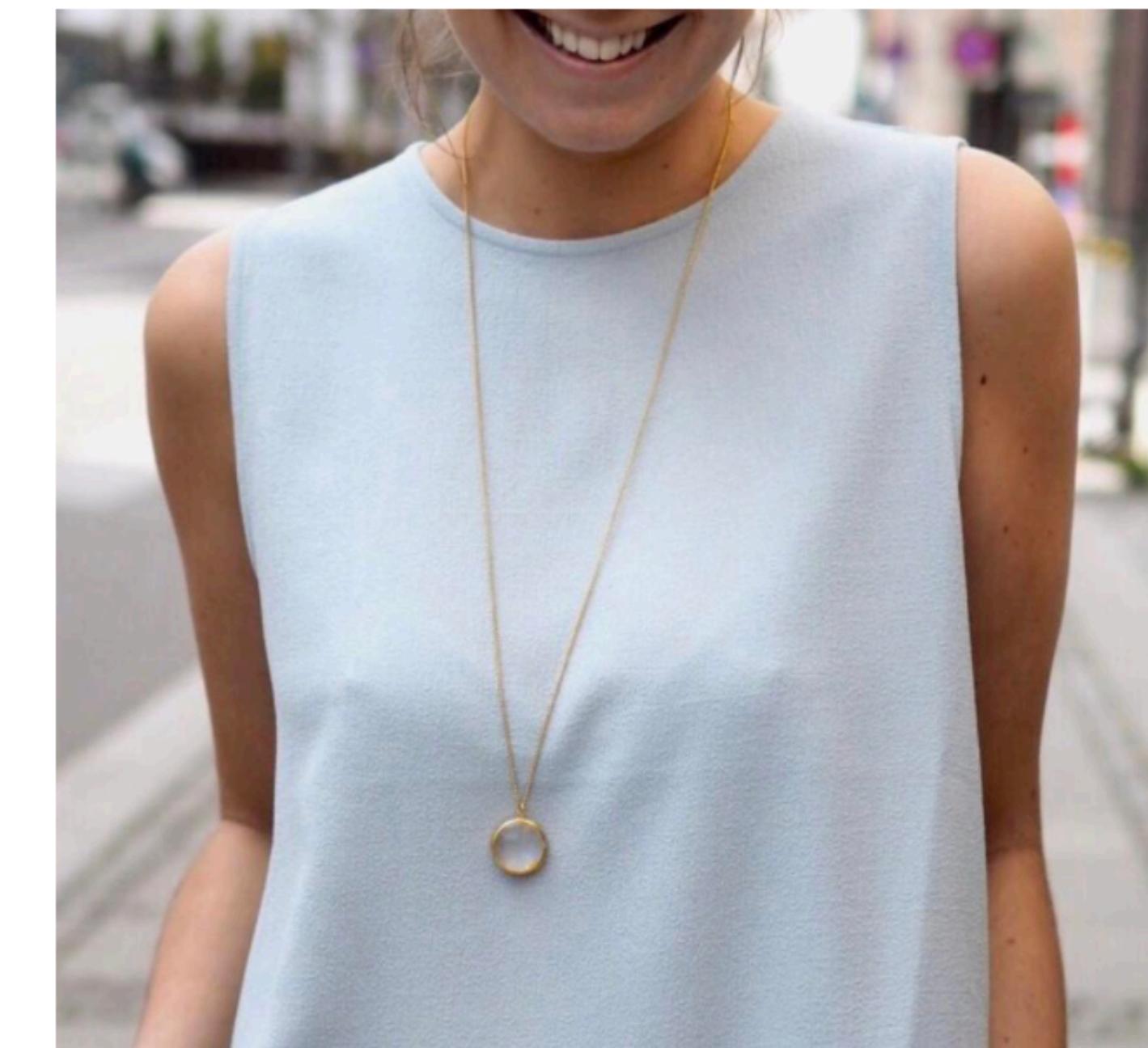
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# Kathrin Solveig Schmid Jonsson: Jewellery Store

