

Chapter 3

CSS Part 2

Colors and Backgrounds

INT102 Web Technologies (1/2021)

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Color in CSS

- Two ways to specify colors in CSS

- Predefined color name

`color: red ; color: olive ; color: blue ;`

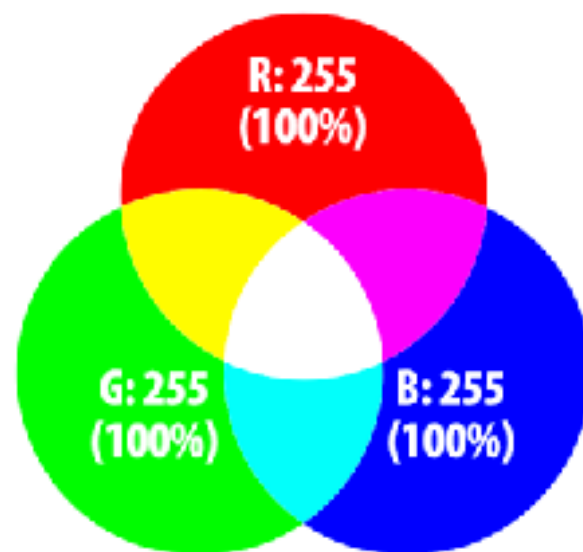
- RGB color with a numeric value

`color: #FF0000 ; color: #808000 ; color: #00F ;`

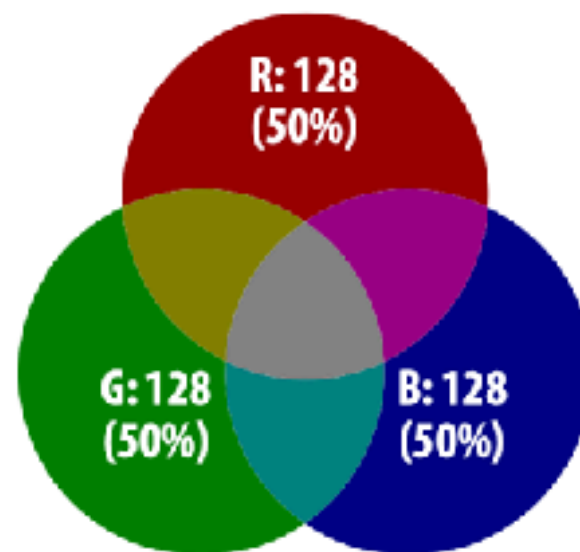
RGB color model

- Computers create the colors by combining the three colors of light: red, green and blue (known as RGB color model).
- The amount of light in each color is described on a scale from 0 (none) to 255 (full-blast).
- It can also be provided in a percent (255 or 100%).
- The closer the three values get to 255 (100%), the closer the resulting color gets to white.
- The colors can also be defined with HSL color (Hue, Saturation, Lightness).

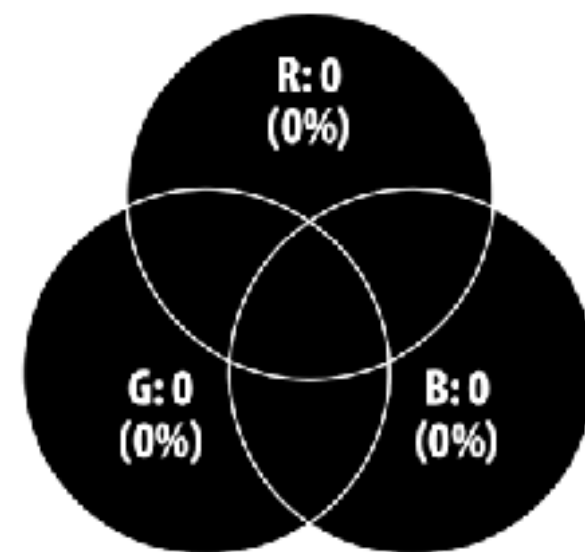
RGB model



RGB: 255, 255, 255
White



RGB: 128, 128, 128
Gray



RGB: 0, 0, 0
Black

Setting RGB Color value

- CSS allows RGB color values to be specified in a number of formats.

