

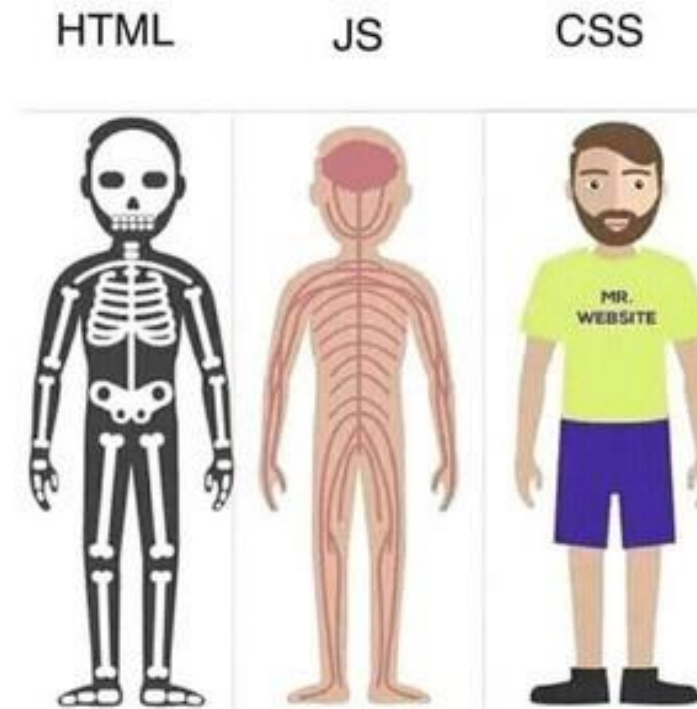
ICT-Start – Session 01

Module 2: Creating static web pages using HTML5 and CSS3

G) CSS Intro. and colors

December 2022

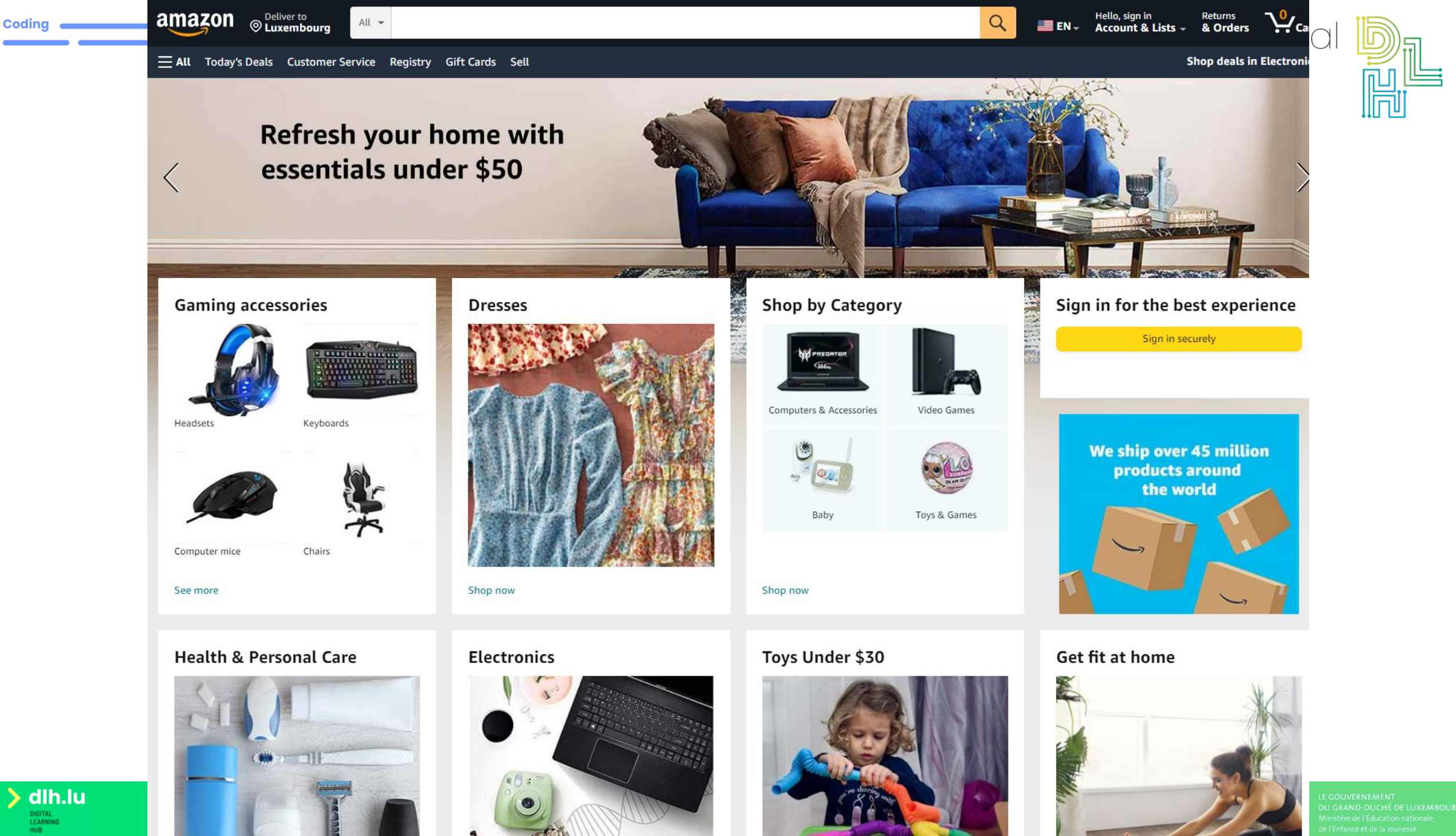
Cascading Style Sheets – Analogy 1



Cascading Style Sheets – Analogy 2



Popular websites... without CSS?!








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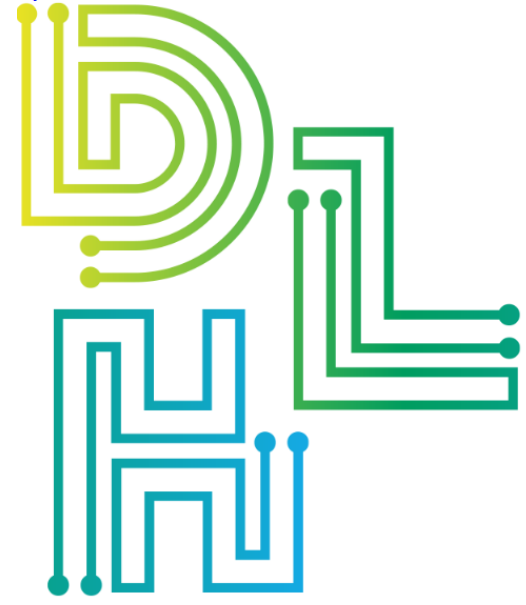
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Main idea/mechanism

- The main mechanism of CSS are so-called *selectors*
- A selector can be in the simplest form just the name of an HTML element
- CSS code can be written in a special tag: `<style>`
- Example:

Main idea/mechanism

My first heading

My first sub-heading

My second heading

My second sub-heading

My third heading

```
<style>
  h1{
    color: red;
    border: 1px solid black;
  }
</style>
</head>
<body>
  <h1>My first heading</h1>
  <h2>My first sub-heading</h2>
  <h1>My second heading</h1>
  <h2>My second sub-heading</h2>
  <h1>My third heading</h1>
</body>
```

selector

value(s)

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

(CSS-) attribute

CSS Selectors - name

- The most simple selector is based on an element's name as seen previously
- It affects **every** element with that name
- In the previous example, each and every h1 element will have a black border and a red font color.
- Examples:

My first heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

My first sub-heading

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My second heading

Vulputate dignissim suspendisse in est ante in. Magna eget est lorem ipsum dolor sit amet consectetur adipiscing. Amet commodo nulla facilisi nullam vehicula ipsum.

My second sub-heading

Urna dui convallis convallis tellus id interdum velit laoreet. Habitant morbi tristique senectus et netus. Eget egestas purus viverra accumsan in nisl nisi scelerisque eu. Id eu nisl nunc mi ipsum faucibus vitae aliquet nec. Augue mauris augue neque gravida. Praesent semper feugiat nibh sed pulvinar. Auctor augue mauris augue neque gravida in fermentum et sollicitudin. Fermentum leo vel orci porta non pulvinar neque. Nulla facilisi nullam vehicula ipsum a arcu cursus vitae congue.

