Intro to Computer Science
Fall 2022

Lesson 5: Basic knowledge of CSS

Lesson Goals

- Understand how CSS can be used to design HTML documents
- Get an overview of basic CSS concepts
- Use the practice task to get creative and apply CSS on your own :)

Agenda

Section Content	Expected Time
Review and questions from last class	10-15 min
Overview of CSS	30-40 min
Class break	10 min
CSS Practice in Groups	45 min
Wrap-up	10-15 min

Review: Lesson 4

Are there any questions from the last session?

Overview of CSS

What is CSS?

- CSS = Cascading Style Sheets
- Language that describes the appearance of a document written in HTML
- Developed after HTML (1993, vs. CSS 1996)
- HTML structures the content of a webpage, CSS changes the appearance of the content

What is CSS ? (2)

- Browser applies CSS style declarations to selected elements to display them according to the style sheet
- A declaration contains properties and their values, which determine how a webpage looks
- One selector plus one or more declarations form a rule
- **What does “Cascading” mean?**

Example of a CSS rule:

Add CSS to HTML

- There are 3 ways to add CSS rules to HTML documents
  - Inline: Add rule directly to the HTML element
  - Header: Add rules within the HTML document in the <head> section
  - External file: Create rules in separate .css file and import it in the HTML document

- Inline: `<h1 style="color: blue">Hello world!</h1>`
- Header:

```
<head>
  <style>
    h1 {
      color: blue;
    }
  </style>
</head>
```

- External file:

```
<head>
  <link rel="stylesheet" href="style.css" />
</head>
```

Which of the 3 ways is preferred - and why?

Rule order in CSS

- Order matters in CSS!
- “Cascading” aka order of identical CSS rules:
  1. Inline has top priority
  2. For header and external, the lowest rule in the code has priority, across both, header and external file.
- If the rules are not identical, there are further order criteria aka “Specificity”

style.css

```
h1 {
    color: yellow;
}

h1 {
    color: green;
}
```

index.html

```
<!DOCTYPE html>
<html>
    <head>
        <style>
            h1 {
            color: blue;
            }
        </style>
        <link rel="stylesheet" href="style.css">
    </head>
    <body>

    <h1 style="color: orange;">This is a heading</h1>
    </body>
</html>
```

What color will “This is a heading” have?

Selectors in CSS

- CSS declarations can be applied to different kinds of selectors
  - We focus on elements, classes, ids and pseudo classes
- Element:
  - Any HTML tag can be used as selector

```
h1 {
  font-size: 20px;
}

p {
  color: green;
}

div {
  margin: 10px;
}
```

Selectors in CSS (2)

- Class
  - In HTML, we can assign different classes to our elements
  - Each element can have multiple classes
  - And each class can also be applied to multiple elements as well

HTML:

```
<div class="container">
  <h1>This is heading</h1>
</div>
```

CSS:

```
.container {
  background-color: blue;
}
```

Selectors in CSS (3)

- Id
  - ids make it possible to style a single element per document
  - An id should be unique across a HTML file

HTML:

```
<div>
  <p id="highlight">Some paragraph</p>
</div>
```

CSS:

```
#highlight {
  color: green;
  font-size: 16px;
}
```

Selectors & specificity

- Pseudo classes
  - a keyword added to a selector that specifies a special state of the selected element
  - Defined by using ":"
  - Can be combined with elements, classes and ids
- Selector order: id > class > element

```
h1:hover {
  color: red;
}
```

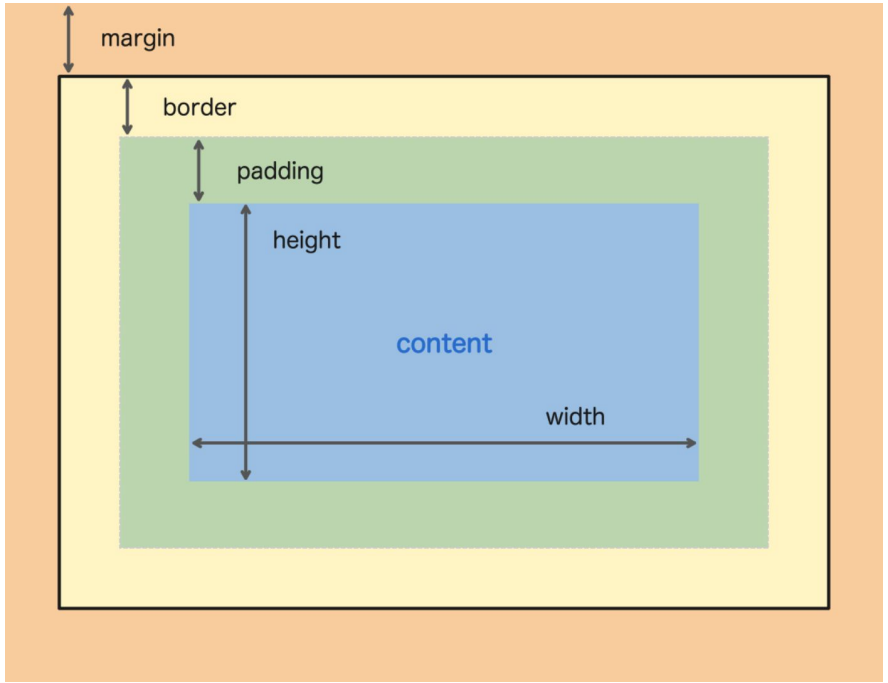
What event will make such a h1 heading red?

Colors in CSS

- In CSS, colors can be described either via words or hexadecimal numbers, aka RGB codes - **R**ed **G**reen **B**lue
- E.g. `red=#ff0000`, `green=#00ff00`
- Your browser is able to describe the color of a web element (F12 key)
- An online color picker helps with finding hexadecimal codes: https://www.w3schools.com/colors/colors_picker.asp

CSS Box model

- Defines layout of element and its content
- CSS properties: `padding`, `border`, `margin`
- Every HTML element follows this model



10 Min Break

Time to practice!

Practice task

- …
- Some properties you may want to try out:
  `color`, `background-color`, `width`, `height`, `border`, `padding`, `margin`, `font-style`, `font-size`
- Use Google and w3schools.com for help (or just ask us!)

Advanced CSS

- There's much more to CSS than we could cover today:
  - Font units: `px`, `pt`, `em`, `vw`, …
  - `display` and `visibility` properties
  - Functions, Animations, Flexbox and much more…
- Feel free to try out these features and play with them. Especially later in the project phase :)
- See **Extra Resources: CSS** in Classroom for more material

Wrap up

- Are there any questions?
- CSS is quite complex, so don’t worry. It can be confusing even for experienced developers
- Next week: ???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do widzenia
adeus
hej då
äddi
Khodâfez
FARVEL
SAYÔNARA
ANTIO
HAMBA KAHLE
ADÉU
Aloha
kwa heri
ahn nyung hee ke se yo
sara zwakanaka
ДО СВИДАНИЯ
viszontlátásra
HOŞÇA KALIN
saña
adiós
Баяртай
Goodbye
la revedere
SAWATDII
auf Wiedersehen
paalam na po
VALE
selamat tinggal
salutu
au revoir
Bless
phôp khan mai
hoşça kalın
tot ziens
xin chào tạm biệt
SALUTU
NA SHLEDANOU
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