#0000ff

#00f

rgb(0,0,255)

rgb(0,0,100%)

RGBa color

- **RGBa** color allows to specify a color and also make it as **transparent** or as **opaque** ("a" or "alpha").
- The **alpha** is an additional channel that controls the level of transparency on a scale from **0** (fully transparent) to **1** (fully opaque).

RGBa **color: rgba(0,0,255,.1) ;**

RGBa **color: rgba(0,0,255,.5) ;**

RGBa **color: rgba(0,0,255,1) ;**

Color-related properties

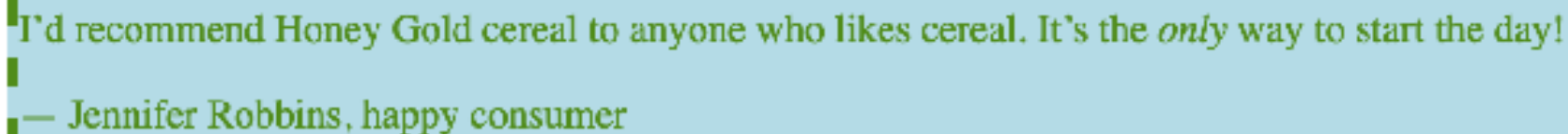
- List of color-related properties using with **CSS**:
 - **color**
 - to specify a foreground color of an element containing **text** and **border**
 - **background-color**
 - to specify a background color to any element
 - **border-color**
 - to specify a border color

https://www.quackit.com/css/css_color_codes.cfm

Color-related properties

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8" />
    <title>HTMLiveCode</title>
    <style type="text/css">
      blockquote {
        border: 4px dashed;
        color: #508C19;
        background-color: #B4DBE6;
      }
    </style>
  </head>

  <body>
    <blockquote>
      <p>I'd recommend Honey Gold cereal to anyone who likes cereal. It's the <em>only</em>
em> way to start the day!</p>
      <p>&mdash; Jennifer Robbins, happy consumer</p>
    </blockquote>
  </body>
</html>
```



I'd recommend Honey Gold cereal to anyone who likes cereal. It's the *only* way to start the day!

— Jennifer Robbins, happy consumer

<https://web.sit.kmutt.ac.th/sanit/int102/demo/colorquote.html>

Tips for using Color

- Limit the number of colors using on a page. Too many colors can create visual chaos.
- When specifying a foreground and background color, make sure that there is adequate contrast.
 - People tend to prefer reading dark text on very light background online.
- It is a good idea to specify the foreground color and the background color (particularly for whole pages) alongside each other.



vs.



Pseudo-class Selectors

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Email:

Email:

Pseudo-class Selectors

- A **pseudo-class** is a keyword added to a selector that specifies a special state of the selected element(s).
- **Pseudo-class selectors** are indicated by the **colon** (:) character. They typically go immediately after an element name.

a:link **a:over**

Link pseudo-classes

- The most basic **pseudo-classes selectors** target links ([a](#) elements) based on whether they have been clicked.

:link Applies a style to unclicked (unvisited) links

:visited Applies a style to links that have already been clicked

- By default, browser typically display linked text as **blue** and links that have been clicked as **purple**.

```
a:link {  
  color: maroon;  
}  
a:visited {  
  color: gray;  
}
```

User action pseudo-classes

- Pseudo-class targets elements states that result from direct user actions.

:focus Applies when element is selected and ready for input

:hover Applies when the mouse pointer is over the element (commonly used with links)

:active Applies when the element (such a link or button) is in the process of being clicked or tapped

```
input:focus {  
    background-color: yellow;  
}  
a:hover {  
    color: maroon;  
    background-color: #ffd9d9;  
}  
a:active {  
    color: red;  
    background-color: #ffd9d9;  
}
```

https://web.sit.kmutt.ac.th/sanit/int102/demo/demo_active.html

Background Images

- Using the [img](#) element to add images to the content of the document.
- Most decorative images are added to pages and elements as backgrounds using [CSS](#).
- The properties related to background images are:
 - [background-image](#)
 - [background-repeat](#)
 - [background-position](#)
 - [background-attachment](#)
 - [background-clip](#) (CSS3)
 - [background-size](#) (CSS3)
 - [background](#) (shortcut)

Adding a background image

background-image

Values:	url(location of image) none inherit
---------	---

Default:	none
----------	------

Applies to:	all elements
-------------	--------------

Inherits:	no
-----------	----

- The **URL** is relative to wherever the **CSS** is.
- If the rule is an embedded style sheet, the **URL** should be relative to the location of the HTML.
- If the rule is in an external style sheet, the **URL** should be relative to the location of the .css file.

Adding a background image



