Cascading Style Sheets (CSS) and Bootstrap

Web Development and Security (ZEIT3119)

Week 2

Dr. Reza Rafeh

Review Question

What is HTML?

HTML stands for Hypertext Markup Language. It is used to create and display web pages. It can make text more interactive

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Review Question

What is the structure of an HTML document?

```
<!DOCTYPE html>
<html>
    <head>
        <title>
        </title>
    </head>
    <body>
    </body>
</html>
```

Review Question

What are the tags used to create table in an HTML document?

```
<table>
    <tr>  table row </tr>
    <th> table header </th>
    <td> table data </tr>
</table>
```

Review Question

What is the difference between HTML Elements and tags?

HTML Elements:

➢ Paragraphs

➢ Links

➢ Text boxes

HTML tags

HTML elements communicate with the browser how to represent the text and become HTML tags when enclosed within angular brackets <>

Outline

➢ **Progressive Enhancement**

➢ **Introduction to CSS**
  ➢ CSS
  ➢ Syntax
  ➢ Document Object Model (DOM)

➢ **CSS Basics**
  ➢ Typography
  ➢ Images
  ➢ Background
  ➢ List Markers

➢ **Bootstrap**
  ➢ Why Bootstrap?
  ➢ Grid System
  ➢ Style Classes

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Progressive Enhancement

➢ **What is Progressive Enhancement?**

  ➢ A layered approach to web design where focus is put on content, the user, and accessibility.

    ➢ Create a functional separation between HTML, CSS, and JavaScript.

    ➢ Three layers: *structure*, *presentation*, and *behavior* of the web.

  ➢ **Structure**: mark the content with semantic and meaningful HTML5 elements.

  ➢ **Presentation**: instruct how the content to be rendered using CSS styles.

  ➢ **Behavior**: define the interaction between users and the web using JavaScript.

➢ **The layers do not touch each other , yet they are all integrated!**

  ➢ As you move up the ladder, the next layer is dependent on the previous.

    ➢ *CSS* styles its selectors based on *HTML elements/classes/ids*.

    ➢ *JavaScript* responds to user interaction (with *HTML elements*) and manipulates the web presentation (*CSS*).

Illustration by Dave Stewart

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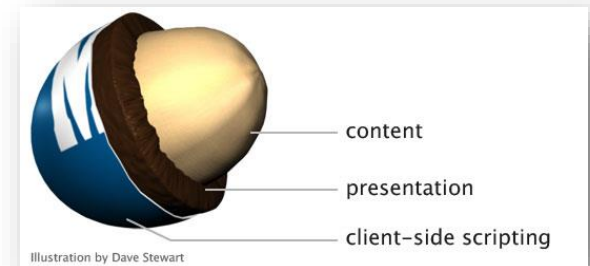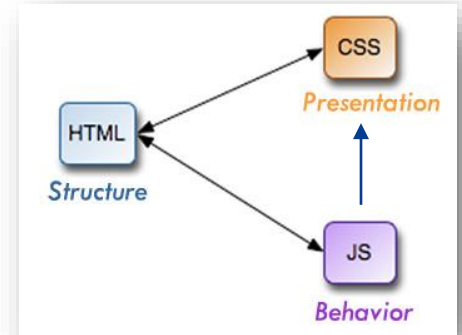
Progressive Enhancement

Purpose

➢ **Improved accessibility**

  ➢ Make content consumption easy to everyone.

  ➢ The content must always be accessible, no matter what!

  ➢Removing each layer from top to bottom <u>will not lose the content!.</u>

  ➢All users with limited bandwidth, disabilities or browsers with certain features turned off.

  ➢*If the browser has <u>JS turned off</u>, the user will not see cool animations but can still read to the content.*

  ➢ Keep your HTML clean, meaningful and semantic (friendly to search engine and screen reader).

➢ **Better performance and reusability**

  ➢ Keeping the layers in separate files guarantees that files are only downloaded when necessary.

  ➢<u>.js file will not be downloaded</u> if JS is disabled (saving bandwidth).

  ➢ Layers are functionally separated means they can be reused in similar projects.

Structure Layer

Structure adds meaning

➢ **Human can understand raw texts, but not the machines.**

    ➢ Lay the content out, structure it in a meaningful way with HTML.

        ➢Divide documents into logical sections by <section>, <main>, <aside>
or <div>

        ➢Mark up the headings with <h1> … <h6> to create hierarchy.

        ➢Paragraphs >> <p>, lists >> or <ul>, navigation links >> <nav>,
group related content >> <article>

```html
<header class="article-header">
    <h1>Barack Obama's Last Phone Call</h1>
</header>

<p class="article-teaser-text"> On his final full working day as U.S. President,
Barack Obama took to the phone one last time - and called Angela Merkel.</p>

<div class="article-meta row">
    <ul class="article-authors">
        <li> Handelsblatt Global Staff </li>
    </ul>
</div>

<div class="col-sm-4">
    <time datetime="2017-01-20T10:02:00+01:00"> 20. January 2017, 10:02 </time>
</div>
```

```html
<figure>
    <img src= ...>
    <figcaption> Barack Obama logged his final world-leader phone call on Thursday.
    Source: DPA
    </figcaption>
</figure>

<p>According to the White House, it was a very deliberate choice:
 After eight years of friendship and partnership, Barack Obama noted it
 was only fitting to make Angela Merkel the last foreign
 leader he would make a phone call to as acting U.S. president.</p>
<p>Mr.
 Obama bid farewell to Ms. Merkel and her husband Joachim Sauer and
 thanked both of them for their friendship and efforts to deepen the
 partnership between Germany and the United States, according to a
 readout from the White House.</p>
```

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Presentation Layer

CSS Styling

➢ CSS is specialized for visual styling of HTML elements

   ➢ *Much faster than JS for doing the same styling task.*

   ➢ Use selectors to target HTML elements and apply styles.

HTML + CSS = Page Rendering

**HTML
mark-ups**

+

**CSS
styles**

=

**Page rendered in
Browser**

Behaviour Layer

JavaScript adds behaviours

➢ **Use JS only for adding behaviour**

   ➢ JS is normally used to smooth out interactions, make *AJAX calls*, modify *HTML*, and for *animation*.

➢ **Progressive Enhancement**: Everything must be fully functional without JS

   ➢ JS is nothing than a luxury.

   ➢ If something can be done by CSS, don't use JS.

Benefits of Progressive Enhancement

➢ **Logical organization of the website** (file structure)

➢ **Better performance**

➢ External CSS and JS files are cached in memory after the first visit

➢ This saves bandwidth, speeds up the page load time and minimize HTTP requests.

➢ **Better scaling**

➢ Adding features and changing the web design is quick and easy.

➢ Support collaborative development (teamwork in which content, CSS and JS can be worked in parallel)

➢ **Good support for Responsive Design**

➢ **CSS Media Query** can make the same HTML document scale differently in response to changes in screen size (multiple css files for different media types)

➢ **Great mobile experience**

➢ JS can add device-specific behaviors to the website (sensors, touch interface).

Web Planning

Target Audience

➢ Are you targeting specific audience (kids, students, seniors) or everyone?

  ➢**What are goals and purposes** (research, shopping, hobbies, work)?