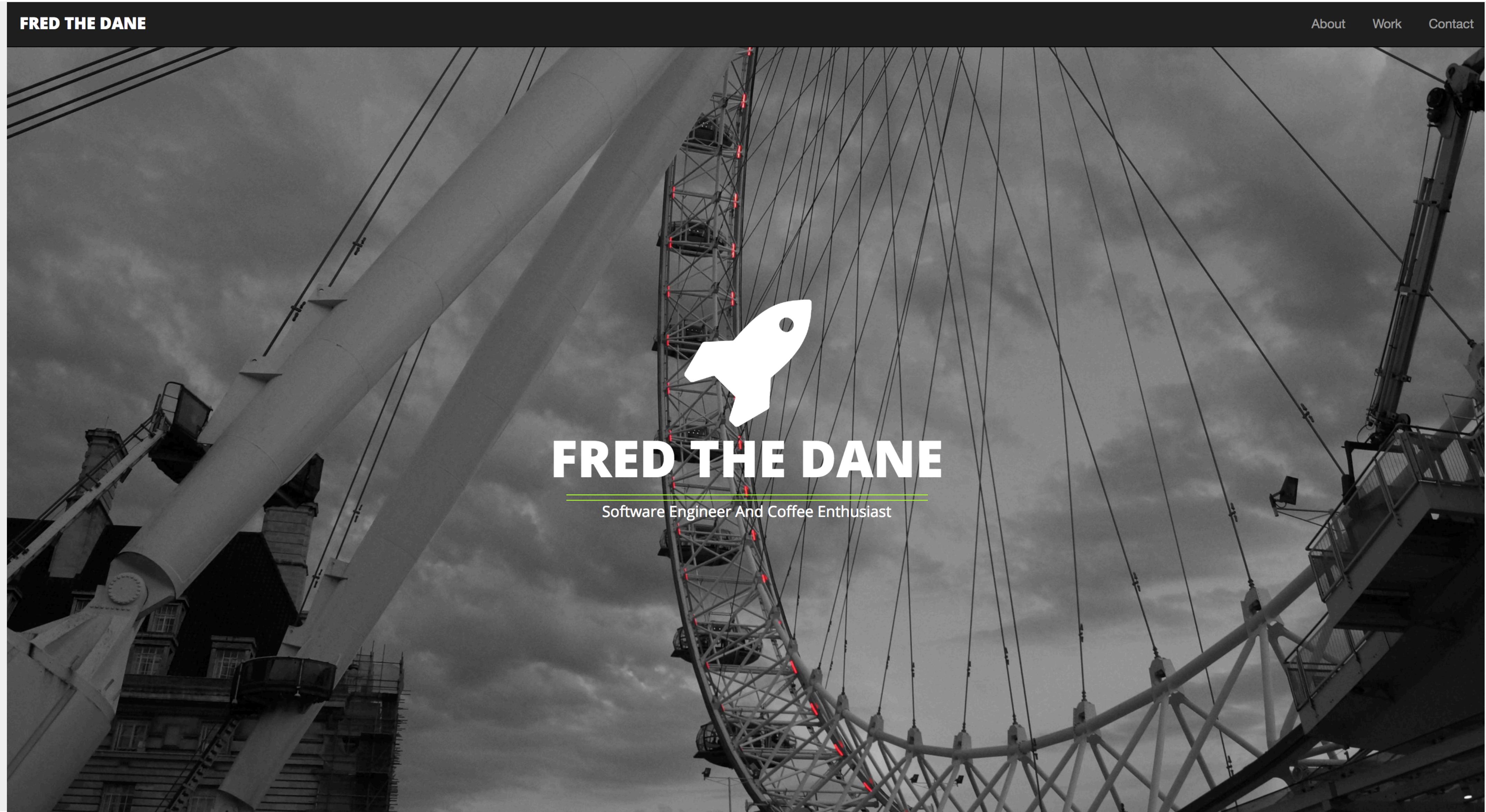
<http://itu.dk/people/ksoj/treasures/>

## STYLINGS



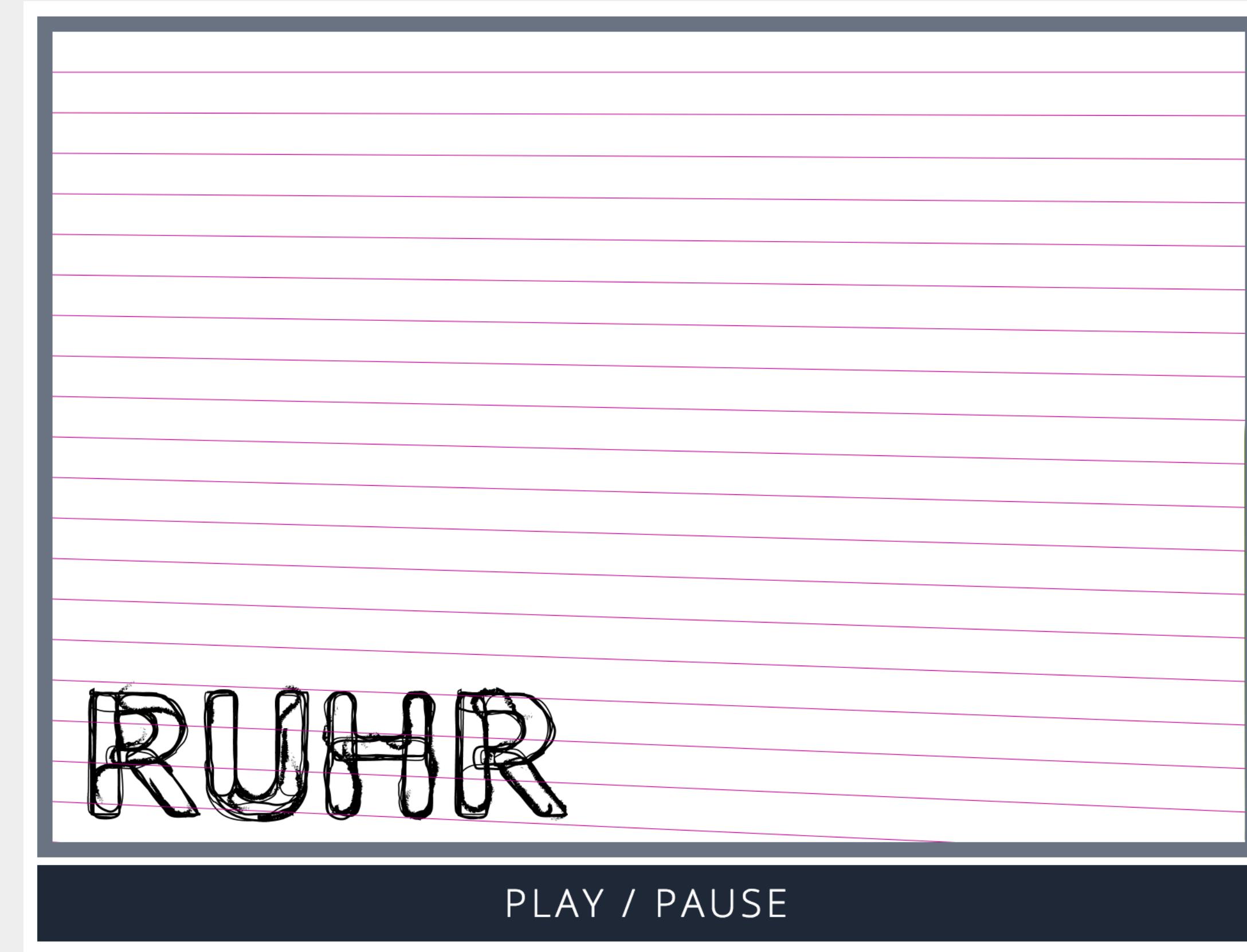
# Frederik Schou Madsen: "Fred the Dane"

<http://itu.dk/people/fscm/FAFW/wordpress/>



# Peter Jensen: Music Visualiser

<http://itu.dk/people/petje/web-app/>



# Ida Dilling: Alcohol-themed Creative Submission

<http://www.idilling.dk/isitaperolweather/>

# Is it Aperol weather?

When the sun's out it's time to mix up some Aperol.  
Aperol is a bitter Italian liqueur. Adding sparkling wine, a  
splash of soda and a slice of orange, you have a refreshing  
drink that tastes of sweet and bitter oranges, herbs and  
summer.