My third heading

Vel pretium lectus quam id leo in vitae turpis. Quam lacus suspendisse faucibus interdum posuere lorem ipsum dolor.

```
<style>
  body{
    font-family: "Calibri"
  }
  h1, h2{
    font-style: italic;
    text-decoration: underline;
    color: red;
  }
  h2{
    color: blue;
  }
</style>
</head>
<body>
  <h1>My first heading</h1>
  <p>Lorem ipsum dolor sit amet, consectetur
  <h2>My first sub-heading</h2>
  <p>Lorem ipsum dolor sit amet, consectetur
  <h1>My second heading</h1>
  <p>Vulputate dignissim suspendisse in est
  <h2>My second sub-heading</h2>
  <p>Urna dui convallis convallis tellus id
  <h1>My third heading</h1>
  <p>Vel pretium lectus quam id leo in vitae
</body>
```

CSS Selectors - name

- The name selector affects all tags of that name
- HTML elements **inherit** the CSS-styles of their parent
 - Example: Setting the font to the body will affect all elements in the body, hence the entire webpage
- We can combine selectors by separating them with a comma
- Example:
 - The italic and underline style with the red color are applied to both h1 and h2 but we redefine the color **later** to **blue**, hence **overriding** the previous style

```
h1, h2{  
    font-style: italic;  
    text-decoration: underline;  
    color: red;  
}  
h2{  
    color: blue;  
}
```

CSS selector - **id**

- Sometimes we want to apply a CSS style to only one element without affecting all elements of that kind
- That's where the **id** attribute comes in place
- Every element can have an optional **id** attribute, but the value must be unique within the document!
- Example:

My first heading

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My first sub-heading

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My second heading

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My second sub-heading

Urna dui convallis convallis tellus id interdum velit laoreet. Habitant morbi tristique senectus et netus. Eget egestas purus viverra accumsan in nisl nisi scelerisque eu. Id eu nisl nunc mi ipsum faucibus vitae aliquet nec. Augue mauris augue neque gravida. Praesent semper feugiat nibh sed pulvinar. Auctor augue mauris augue neque gravida in fermentum et sollicitudin. Fermentum leo vel orci porta non pulvinar neque. Nulla facilisi nullam vehicula ipsum a arcu cursus vitae congue.

My third heading



```
#p3{
    border: 1px solid black;
    background-color: lightgray;
}
</style>
</head>
<body>
    <h1>My first heading</h1>
    <p>Lorem ipsum dolor sit amet, <
    <h2>My first sub-heading</h2>
    <p>Lorem ipsum dolor sit amet, <
    <h1>My second heading</h1>
    <p id="p3">Vulputate dignissim s
    <h2>My second sub-heading</h2>
    <p>Urna dui convallis convallis
    <h1>My third heading</h1>
    <p>Vel pretium lectus quam id le
</body>
```

CSS selector - **id**

- The only difference in the CSS part is that the selector must start with a hash **#** followed by the value defined in the **id** attribute
- In the previous example we applied a border only on one single paragraph

CSS selector - `class`

- Sometimes we want to apply a CSS style to a **subset** of elements **without** affecting **all** elements of that kind
- And since the **id** value must be **unique**, something else must be used
- That's where the **class** attribute comes in place
- Every element can have one or more optional `class` attribute, and the name can be used as often as necessary
- Example:

My first heading

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My first sub-heading

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My second heading

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My second sub-heading

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My third heading

Vel pretium lectus quam id leo in vitae turpis. Quam lacus suspendisse faucibus interdum posuere lorem ipsum dolor.



```
.par{
  border: 1px solid black;
  background-color: lightgray;
}
</style>
</head>
<body>
  <h1>My first heading</h1>
  <p class="par">Lorem ipsum dolor sit am
  <h2>My first sub-heading</h2>
  <p>Lorem ipsum dolor sit amet, consecte
  <h1>My second heading</h1>
  <p class="par">Vulputate dignissim susp
  <h2>My second sub-heading</h2>
  <p>Urna dui convallis convallis tellus
  <h1>My third heading</h1>
  <p>Vel pretium lectus quam id leo in vi
</body>
```

CSS selector - **class**

- The only difference in the CSS part is that the selector must start with a hash . (dot) followed by the value defined in the **class** attribute
- We can see that the border is now applied to all the elements with the class “par”