  ➢**The web design** should appeal to and meet the needs of the target audience.
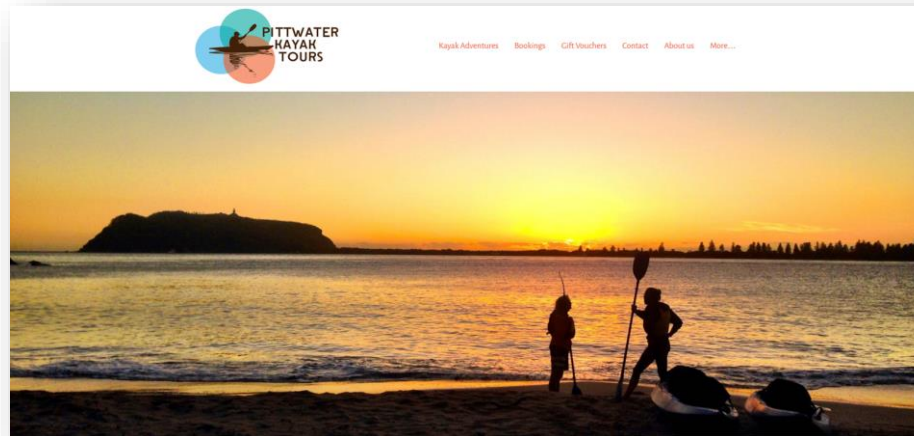
TRAVEL + LEISURE: The compelling graphic draws you in and invites exploration.
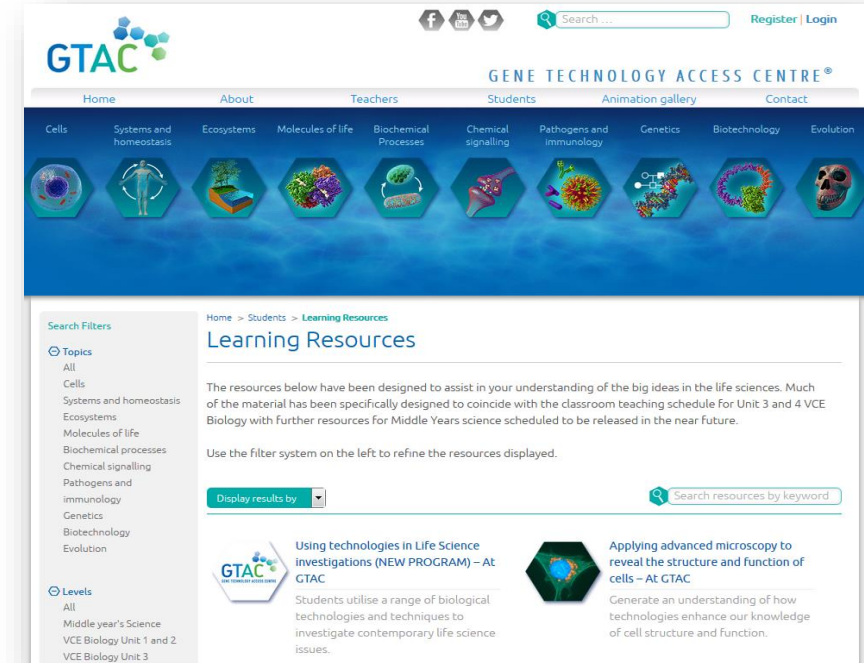
RESEARCH + SCIENTIFIC: Text-intensive website immediate offers numerous choices so that you can get down to work quickly

Web Planning

Target Devices

➢ **Browsers**

  ➢ Web design should look great in all major browsers.

  ➢ Progressive enhancements

  ➢**First**, ensure the web design to be properly rendered in the **commonly used browsers**

  ➢**Then**, add enhancements with **CSS / JavaScript and other new technologies** in **most recent versions**.

➢ **Screen Resolution**

  ➢ Responsive Web Design (one site for every screen!)

  ➢The web design is responsive to screen size changes to ensure the best user experience.

  ➢Design items **scale** with the screen size and **rearrange** themselves at break points.

Most Popular Browsers in 2021

Browser	%
Chrome	64.08%
Safari	19.40%
Samsung Internet	3.49%
Firefox	3.34%
Edge	3.18%
Opera	2.24%
UC Browser	1.39%
IE	0.64%
Android	0.45%
Other	1.79%

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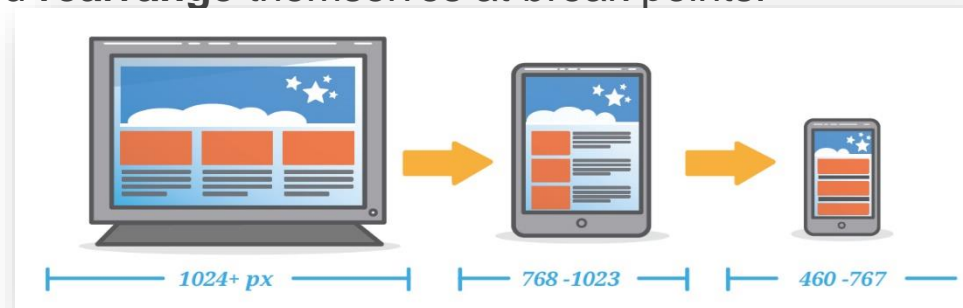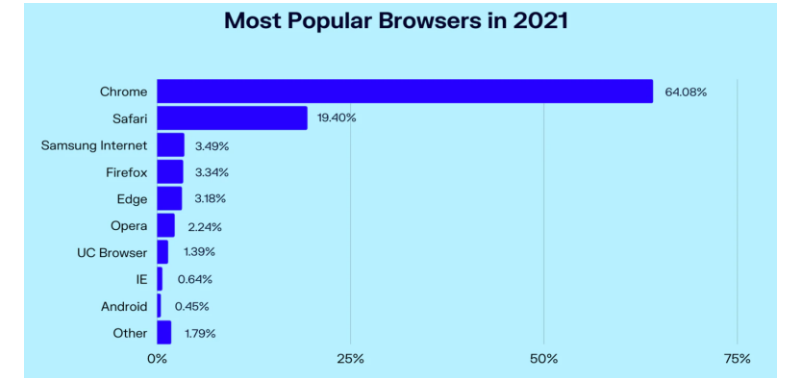
CSS - Cascading Style Sheets

Overview

➢ **What is CSS?**

- ➢ A cross-platform **styling** **language** developed by W3C to **describe the presentation** of HTML documents (*colors, layout, fonts*).

- ➢ **HTML** is used to **mark up** content.; build the block content of the webpage

➢ **Purpose of CSS**

- ➢ Apply **typographical styles** (text formatting; font size)

- ➢ Configure page **color** and **layout**

- ➢ **Separate presentation from structure/content**

  ➢Maintainability - styles can be modified without affecting structure/content

  ➢Effectiveness - a single CSS file controls styles for multiple pages.

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Advantages of CSS

➢ Greater consistency in design.

➢ Easier to maintain and update.

➢ More formatting options.

➢ Lightweight code.

➢ Search engine optimization benefits.

➢ Faster download times.

➢ Ease of presenting different styles to different viewers.

➢ Greater accessibility.

CSS

Types of CSS code

➢ **Inline CSS (element-specific styles)**

　➢ Applies to a specific <u>HTML element</u> (style **attribute** of HTML tag)

```
<p style="color: red">How are you?</p>
```

➢ **Embedded CSS (page-wide styles)**

　➢ Applies to a <u>single page</u> (<style> **tag** inside <head> tag)

```
<head>
  <style>
    p {
        color: red;
    }
  </style>
</head>
<body>
  <p>How are you?.</p>
  <p>Weather is great!<p>
</body>
```

➢ **External CSS (site-wide styles)**

　➢ Applies to <u>all HTML pages</u> within the same domain (**separate file** + <link> tag in <head> tag)

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

</head>
<body>
    <p>Weather is great!</p>
</body>
```

```
p {
    color: red;
}
```

index.html　　　　　　style.css

CSS

CSS External Style sheet

➢ Applying CSS external sheet to the internet explorer
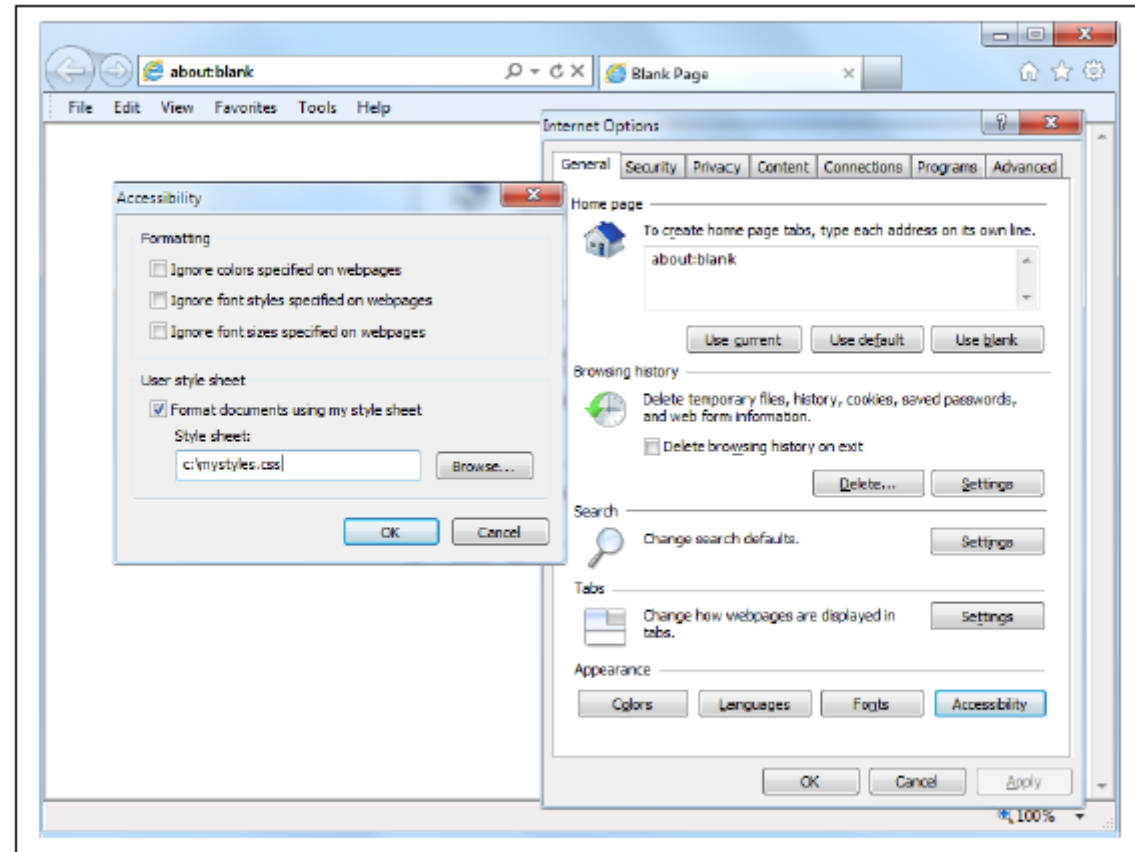
Figure 18-2. Applying a user stylesheet to Internet Explorer

CSS Syntax

Style Basics

➢ **Basic CSS Rule**

➢ **Syntax**

➢ Select target area in HTML document (**selector**)

➢ Describe the rule (**declaration**)

➢ **Selector**

➢ Element selector (based on element type): apply to all `<p>` elements in a page

➢ Class selector (more specific): apply to certain `<p>` elements in a page

➢ ID selector (unique for each page): apply a unique `<p>` per page

➢ **Declaration**

➢ Each property:value pair requires a declaration, separated by ;

➢ No space between value and unit (e.g. 1px)

➢ **Inline CSS rule**

➢ No selector is required

➢ Declarations are wrapped in double quotation

