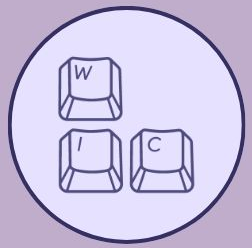
Intro to CSS

Fall 2024

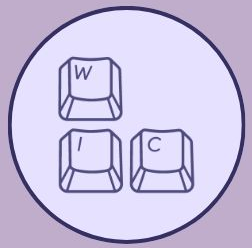
Event Type: Tech Dev

Agenda

- What is CSS?
- Applying CSS
- Simple Selectors
- Combinator Selectors
- User-Action Pseudo-Classes
- CSS Box Model
- CSS Positioning
- CSS Flexbox Layout



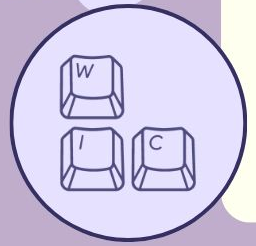
Access the Code



The folder with the starter code and the slides are in the WIC Discord in the **#tech-dev channel**

https://github.com/WIC-UCSD-Project-Teams/css-workshop

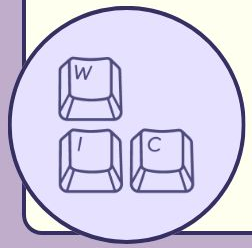
What is CSS?



https://russmaxdesign.github.io/maxdesign-slides/02-css/203-css-rulesets.html#/

What is CSS?

- CSS is the language we use to **style a Web page**.
- CSS stands for **Cascading Style Sheets.**
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media.
- CSS is written using a series of rules - sometimes called rulesets or statements.

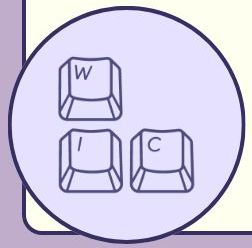


Vocabulary: Selector

- The selector **selects the elements** in an HTML document that you want to target for styling.
- In the following example, the p selector will select **every paragraph element** in the HTML document.

```
/* Selector */
p {
  color: red;
}
```

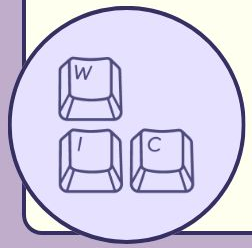
```
<!doctype html>
<html>
  <head>
    <title>Document title</title>
  </head>
  <body>
    <h1>Heading</h1>
    <p>A paragraph element.</p>
    <p>A second paragraph element.</p>
  <body>
</html>
```



Vocabulary: Declaration Block

- The **declaration block** is a container that consists of anything between (and including) the start brace "{" and end brace "}".

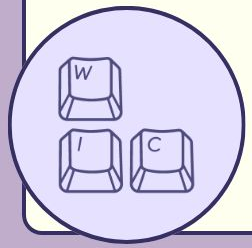
```
/* Declaration block */
p {
  color: red;
}
```



Vocabulary: Declaration

- The **declaration** consists of a property and a value. It tells browsers how to render any element that is selected.

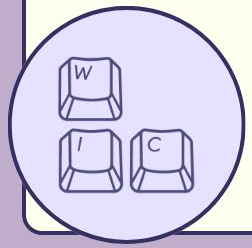
```
/* Declaration */
p {
  color: red;
}
```



Vocabulary: Property

- The **property** defines what aspect of the element will be styled.
- In the following example, the color property **will be styled.**

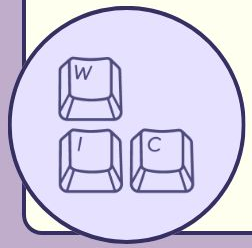
```
/* Property */
p {
  color: red;
}
```



Vocabulary: Value

- The **value** is the exact style you wish to set for the property. In the following example, all paragraph elements will be styled with a value of red.

```
/* Value */
p {
  color: red;
}
```