CSS Colors

- CSS supports 140 colors names
 - https://www.w3schools.com/colors/colors_names.asp
- However, often we might not find the specific color we are searching
- That's why CSS offers specifying colors using *Color Models* such as RGB(A) and other
- Interactive example:
 - <https://www.physicsclassroom.com/Physics-Interactives/Light-and-Color/RGB-Color-Addition/RGB-Color-Addition-Interactive>

CSS Colors - Examples

First paragraph

Second paragraph

Third paragraph

Fourth paragraph

Fifth paragraph

```
<style media="screen">
  #p1{color: rgb(255,0,0);}
  #p2{color: rgb(0,255,0);}
  #p3{color: rgb(0,0,255);}
  #p4{color: Tomato;}
  #p5{color: #BDB76B;}
</style>
</head>
<body>
  <p id="p1">First paragraph</p>
  <p id="p2">Second paragraph</p>
  <p id="p3">Third paragraph</p>
  <p id="p4">Fourth paragraph</p>
  <p id="p5">Fifth paragraph</p>
```

CSS Backgrounds

- Images can be used for backgrounds as well
- Let's make a gradient effect using the following image:



My first heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. Eos molestiae quia qui velit aliquid et dolore nihil est earum possimus et inventore architecto. Est magnam mollitia non incidunt impedit eos alias nesciunt aut numquam dolores. Ut laudantium eaque et natus dolores aut labore inventore 33 esse beatae? Qui dolores quia qui itaque voluptates ut inventore ipsam est similique aspernatur sit

My first sub-heading

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My second heading

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My second sub-heading

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My third heading

Vel pretium lectus quam id leo in vitae turpis. Quam lacus suspendisse faucibus interdum posuere lorem ipsum dolor.

Make IT real



```
.par{
  border: 1px solid black;
  background-image: url(img/gradient_bg.png);
}
</style>
<head>
<body>
  <h1>My first heading</h1>
  <p class="par">Lorem ipsum dolor sit amet, cons
  aliquid et dolore nihil est earum possimus et i
  <h2>My first sub-heading</h2>
  <p>Lorem ipsum dolor sit amet, consectetur adip
  <h1>My second heading</h1>
  <p class="par">Vulputate dignissim suspendisse
  <h2>My second sub-heading</h2>
  <p>Urna dui convallis convallis tellus id inte
  <h1>My third heading</h1>
  <p>Vel pretium lectus quam id leo in vitae turp
```



CSS Backgrounds

- By default, the background-image property repeats an image both horizontally and vertically
- In our example we only want to repeat it horizontally
- We can use the background-repeat attribute to achieve this!

My first heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. Eos molestiae quia qui velit aliquid et dolore nihil est earum possimus et inventore architecto. Est magnam mollitia non incidunt impedit eos alias nesciunt aut numquam dolores. Ut laudantium eaque et natus dolores aut labore inventore 33 esse beatae? Qui dolores quia qui itaque voluptates ut inventore ipsam est similique aspernatur sit

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My second heading

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My second sub-heading

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My third heading

Vel pretium lectus quam id leo in vitae turpis. Quam lacus suspendisse faucibus interdum posuere lorem ipsum dolor.



```
.par{
  border: 1px solid black;
  background-image: url(img/gradient_bg.png);
  background-repeat: repeat-x;
}
```

CSS Backgrounds – Another example

- Using the following image, we can apply a “universe/stars” effect on the whole body!



My first heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. Eos molestiae quia qui velit aliquid et dolore nihil est earum possimus et inventore architecto. Est magnam mollitia non incidunt impedit eos alias nesciunt aut numquam dolores. Ut laudantium eaque et natus dolores aut labore inventore 33 esse beatae?

My first sub-heading

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My second heading

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My second sub-heading

Urna dui convallis convallis tellus id interdum velit laoreet. Habitant morbi tristique senectus et netus. Eget egestas purus viverra accumsan in nisl nisi scelerisque eu. Id eu nisl nunc mi ipsum faucibus vitae aliquet nec. Augue mauris augue neque gravida. Praesent semper feugiat nibh sed pulvinar. Auctor augue mauris augue neque gravida in fermentum et sollicitudin. Fermentum leo vel orci porta non pulvinar neque. Nulla facilisi nullam vehicula ipsum a arcu cursus vitae congue.