```
<p style="color: red">Weather is great!</p>
```
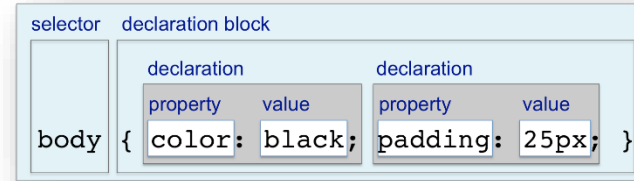
```
<!DOCTYPE html>
<html>
<head>
<style>
p{
  background-color:lightyellow;
  padding:1em;
  color: blue;
  }
p.center {
  text-align: center;
  color: red;
}
p#bottom{
font-style: italic;
}
</style>
</head>
<body>

<p>WELCOME </p>
<p class ="center">It's Winter! </p>
<p id = "bottom"> It is Cold </p>


</body>
</html>
```

WELCOME

It's Winter!

It is Cold

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CSS

Updating a CSS Style

➢ To update a style

   ➢ **Inline CSS**: update CSS code in every element

   ➢ **Embedded CSS**: update CSS code in every page head section.

   ➢ **External CSS**: modify the css file or link the pages to the correct CSS file

     ➢<link rel="stylesheet" href="css/styles.css">

     ➢**rel attribute** specifies the relationship between the current document and the linked document/resource.
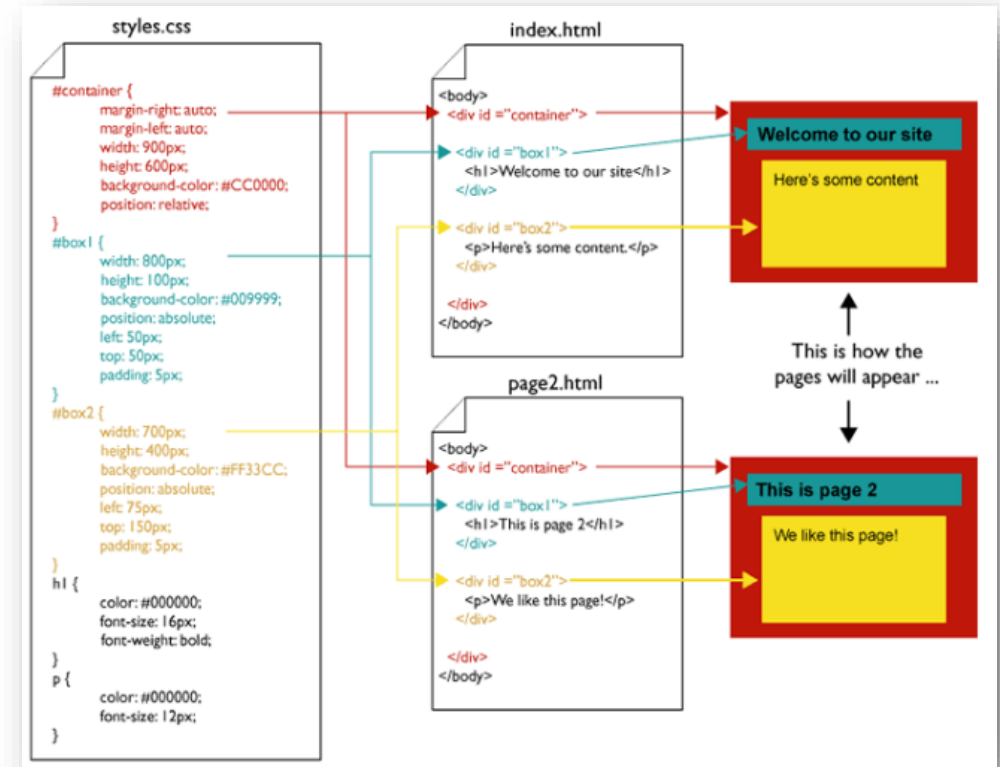
CSS

`div` and `span`

➢ **To style a generic area**

  ➢ To target a **block area** that includes other elements

    ➢ Make a **container** <div class/id=…> that contains other element

    ➢ Style the class/id associated with that div.

    ➢ This div container is solely for **styling purpose**

  ➢ To target an **inline area** (part of a text)

    ➢ Use the **inline** <span class/id=…> to capture the part of the text

    ➢ Style the class/id associated with that span.

    ➢ This span container is solely for **styling purpose**

```
<!doctype html>
<html>
<head>
<meta charset="utf-8">
<title>Untitled Document</title>
<style>
        .main-content {
                color: blue;
        }
        .special {
                text-transform: uppercase;
                font-weight: bold;
        }
</style>
</head>

<body>
<div class="main-content">
        <h1>Welcome</h1>
        <p>This is Web development and <span
class="special">Security</span> Class. </p>

</div>
</body>
</html>
```

Welcome

This is Web development and **SECURITY** Class.

CSS

❖ div and span - Example