```
body {  
  background-image: url(images/blackgoose_small.png);  
  /* background-repeat: repeat (default) */  
}
```

Controlling tiling direction

background-repeat

Values:	repeat repeat-x repeat-y no-repeat inherit
---------	--

Default:	repeat
----------	--------

Applies to:	all elements
-------------	--------------

Inherits:	no
-----------	----

- Use the **no-repeat** value to display a background image just once.

background-repeat



no-repeat

repeat-x

repeat-y

Background position

background-position

Values: length measurement | percentage | left | center | right | top | bottom | inherit

Default: 0% 0% (same as left top)

Applies to: all elements

Inherits: no

- Keyword positioning

- `background-position: left bottom;`

- `background-position: right ; /* same as right center */`

- `background-position: top ; /* same as center top */`

- Length measurements

- `background-position: 200px 50px; /* distance from top-left corner (x ,y) */`

- Percentages

- `background-position: 15% 100%;`

- `/* percentage values in horizontal/vertical pairs */`

- `/* 0% 0% corresponding to the top-left corner and 100% 100% corresponding to the bottom-right corner */`

background-position



background-position: right top ;



background-position: center top ;



background-position: 100% 0 ;

Background attachment

background-attachment

Values: scroll | fixed | local (new in CSS3) | inherit

Default: scroll

Applies to: all elements

Inherits: no

- With the **background-attachment** property, it allows the choice of whether the background image:
 - **scrolls** with the content (**default**)
 - or **stays** in a fixed position

background-attachment



background-attachment: scroll ; background-attachment: fixed ;

background (shortcut)

background

Values: background-color background-image background-repeat background-attachment
background-position | inherit

Default: see individual properties

Applies to: all elements

Inherits: no

- All of the property values for **background** are optional and may appear in any order.
- Only the coordinates for the **background-position** property, the horizontal value must appear first, immediately followed by the vertical value.

```
body {  
    background: white url(arlo.png) no-repeat right top fixed;  
}
```

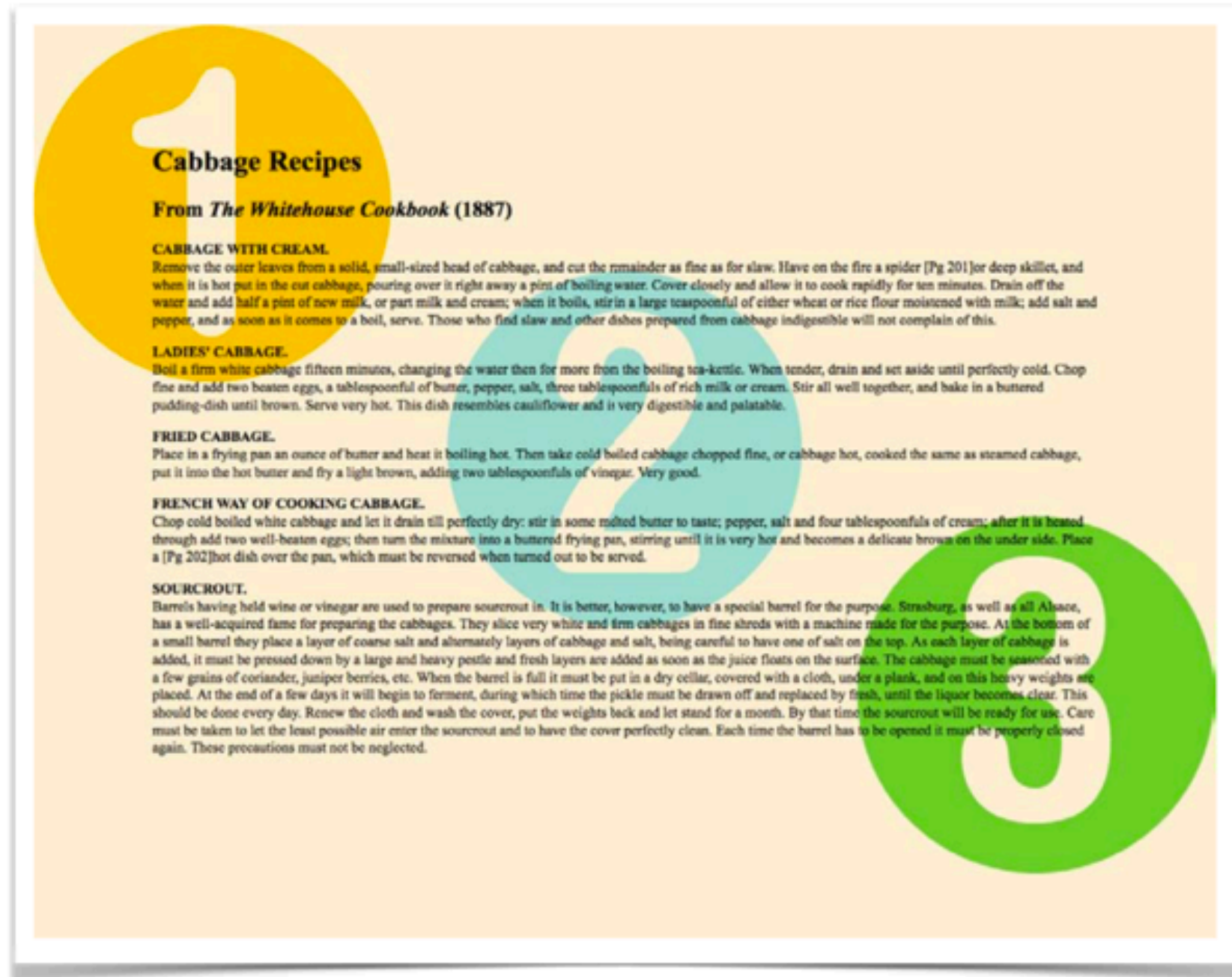

Multiple backgrounds

- CSS3 allows multiple background images to be applied to a single element, and browsers are beginning to support them.