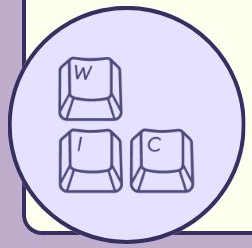


Vocabulary: Comments

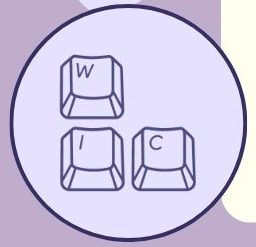
- You can **insert comments in CSS**. CSS comments must begin with a forward slash and an asterisk `"/*"` and end with an asterisk and a forward slash `"*/"`.

```
/* a CSS comment used in CSS files */
```

```
/* --------------------
HEADER STYLES
-------------------- */
```



Applying CSS

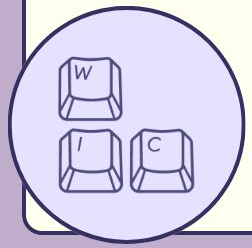


https://russmaxdesign.github.io/maxdesign-slides/02-css/204-applying-css.html#/

Inline Styles

- **Inline styles** are applied to elements directly in the HTML markup using the style attribute.
- Inline styles **should be avoided** as they are inefficient.
- For example, if you wanted to style every p element in a document, you would need to use **multiple inline styles**.

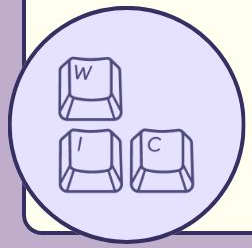
```
<html>
  <head>
    <title>Document title</title>
  </head>
  <body>
    <h2 style="color: red;">
      Heading here
    </h2>
  <body>
</html>
```



Header Styles

- **Header styles** are written inside the `<head>` element of HTML documents.
- **CSS rules** are added inside the `<style>` element.
- Like inline styles, header styles **should be avoided on any real website** as they are inefficient and hard to maintain.

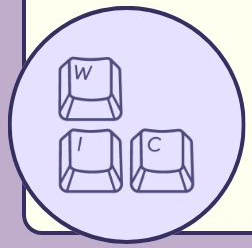
```
<html>
  <head>
    <title>Document title</title>
    <style>
      h2 { color: blue; }
    </style>
  </head>
  <body>
  <body>
</html>
```



External Style Sheets

- **External style sheets** are separate CSS documents that can be “linked to” from HTML documents using the <link> element.
- Authors can link to **more than one CSS document** from the HTML document.
- External style sheets are **far more efficient and effective** than inline or header styles as you can use a single CSS file for multiple HTML documents.

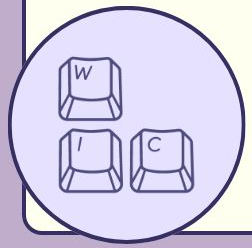
```
<html>
  <head>
    <title>Document title</title>
    <link rel="stylesheet" href="a.css">
  </head>
  <body>
  <body>
</html>
```



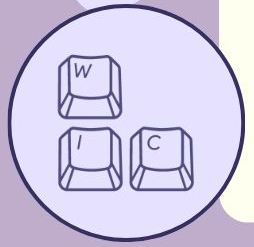
External Style Sheets

- The `rel` attribute is **required** within the `<link>` element.
- It is used to **define the relationship** from the current HTML document to the linked file.
- In this case `rel="stylesheet"` informs the browser that **the file being linked to is a stylesheet**.

- The `href` attribute is also **required** within the `<link>` element.
- It is used to **define the location** of the linked document.



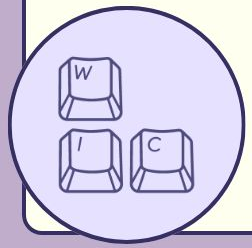
Simple Selectors



https://russmaxdesign.github.io/maxdesign-slides/02-css/205-01-selectors-simple.html#/

Simple Selectors

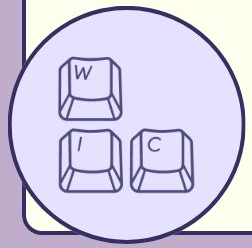
- **Simple selectors** allow you to target HTML elements directly, as well as targeting elements that contain class or ID attributes.



Type Selectors

- The **type selector** is written using an element type.
- The type selector **targets every instance of the element type** regardless of their position in the document tree.