```html
<!DOCTYPE html>
<html>
<head>
<title>Div and span example</title>
<style>
  div, span { border :1px solid black; }
  div { background-color:yellow; }
  span { background-color:cyan; }
</style>
</head>
<body>
<div>This text is within a div tag</div>
This isn't. <div>And this is again.</div><br>
<span>This text is inside a span tag.</span>
This isn't. <span>And this is again.</span><br><br>
<div>This is a larger amount of text in a div that
wraps around
to the next line of the browser</div><br>
<span>This is a larger amount of text in a span that
wraps around
to the next line of the browser</span>
</body>
</html>
```
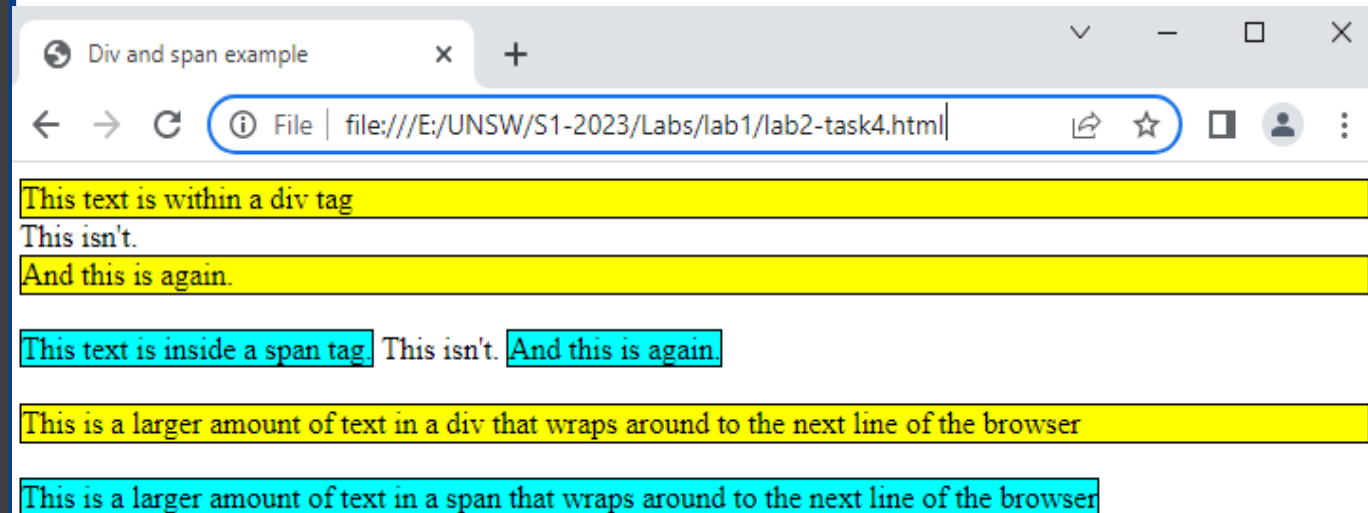
CSS

The Cascade

➢ "Cascade" = **order of precedence**

   ➢ **From external to inner, from global to local, from generic to specific**

   ➢ For conflicting styles, <u>more specific styles</u> will override the generic ones.

➢ **Browser Default** apply first

   ➢ \<body\> has white background color by default.

➢ **External Styles** apply next: override default styles with site-specific styles (global styles)

➢ **Embedded Styles** apply next: override global styles with page-specific styles on selected pages.

➢ **Inline Styles** apply next

➢ **HTML attributes** apply last

Browser Defaults → External Styles → Embedded Styles → Inline Styles → HTML Attributes
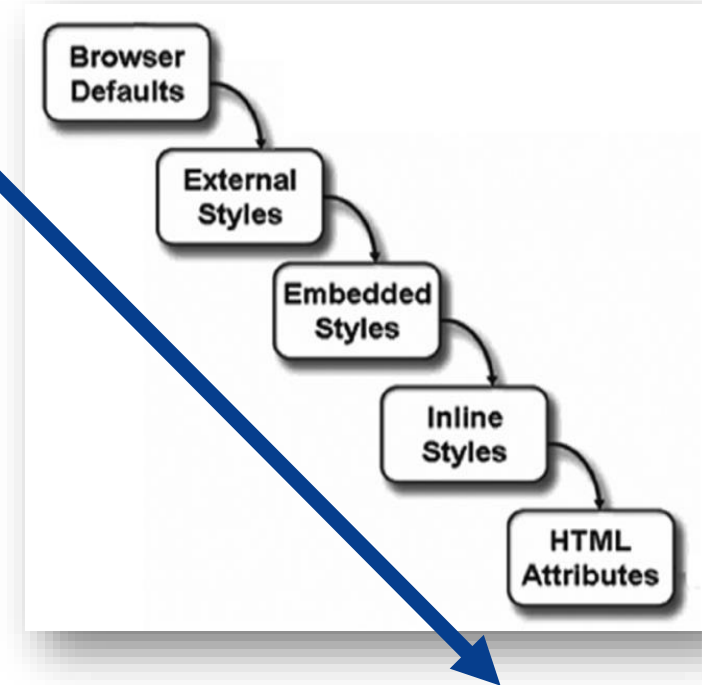
Internal, local, specific

CSS

➤ CSS inheritance

➤ Local elements inherit CSS styles from their container.

➤ If local elements (<p>) are styled, they take precedence over those of more global elements.

```
<!doctype html>
<html>
<head>
<meta charset="utf-8">
<title>Untitled Document</title>
<style>
            div {
                    color: blue;
            }
            div p {
                    color: red;
            }
</style>
</head>
<body>
<div>
            <h1>Welcome<h1>
            <p>This is Web Development and Security class. </p>
</div>
</body>
</html>
```

Welcome

This is Web Development and Security class.

h1 inherits styles from div

Style for p overrides its parent style (div)

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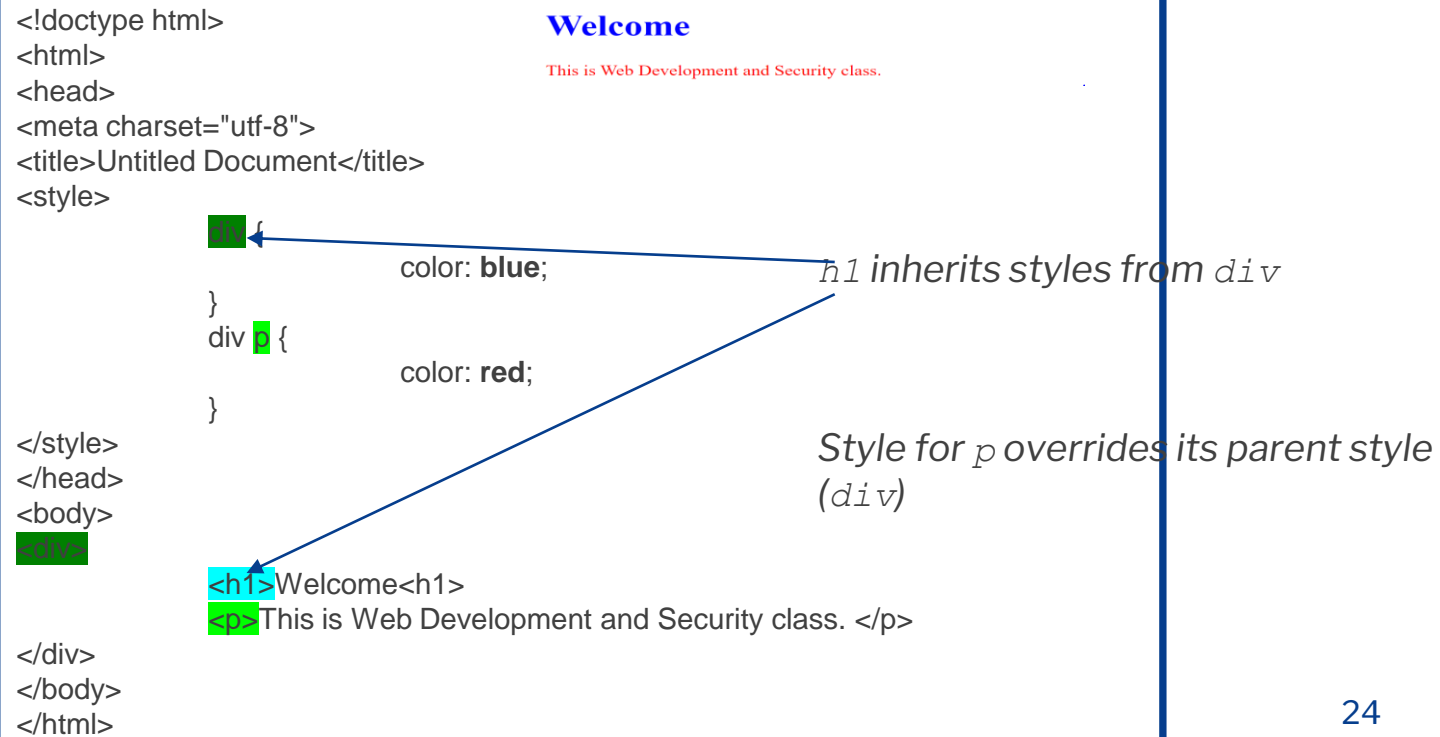
CSS

DOM Model

Document Object Model (DOM)

➢ Defines the logical structure of documents and the way a document is accessed and manipulated

➢ **Ascending element**: contained inside of another element (parent/container), *no matter how deep it is!*

  ➢h1, p, span and footer are all ascending elements of div.

➢ **Child element**: ascending element that is immediately below the parent.

  ➢h1, p and footer are child elements of div.

➢ **Sibling elements**: must have the same parent element

  ➢h1, p and footer are sibling.

➢ **Adjacent** means "immediately following"

  ➢p is adjacent sibling of h1 (footer is not).

DOM	Assets	Snippets

- ∨ html
  - ∨ head
    - meta
    - title   Parent
    - style
  - ∨ body
    - ∨ div .main-content
      - h1
      - ∨ p .sub-title   Ascending
        - span .special
      - footer

Children / Sibling

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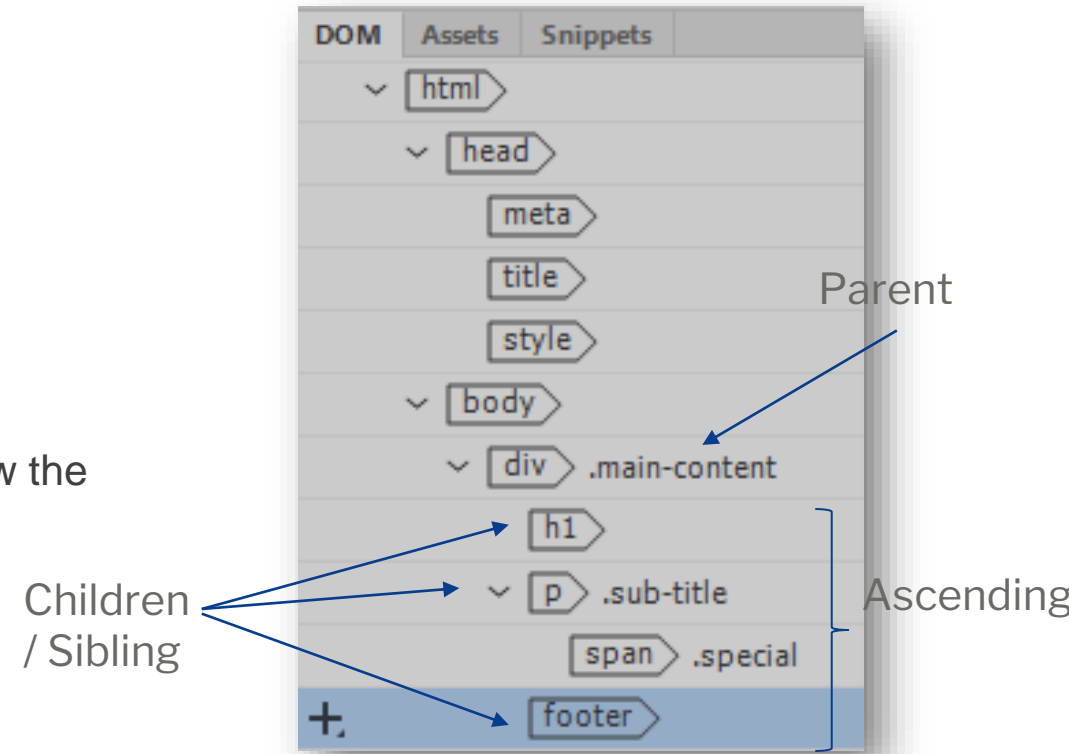
CSS Basics

Measurement

➢ **Fixed measurements**

   ➢ Pixels (px) (~1/96 inch, depending on devices)

Unit	Description
cm	centimeters
mm	millimeters
in	inches (1in = 96px = 2.54cm)
px *	pixels (1px = 1/96th of 1in)
pt	points (1pt = 1/72 of 1in)
pc	picas (1pc = 12 pt)

➢ **Relative (rely on other objects' measurements)**

   ➢ Element font size (em)

   ➢em unit is relative to the font-size of the element

   ➢1em = element's font size.

Unit	Description
em	Relative to the font-size of the element (2em means 2 times the size of the current font)
ex	Relative to the x-height of the current font (rarely used)
ch	Relative to width of the "0" (zero)
rem	Relative to font-size of the root element
vw	Relative to 1% of the width of the viewport*
vh	Relative to 1% of the height of the viewport*
vmin	Relative to 1% of viewport's* smaller dimension
vmax	Relative to 1% of viewport's* larger dimension
%	

CSS Basic Typography

➢ **text-align**
  ➢ left (default), center, right, justify.

➢ **text-decoration**
  ➢ none, underline, line-through
  ➢ e.g. to remove underline of hyperlinks

➢ **text-indent**
  ➢ Configure indentation of the first line of text.

➢ **text-transform**
  ➢ Configure the capitalization of text
  ➢ none (default), capitalize, uppercase, lowercase.

➢ **letter-spacing**
  ➢ Configure space between text characters
  ➢ normal (default), and a numeric pixel or em unit.