```
body {  
  background-image: url(image1.png), url(image2.png), url(image3.png);  
  background-position: left top, center center, right bottom;  
  background-repeat: no-repeat; no-repeat; no-repeat;  
}
```

```
body { background:  
  url(image1.png) left top no-repeat,  
  url(image2.png) center center no-repeat,  
  url(image3.png) right bottom no-repeat;  
}
```

Multiple backgrounds



External Style Sheets

- [External style sheets](#) are the most powerful way to use CSS.
- Style can be changed across an entire site simply by editing a single style sheet document.
- An [external style sheet](#) is a plain-text document with at least one style sheet rule (may not include any HTML tags).
- The [style sheet](#) should be named with the [.css](#) suffix.
- Two ways to refer to an external style sheet:
 - [link](#) element
 - [@import](#)

Using the link element

- The best-support method is to create a link to the .css document using the link element in the head of document

```
<head>  
  <title>Titles are required.</title>  
  <link rel="stylesheet" href="/path/stylesheet.css">  
</head>
```

- Two attributes in the link element:
 - **rel** = "stylesheet"
 - Define the linked document's **relation** to the current document.
 - The value of the **rel** attribute is always **stylesheet** when linking to a **style sheet**.
 - In HTML 4.01 and XHTML 1.0, the **link** element must include the type attribute (**type="text/css"**)
 - **href** = "url"
 - Provide the location of the .css file.
- **Multiple link elements** to different style sheets can be included and they will all apply. If there are conflicts, **the last one will override previous settings**.

Importing with @import

- The other method for attaching an external style sheet to a document is to import it with an `@import` rule.
- The `@import` rule can add to a `style sheet`:
 - in an `external .css` style sheet document.
 - in the `style` element.

```
<head>
  <title>Titles are required.</title>
  <style>
    @import url("/path/stylesheet.css"); /* or @import "/path/sylesheet.css" ; without url() */
    p { font-face: Verdana;}
  </style>
</head>
```


Modular Style Sheets

- Content of clientsite.css

```
/* basic typography */  
@import url("type.css");  
/* form inputs */  
@import url("forms.css");  
/* navigation */  
@import url("list-nav.css");
```

- Managing frequently reuse styles in separate style sheets according to their functionality and combining them in mix-and-match fashion using **@import** rules
- The **@import** rules need to go before that use selectors.