FIND OUT

**DEMO TIME!**

**HTML**



# Things you can do in the browser.

CSS3 - Effects, transitions and animations

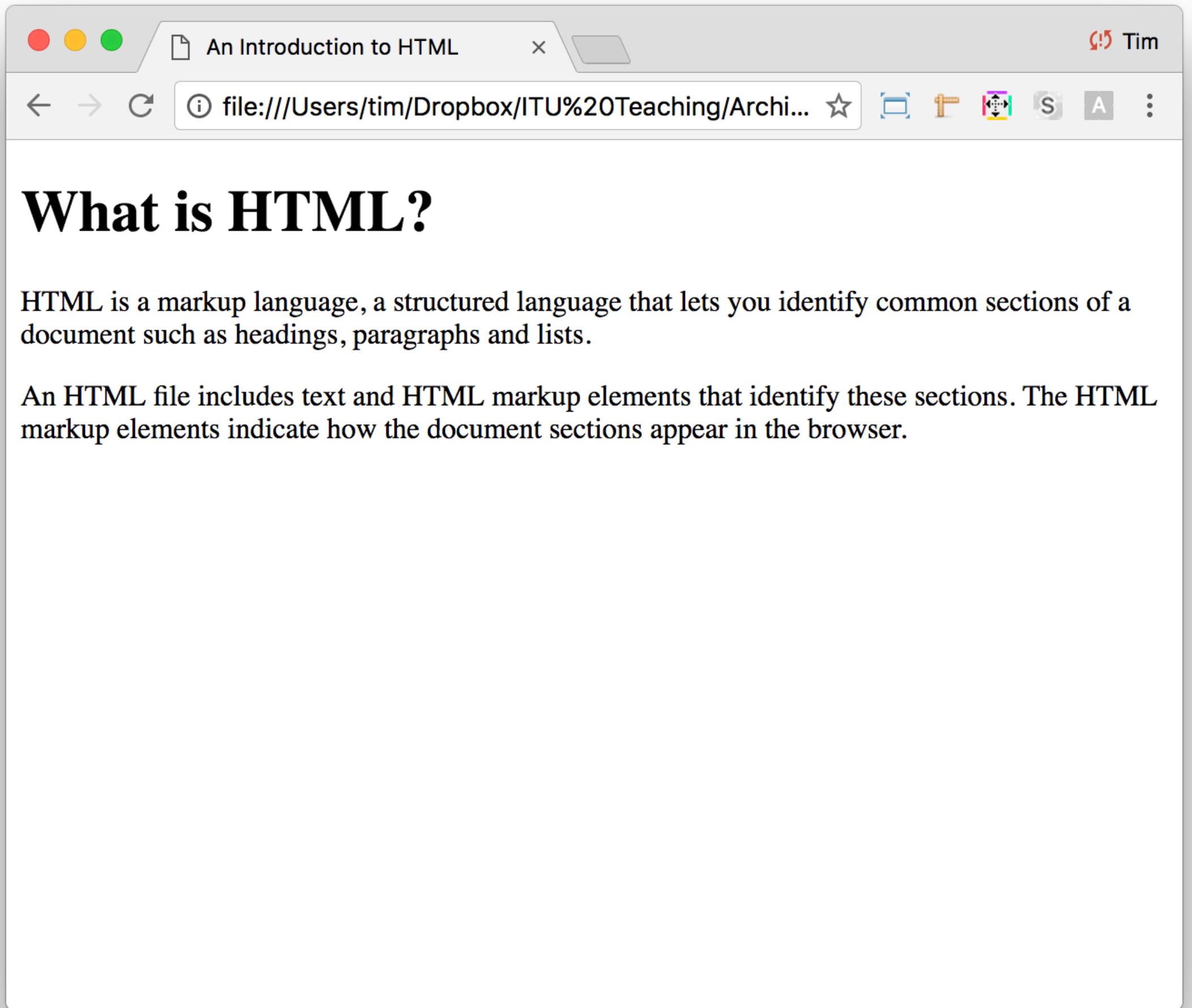
“Offline” Web Apps, local storage

Native Graphics / Audio / Video / 3D

Multithreading in Javascript using WebWorkers

Game like experiences in the browser using WebGL

Geolocation — “Facebook knows where you are.”



```
<!DOCTYPE html>

<html>
  <head>
    <title>An Introduction to HTML</title>
  </head>
  <body>
    <h1>What is HTML?</h1>
    <p>
      HTML is a markup language, a structured language
      that lets you identify common sections of a document
      such as headings, paragraphs and lists.
    </p>
    <p>
      An HTML file includes text and HTML markup
      elements that identify these sections. The HTML markup
      elements indicate how the document sections appear in
      the browser.
    </p>
  </body>
</html>
```

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    </p>
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</html>
```

**Head Section** The 'metadata' of the page.

**Body Section**

The actual visible content of the page.

```
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    </p>
  </body>
</html>
```

The page's title, usually appears in the tab.

A top-level heading element.

A paragraph element.

A paragraph element.

# <h1>What is HTML?</h1>

Start Tag

Content

End Tag

Start Tag <p>

Content It is a markup language.

End Tag </p>

# <h1>What is HTML?</h1>

Start Tag

Content

End Tag

Start Tag

<p style="color: red">

Content

It is a markup language.

End Tag

</p>

# Steamed Hams

<https://www.youtube.com/watch?v=Y4lnZr022M8>



# An Unforgettable Luncheon

<https://codepen.io/timwray87/pen/dJEvqp>

Your task is to watch the “Steamed Hams” video and write a script for that video in HTML.

The script has already been partially completed for you. You’ll need to complete the script up to the point where principle Skinner says “Hmmm ... Steamed Hams.”

Notice how the HTML elements are used to structure the document and dialogue. Notice the use of `<h1>`, `<h2>`, `<p>` and `<q>` elements. Why are they structured in this way?

**Pay attention to:** HTML Syntax, opening and closing tags, indentation and whitespace.

```
<h1>Steamed Hams</h1>
<h2>Opening Scene</h2>
<p>
    Chalmers: <q>Well Seymour I made it, despite your
    directions.</q>
</p>
<p>
    Skinner: <q>Ahhh, superintendent Chalmers welcome! I
    hope you're prepared for an unforgettable luncheon!</q>
</p>
<p>
    Chalmers: <q>Errghhh . . .</q>
</p>
<p>
    Skinner: <q>Ah!</q>
</p>
<p>
    Skinner: <q>Ah egads! My roast is ruined!</q>
</p>
<!-- Finish the dialogue here -->
```

# Questions?