```html
<!DOCTYPE html>
<html>
<head>
<style>
p {
    text-indent: 1.5em;
}
a {
    text-decoration: none;
}
h3 {
    text-transform: uppercase;
    letter-spacing: 0.4em;
    text-align: center;
}

</style>
</head>
<body>

<h1>Hello World!</h1>
<h3>Smaller heading!</h3>
<p>This is a paragraph.</p>

</body>
</html>
```

Hello World!

S M A L L E R   H E A D I N G !

This is a paragraph.

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CSS Basic Typography

Font Family

➢ **Rendering fonts**

 ➢ Fonts **must be installed** in the visitor's machine to be rendered properly.

 ➢ font-family: <font1>, <font2>, <font3>;

  ➢Browsers will attempt to use the fonts in the order listed.

  ➢*If font1 is not available, use font2 and so on.*

  ➢*If all specified fonts are not available, the default font will be used (Times New Roman)*

Hello World!. This is the main Heading

Smaller heading!

This is a paragraph.

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
    text-align: center;
    font-family: Gill Sans, Gill Sans MT,
Helvetica, Arial,"sans-serif";
}

p {
    text-indent: 1.5em;
}

</style>
</head>
<body>

<h1>Hello World! This is the main
Heading</h1>
<h3>Smaller heading!</h2>
<p>This is a paragraph.</p>

</body>
</html>
```
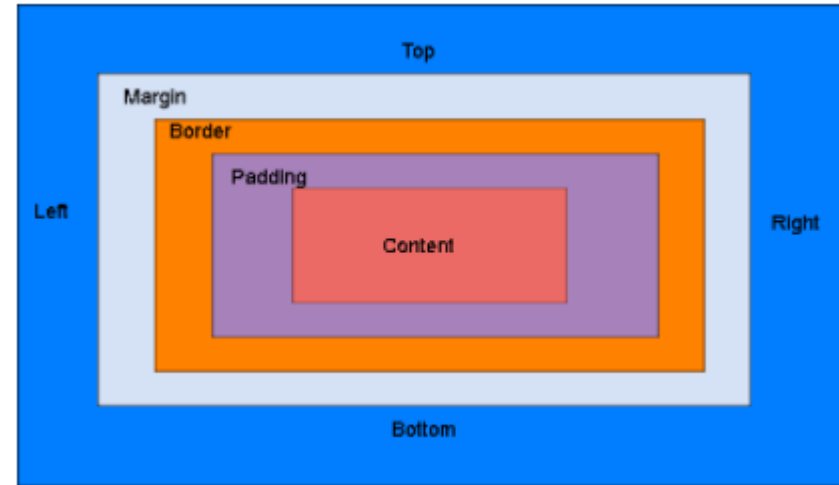
Defining a BOX Model in CSS

➤ **Content:** Actual Content of the box where we place the text or image.

➤ **Padding:** Area surrounding the content, i.e., the space between border and content

➤ **Border:** It is the area that surrounds the padding.

➤ **Margin:** It is the area that surrounds the border.

CSS - Spacing Between Elements

➢ **Margin**

   ➢ Space surrounding an element, falls outside of borders (if any)

   ➢ Completely transparent and hence displays container' background color.

```
margin-top: 1px;
margin-right: auto;
margin-bottom: 1px;
margin-left: auto;
```

↔

```
margin: 1px auto 1px auto;
```

↕

```
margin: 1px auto;
```
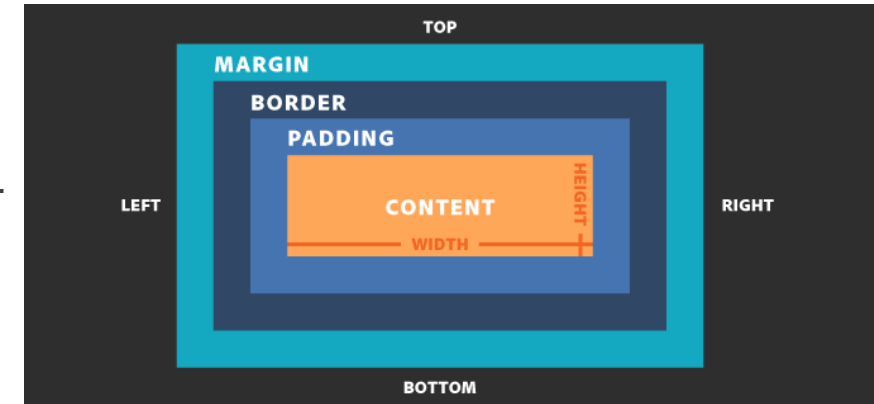
➢ **Padding**

   ➢ Space within an element, falls inside of borders (if any).

   ➢ Displays element's background color.

➢ **The element's height and width only account for the content!**

   ➢ To make the height account for content + padding + border, use box-sizing: border-box

CSS - Image Element

Image Hyperlinks and Image Position

➢ **Image hyperlinks**

  ➢ Wrap <img> tag with the <a> tag.

  ➢ Thumbnail link: link a small image to another image instead of a web page.

➢ **Image position**

  ➢ Image can be aligned in the middle / right

```
<a href="t1.html"><img src="images/tiger.png"
alt="Tiger" width="400"></a>
```

```
<a href="images/tiger-large.jpg"><img
src="images/tiger.png" alt="Tiger" width="80"></a>
```

CSS - Image Element

```
<p style="clear: both;">Lorem ipsum .. </p>
```

Image Hyperlinks and Image Position

❖ **Image position**

  ❑ Image with text floating around.

  - Use float allow text to surround the image

  - Use clear:left (or right or both) to return to normal document flow.

```
img {
    margin: 1em;
    float: right;
}
```

```
img {
    margin: 1em;
    float: left;
}
```

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Clearing the float: the `clearfix` hack

```
img {
    width: 200px;
}
```

Introduction

Lorem ipsum dolor sit amet, consectetur. Blanditiis, voluptatibus?