My third heading

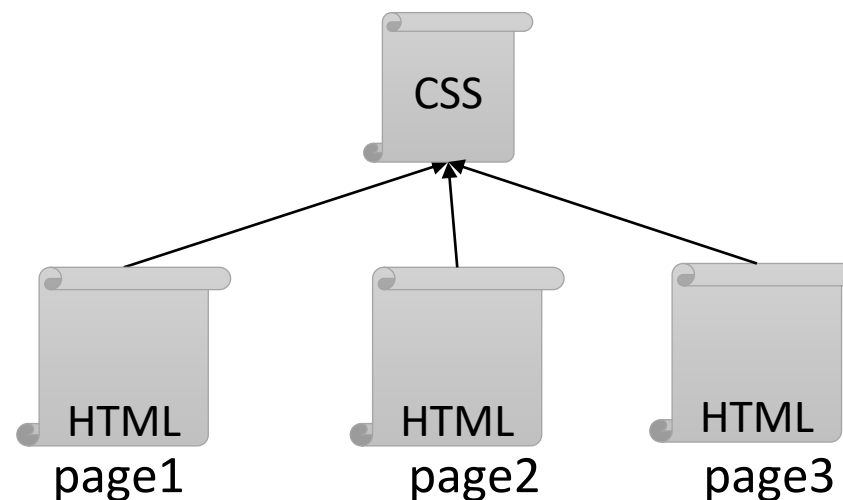
Vel pretium lectus quam id leo in vitae turpis. Quam lacus suspendisse faucibus interdum posuere lorem ipsum dolor.



```
body{
    font-family: "Calibri";
    background-image: url(img/stars-bg.png);
}
p{
    background-color: white;
}
```

Outsourcing CSS

- A website often consists of multiple pages
- Since we are going for the same look and user experience, the CSS code must be used in each HTML file
- To avoid copy&paste, we can outsource the CSS code to a dedicated .css file and link it in the HTML part using a `<link>` element





Outsourcing CSS

My first heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. Eos molestiae quia qui velit aliquip et dolore nihil est earum possimus et inventore architecto. Est magnam mollitia non incidunt impedit eos alias nesciunt aut numquam dolores. Ut laudantium eaque et natus dolores aut labore inventore 33 esse beatae?

My first sub-heading

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My second heading

Vulputate dignissim suspendisse in est ante in. Magna eget est lorem ipsum dolor sit amet consectetur adipiscing. Amet commodo nulla facilisi nullam vehicula ipsum.

My second sub-heading

Urna duis convallis convallis tellus id interdum velit laoreet. Habitant morbi tristique senectus et netus. Eget egestas purus viverra accumsan in nisl nisi scelerisque eu. Id eu nisl nunc mi ipsum faucibus vitae aliquet nec. Augue mauris augue neque gravida. Praesent semper feugiat nibh sed pulvinar. Auctor augue mauris augue neque gravida in fermentum et sollicitudin. Fermentum leo vel orci porta non pulvinar neque. Nulla facilisi nullam vehicula ipsum a arcu cursus vitae congue.

```
demo-backgrounds2-css-link... X
1 <!DOCTYPE html>
2 <html lang="en" dir="ltr">
3   <head>
4     <meta charset="utf-8">
5     <title></title>
6     <link rel="stylesheet" href="css/style.css">
7   </head>
8   <body>
9     <h1>My first heading</h1>
10    <p class="par">Lorem ipsum dolor sit amet, consecte
11    • aliquid et dolore nihil est earum possimus et inven
12    <h2>My first sub-heading</h2>
13    <p>Lorem ipsum dolor sit amet, consectetur adipisci
14    <h1>My second heading</h1>
15    <p class="par">Vulputate dignissim suspendisse in e
16    <h2>My second sub-heading</h2>
17    <p>Urna duis convallis convallis tellus id interdum
18    <h1>My third heading</h1>
19    <p>Vel pretium lectus quam id leo in vitae turpis.
20  </body>
21 </html>
```

```
style.css X
1 body{
2   font-family: "Calibri";
3   background-image: url(../img/stars-bg.png);
4 }
5 p{
6   background-color: white;
7 }
8 h1, h2{
9   font-style: italic;
10  text-decoration: underline;
11  color: red;
12 }
13 h2{
14   color: blue;
15 }
16 .par{
17   border: 1px solid black;
18   background-image: url(img/gradient_bg.png);
19   background-repeat: repeat-x;
20 }
21
```


Exercices