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Eaque praesentium velit ullam, alias possimus odio voluptatum mollitia iste quia fuga. Lorem ipsum dolor sit amet, consectetur adipisicing elit. Veritatis, adipisci.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Voluptas, ipsa. Lorem ipsum dolor sit amet, consectetur adipisicing elit. Mollitia fuga, dicta aliquam natus odio temporibus totam corporis quidem et architecto odit ab voluptatum, necessitatibus, ad! Recusandae harum libero in molestiae.

Copyright © 2017 - **Disclaimer**: Unde quibusdam nulla obcaecati nobis. Omnis quos laboriosam suscipit deleniti vel magnam. Click here for more information

```
img {
    width: 200px;
    float: left;
}
```

Introduction

Lorem ipsum dolor sit amet, consectetur. Blanditiis, voluptatibus?

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Eaque praesentium velit ullam, alias possimus odio voluptatum mollitia iste quia fuga. Lorem ipsum dolor sit amet, consectetur adipisicing elit. Veritatis, adipisci.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Voluptas, ipsa. Lorem ipsum dolor sit amet, consectetur adipisicing elit. Mollitia fuga, dicta aliquam natus odio temporibus totam corporis quidem et architecto odit ab voluptatum, necessitatibus, ad! Recusandae harum libero in molestiae.

Copyright © 2017 - **Disclaimer**: Unde quibusdam nulla obcaecati nobis. Omnis quos laboriosam suscipit deleniti vel magnam. Click here for more information

The footer also surrounded the picture.

To return to normal document flow, **clear the float** after the floating area.

```
img {
    width: 200px;
    float: left;
}
footer {
    clear: left;
}
```

Introduction

Lorem ipsum dolor sit amet, consectetur. Blanditiis, voluptatibus?

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Eaque praesentium ve voluptatum mollitia iste quia fuga. Lorem ipsum dolor sit amet, consectetur adi adipisci.

Lorem ipsum dolor sit amet, consectetur adipisic Lorem ipsum dolor sit amet, consectetur adipisic aliquam natus odio temporibus totam corporis q voluptatum, necessitatibus, ad! Recusandae har

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CSS - Background and Border

➢ background-color : <color>

➢ border: <width> <color> <style>
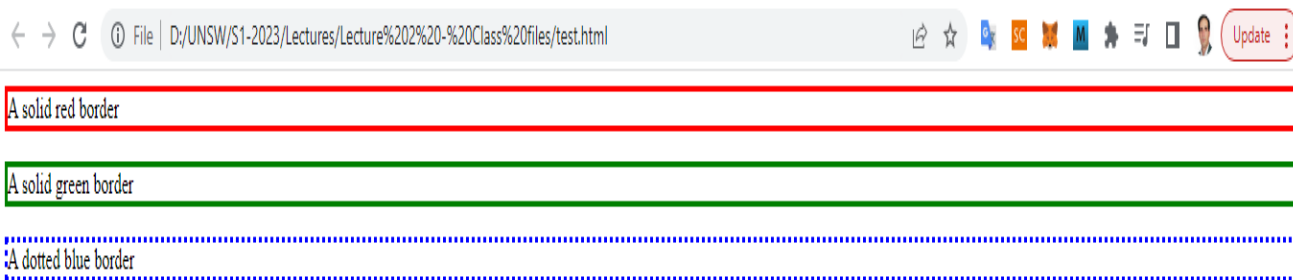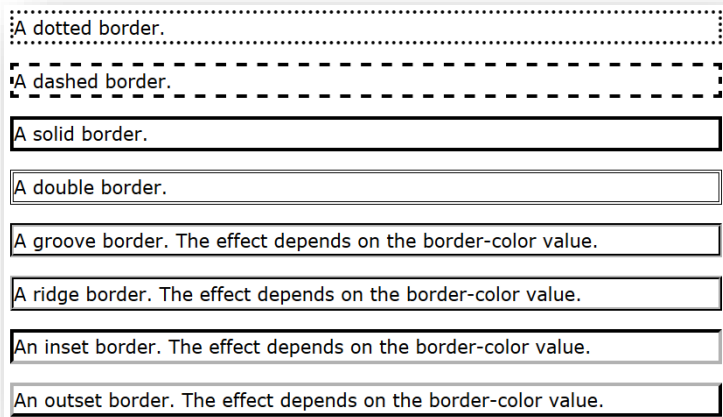

```
<style>
  p.one {
    border-style: solid;
    border-color: red;
  }

  p.two {
    border-style: solid;
    border-color: green;
  }

  p.three {
    border-style: dotted;
    border-color: blue;
  }
</style>
</head>
<body>

<p class="one">A solid red border</p>
<p class="two">A solid green border</p>
<p class="three">A dotted blue border</p>

</body>
</html>
```

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CSS - Background Image

- **background-image/repeat/size/position**
  - Where background image is smaller than its container, it will be tiled (repeated) by default.
    - Apply background-color first, followed by background-image
    - background-color will appear where background-image does not cover.
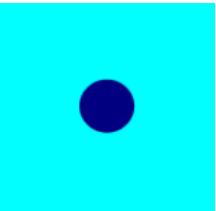
```
background-position:
center;
background-repeat:
no-repeat
```
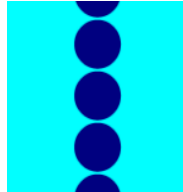
```
background-
position:
center;
background-
repeat: repeat-y
```
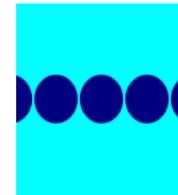
```
background-
position:
center;
background-
repeat: repeat-
x
```

- **background-image with multiple urls**
  - The different images are separated by commas
  - The first image is the closest to the viewer.

```
.test {
    background-image: url(images/bg2.png), url(images/bg1.jpg);
    background-repeat: no-repeat, repeat;
    background-size: 200px, auto;
    background-position: right top, top left;
}
```

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CSS-Multiple Background

```html
<!DOCTYPE html>

<html> <!-- backgroundimages.html -->
<head>

<title>CSS3 Multiple Backgrounds Example

</title>

<style>

.border {

font-family:'Times New Roman';

font-style :italic;

font-size :170%;

text-align :center;

padding :60px;

width :350px;

height :500px;
```

```css
background :url('b1.gif') top
left no-repeat,
url('b2.gif') top right no-
repeat,
url('b3.gif') bottom left no-
repeat,
url('b4.gif') bottom right no-
repeat,
url('ba.gif') top repeat-x,
url('bb.gif') left repeat-y,
url('bc.gif') right repeat-y,
url('bd.gif') bottom repeat-x
}
</style>
</head>
<body>
    <div class='border'>
    <h1>Employee of the month</h1>
    <h2>Awarded To:</h2>
    <h3>_____</h3>
    <h2>Date:</h2>
    <h3>___/___/_____</h3>
    </div>
</body>
</html>
```

CSS-Multiple Background - Edited

```html
<!DOCTYPE html>

<html> <!-- backgroundimages.html --> <head>

<title>CSS3 Multiple Backgrounds
Example</title>

<style>

.border {

font-family:'Times New Roman';

font-style :italic;

font-size :170%;

text-align :center;

padding :60px;

width :350px;

height :500px;
```

```css
background
:url('https://cdn5.vectorstock.com/
i/1000x1000/85/64/set-of-abstract-
color-curved-lines-vector-
22998564.jpg') top left no-repeat,
url('b2.gif') top right no-repeat,
url('b3.gif') bottom left no-
repeat,
url('b4.gif') bottom right no-
repeat,
url('ba.gif') top repeat-x,
url('bb.gif') left repeat-y,
url('bc.gif') right repeat-y,
url('bd.gif') bottom repeat-x
}

</style>
</head>
<body>
    <div class='border'>
    <h1>Employee of the month</h1>
    <h2>Awarded To:</h2>
    <h3>_____</h3>
    <h2>Date:</h2>
    <h3>___/___/_____</h3>
    </div>
</body>
</html>
```

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CSS-Multiple Background - Edited

```html
<!DOCTYPE html>

<html> <!-- backgroundimages.html --> <head>

<title>CSS3 Multiple Backgrounds
Example</title>

<style>

.border {

font-family:'Times New Roman';

font-style :italic;

font-size :170%;

text-align :center;

padding :60px;

width :350px;

height :500px;
```

```css
background :background
:url('https://th.bing.com/th/id/OIP.5
1vvtdTwDIEYs7HDUNTQsQHaB6?w=349&h=90&
c=7&r=0&o=5&pid=1.7') top left no-
repeat,
url('https://th.bing.com/th/id/OIP.51
vvtdTwDIEYs7HDUNTQsQHaB6?w=349&h=90&c
=7&r=0&o=5&pid=1.7') bottom left no-
repeat
}
</style>
</head>
<body>
<div class='border'>
<h1>Employee of the month</h1>
<h2>Awarded To:</h2>
<h3>_____</h3>
<h2>Date:</h2>
<h3>___/___/_____</h3>
</div>
</body>
</html>
```


Employee of the month — Awarded To: _____ Date: __/__/___

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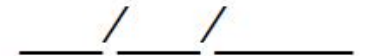
List markers (use background image) & Favicon

➢ We don't have to resize the actual marker image file:

    ➢ **Remove** all bullets, margin and padding in the list (ul).

    ➢ For each list item (li), **make the image as background**:

       ➢No-repeat and the size to be contained in available space.

       ➢Adjust padding which determine the size of background image.

```css
.no-bullet {
    list-style-type: none;
    padding: 0;
    margin: 0;
}
.img-bullet {
    background: url(images/star.svg) no-repeat left / contain;
    padding: 0.2em 0.2em 0.2em 2em;
}
```

```html
<ul class="no-bullet">
    <li class="img-bullet">Samsung</li>
    <li class="img-bullet">Apple</li>
    <li class="img-bullet">Motorola</li>
</ul>
```

⭐ Samsung
⭐ Apple
⭐ Motorola

➢ **Favicon**: small icon displayed in the address bar (16x16px or 32x32px)

    ➢ <link rel="icon" href="images/dino.png" type="image/x-icon">

Untitled Document   ×   +

ⓘ | file:///C:/Users/LT/Desktop/test/t4.html

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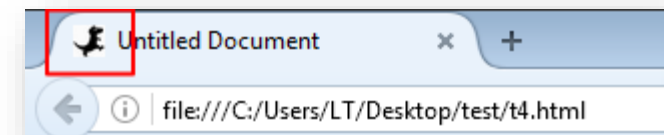
Bootstrap

- Bootstrap is a free front-end framework for faster and easier web development

- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins

- Bootstrap also gives you the ability to easily create responsive designs

- Bootstrap 5 is the newest version of Bootstrap

- The main differences between Bootstrap 5 and Bootstrap 3 & 4, is that Bootstrap 5 has switched to JavaScript instead of jQuery

- Reference: https://www.w3schools.com/bootstrap5/

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```html
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Bootstrap 5 Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.css" rel="stylesheet">
  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.bundle.min.js"></script>
</head>
<body>

<div class="container-fluid p-5 bg-primary text-white text-center">
  <h1>My First Bootstrap Page</h1>
  <p>Resize this responsive page to see the effect!</p>
</div>

<div class="container mt-5">
  <div class="row">
    <div class="col-sm-4">
      <h3>Column 1</h3>
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
      <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...</p>
    </div>
    <div class="col-sm-4">
      <h3>Column 2</h3>
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
      <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...</p>
    </div>
    <div class="col-sm-4">
      <h3>Column 3</h3>
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
      <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...</p>
    </div>
  </div>
</div>

</body>
</html>
```

Include Bootstrap library using this link

Bootstrap class

My First Bootstrap Page
Resize this responsive page to see the effect!

Column 1
Lorem ipsum dolor sit amet, consectetur adipisicing elit...
Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...

Column 2
Lorem ipsum dolor sit amet, consectetur adipisicing elit...
Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...

Column 3
Lorem ipsum dolor sit amet, consectetur adipisicing elit...
Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...

41

Why Bootstrap?

➤ **Easy to use**

➤ **Responsive features**

➤ **Mobile-first approach**
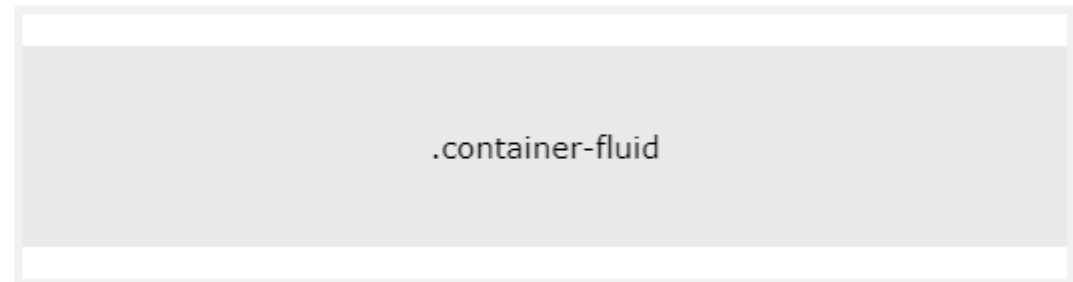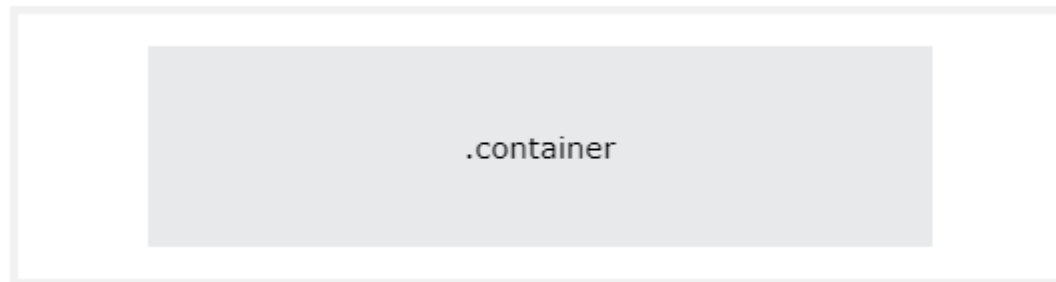
➤ **Browser compatibility**

Bootstrap Container

➤ Fixed Container

The .container class provides a responsive fixed width container

➤ Fluid Container

The .container-fluid class provides a full width container, spanning the entire width of the viewport

Note: Containers are not nestable (you cannot put a container inside another container).

.container

.container-fluid

Bootstrap Grid System

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1

span 4	span 4	span 4

span 4	span 8

span 6	span 6

span 12
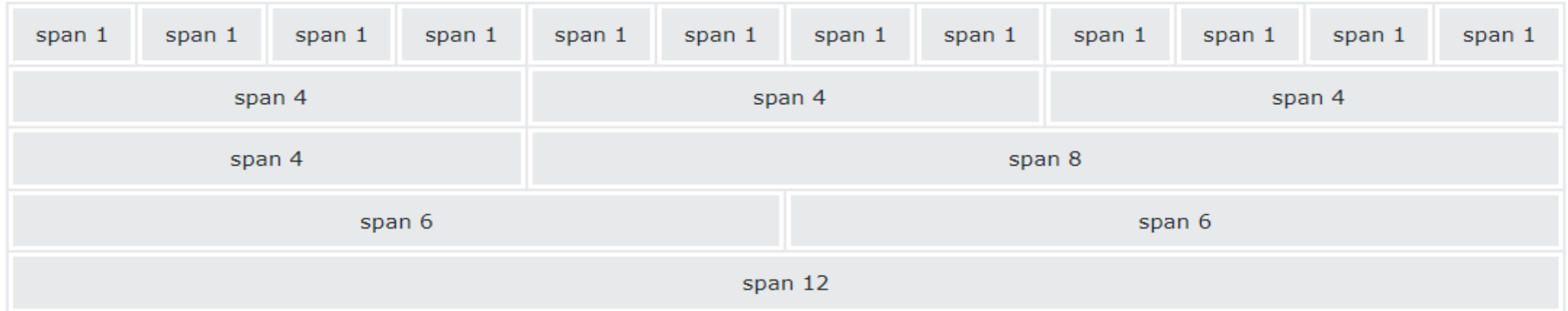
Grid Classes

- `.col-` (extra small devices - screen width less than 576px)
- `.col-sm-` (small devices - screen width equal to or greater than 576px)
- `.col-md-` (medium devices - screen width equal to or greater than 768px)
- `.col-lg-` (large devices - screen width equal to or greater than 992px)
- `.col-xl-` (xlarge devices - screen width equal to or greater than 1200px)

```html
<div class="container-fluid mt-3">
  <h1>Responsive Columns</h1>
  <p>Resize the browser window to see the effect.</p>
  <p>The columns will automatically stack on top of each other when the
screen is less than 576px wide.</p>
  <div class="row">
    <div class="col-sm-3 p-3 bg-primary text-white">.col</div>
    <div class="col-sm-3 p-3 bg-dark text-white">.col</div>
    <div class="col-sm-3 p-3 bg-primary text-white">.col</div>
    <div class="col-sm-3 p-3 bg-dark text-white">.col</div>
  </div>
</div>
```

Responsive Columns

Resize the browser window to see the effect.

The columns will automatically stack on top of each other when the screen is less than 576px wide.

.col	.col	.col	.col

Bootstrap Colors

```html
<div class="container mt-3">
  <h2>Contextual Colors</h2>
  <p>Use the contextual classes to provide "meaning through colors":</p>
  <p class="text-muted">This text is muted.</p>
  <p class="text-primary">This text is important.</p>
  <p class="text-success">This text indicates success.</p>
  <p class="text-info">This text represents some information.</p>
  <p class="text-warning">This text represents a warning.</p>
  <p class="text-danger">This text represents danger.</p>
  <p class="text-secondary">Secondary text.</p>
  <p class="text-dark">This text is dark grey.</p>
  <p class="text-body">Default body color (often black).</p>
  <p class="text-light">This text is light grey (on white
background).</p>
  <p class="text-white">This text is white (on white background).</p>
</div>
```

Contextual Colors

Use the contextual classes to provide "meaning through colors":

This text is muted.

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Secondary text.

This text is dark grey.

Default body color (often black).

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Background Colors

```html
<div class="container mt-3">
    <h2>Background Color with Contrasting Text
Color</h2>
    <p class="text-bg-primary">This text is
important.</p>
    <p class="text-bg-success">This text indicates
success.</p>
    <p class="text-bg-info">This text represents some
information.</p>
```

Background Color with Contrasting Text Color

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Secondary background color.

Dark grey background color.

Light grey background color.

Bootstrap Tables

Firstname	Lastname
John	Doe
Mary	Moe
July	Dooley

```html
<div class="container mt-3">
  <table class="table">
    <thead class="table-dark">
      <tr>
        <th>Firstname</th>
        <th>Lastname</th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <td>John</td>
        <td>Doe</td>
      </tr>
      <tr>
        <td>Mary</td>
        <td>Moe</td>
      </tr>
      <tr>
        <td>July</td>
        <td>Dooley</td>
      </tr>
    </tbody>
  </table>
```

Table with Stripped Rows

Striped Rows

The .table-striped class adds zebra-stripes to a table:

Firstname	Lastname
John	Doe
Mary	Moe
July	Dooley

```html
<<h2>Striped Rows</h2>
  <p>The .table-striped class adds zebra-stripes to a
table:</p>
  <table class="table table-striped">
    <thead>
      <tr>
        <th>Firstname</th>
        <th>Lastname</th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <td>John</td>
        <td>Doe</td>
      </tr>
      <tr>
        <td>Mary</td>
        <td>Moe</td>
      </tr>
      <tr>
        <td>July</td>
        <td>Dooley</td>
      </tr>
    </tbody>
  </table>
</div>
```

Images

```
<img src="cinqueterre.jpg" class="rounded" alt="Cinque Terre">
<img src="cinqueterre.jpg" class="rounded-circle" alt="Cinque Terre">
<img src="cinqueterre.jpg" class="img-thumbnail" alt="Cinque Terre">
```


Image Shapes

Rounded Corners: Circle: Thumbnail:

Aligning Images

```
<img src="paris.jpg" class="float-start" alt="Paris" width="304" height="236">
<img src="paris.jpg" class="float-end">
```



```
Centered: <img src="paris.jpg" class="mx-auto d-block" style="width:50%">
Responsive: <img class="img-fluid" src="ny.jpg" alt="New York">
It uses these attributes: max-width: 100%; height:auto
```

Buttons

Button Styles

Basic | **Primary** | **Secondary** | **Success** | **Info** | **Warning** | **Danger** | **Dark** | **Light** | Link

```html
<div class="container mt-3">
  <h2>Button Styles</h2>
  <button type="button" class="btn">Basic</button>
  <button type="button" class="btn btn-primary">Primary</button>
  <button type="button" class="btn btn-secondary">Secondary</button>
  <button type="button" class="btn btn-success">Success</button>
  <button type="button" class="btn btn-info">Info</button>
  <button type="button" class="btn btn-warning">Warning</button>
  <button type="button" class="btn btn-danger">Danger</button>
  <button type="button" class="btn btn-dark">Dark</button>
  <button type="button" class="btn btn-light">Light</button>
  <button type="button" class="btn btn-link">Link</button>
</div>
```

Buttons (Cont.)

Button States


```html
<div class="container mt-3">
    <h2>Button States</h2>
    <button type="button" class="btn btn-primary">Primary Button</button>
    <button type="button" class="btn btn-primary active">Active Primary</button>
    <button type="button" class="btn btn-primary" disabled>Disabled Primary</button>
    <a href="#" class="btn btn-primary disabled">Disabled Link</a>
</div>
```

```html
<button class="btn btn-primary">
    <span class="spinner-border spinner-border-sm"></span>
    Loading..
</button>
```

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Pagination

```
<ul class="pagination">
    <li class="page-item"><a class="page-link" href="#">Previous</a></li>
    <li class="page-item"><a class="page-link" href="#">1</a></li>
    <li class="page-item"><a class="page-link" href="#">2</a></li>
    <li class="page-item"><a class="page-link" href="#">3</a></li>
    <li class="page-item"><a class="page-link" href="#">Next</a></li>
</ul>
```
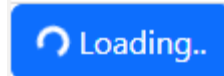
Previous | 1 | 2 | 3 | Next

List Groups

```html
<ul class="list-group">
    <li class="list-group-item active">Active item</li>
    <li class="list-group-item">Second item</li>
    <li class="list-group-item">Third item</li>
  </ul>
```
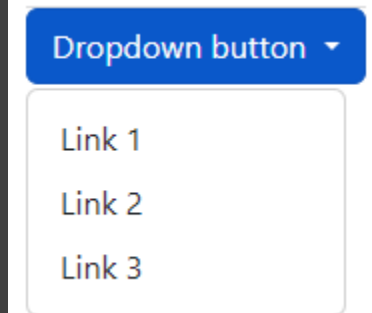
Active item
Second item
Third item

Dropdown

```html
<div class="dropdown">

    <button type="button" class="btn btn-primary dropdown-toggle" data-bs-toggle="dropdown">

        Dropdown button

    </button>

    <ul class="dropdown-menu">

        <li><a class="dropdown-item" href="#">Link 1</a></li>

        <li><a class="dropdown-item" href="#">Link 2</a></li>

        <li><a class="dropdown-item" href="#">Link 3</a></li>

    </ul>

</div>
```

Nav Menus

```html
<ul class="nav">

    <li class="nav-item">

     <a class="nav-link" href="#">Link</a>

    </li>

    <li class="nav-item">

     <a class="nav-link" href="#">Link</a>

    </li>

    <li class="nav-item">

     <a class="nav-link" href="#">Link</a>

    </li>

    <li class="nav-item">

     <a class="nav-link disabled" href="#">Disabled</a>

    </li>

  </ul>
```

Link   Link   Link   Disabled

```html
ul class="nav flex-column">
    <li class="nav-item">
     <a class="nav-link" href="#">Link</a>
    </li>
    <li class="nav-item">
     <a class="nav-link" href="#">Link</a>
    </li>
    <li class="nav-item">
     <a class="nav-link" href="#">Link</a>
    </li>
    <li class="nav-item">
     <a class="nav-link disabled" href="#">Disabled</a>
    </li>
  </ul>
```

Link

Link

Link

Disabled

Navigation Bars

```
<nav class="navbar navbar-expand-sm bg-dark navbar-dark">
    <div class="container-fluid">
      <ul class="navbar-nav">
        <li class="nav-item">
          <a class="nav-link active" href="#">Active</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="#">Link</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="#">Link</a>
        </li>
        <li class="nav-item">
          <a class="nav-link disabled" href="#">Disabled</a>
        </li>
      </ul>
    </div>
  </nav>
```

```
<nav class="navbar navbar-expand-sm bg-warning navbar-dark">
    <div class="container-fluid">
      <a class="navbar-brand" href="#">
        <img src="images/UNSW.jpg" alt="Logo" style="width:40px;"
class="rounded-pill">
      </a>
    </div>
```

Active Link Link Disabled

Bootstrap Forms

Stacked form

Email:

Enter email

Password:

Enter password

☐ Remember me

Submit

```html
<div class="container mt-3">
    <h2>Stacked form</h2>
    <form action="/action_page.php">
      <div class="mb-3 mt-3">
        <label for="email">Email:</label>
        <input type="email" class="form-control" id="email" placeholder="Enter email" name="email">
      </div>
      <div class="mb-3">
        <label for="pwd">Password:</label>
        <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pswd">
      </div>
      <div class="form-check mb-3">
        <label class="form-check-label">
          <input class="form-check-input" type="checkbox" name="remember"> Remember me
        </label>
      </div>
      <button type="submit" class="btn btn-primary">Submit</button>
    </form>
  </div>
```

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Final Notes

- Labs start this week.

- Please take time to discuss Project 1 topics with lab demonstrator

- Lab room is located in Building 13, TR3.

- Monday lab 1600-1800: Reza.

- Wednesday Lab 1500-1700: Faycal.