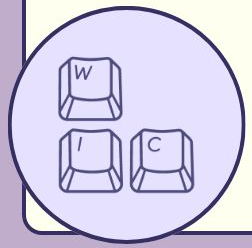
```
/* syntax */
E { }

/* example */
h1 { }
```



Type Selectors

- In the following example, the `p` selector targets **any instance of the `<p>` element**.

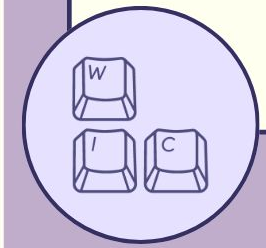
```
/* CSS selector */
p { }

<!-- HTML markup -->
<p></p>
<div></div>
<p></p>
```



Exercise: Write Some Type Selectors

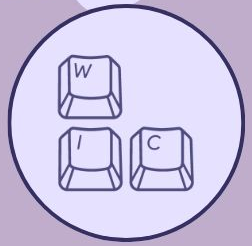
Go to the exercise-205-01-01.html file

- **Write a CSS rule** to set the <h1> element to color: blueviolet.
- **Write a CSS rule** to set the <b> element to color: chocolate.
- **Write a CSS rule** to set the element to color: cornflowerblue.
- **Write a CSS rule** to set the <blockquote> element to color: darkcyan.



Exercise Answer

```
/* Add styles here */
h1 { color: blueviolet; }
b { color: chocolate; }
em { color: cornflowerblue; }
blockquote { color: darkcyan; }
```



Exercise 205-01-01: Write some type selectors

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> This is a blockquote.

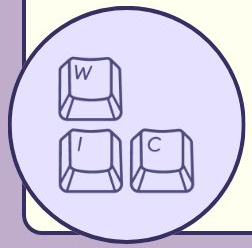
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Class Selectors

- The **class selector** is written using an optional element, followed by a ".", followed by the class name.

```
/* syntax */
.class-name { }
E.class-name { }

/* example */
.intro { }
```



Class Selectors

- Whitespace is **not permitted** within the selector.
- Class values are **case-sensitive**. In the following example, browsers interpret .intro and .Intro as different classes.
- Classes can begin with letters, **digits, hyphens and underscores**. They can also include colons and periods.
- However, if class values start with a number or a special character, they **must be escaped** when writing CSS selectors.

```
/* Valid */
.class-name { }

/* Invalid */
. class-name { }
```

```
/* case sensitive classes */
.Intro { }
.intro { }
```

```
/* escaped number */
.\34 80wide { }

<!-- HTML markup -->
<div class="480wide"></div>
```

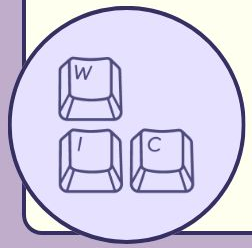
```
/* class names */
.active { }
.480wide { }
.-members { }
._classname { }
```

Class Selectors

- The class selector targets any HTML element **that has the relevant class value.**
- In the following example, the .intro selector targets any element that **contains a class** of intro.

```
/* CSS selector */
.intro { }

<!-- HTML markup -->
<p class="intro"></p>
<div class="intro"></div>
```



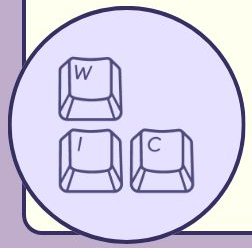
Class Selectors

- Elements can be added before the "." to make a selector more specific.
- In the following example, the `p.intro` selector **targets only** `<p>` elements that contain a class of `intro`. The `<div>` with a class of `intro` is not targeted.

```
/* CSS selectors */
div.intro { }
p.intro { }
```

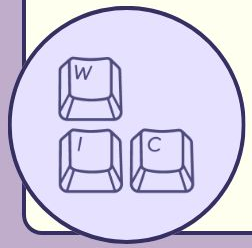
```
/* CSS selector */
p.intro { }

<!-- HTML markup -->
<div class="intro"></div>
<p class="intro"></p>
```



Class Selectors

- **Classes can be added together** to make a selector more specific. The joined class selectors cannot contain whitespace.
- In the following example, the .one.two selector **targets any element that has both class attribute values** of one and two.
- The class attribute values within the HTML document can be **written in any order**. The value one two is the same as two one.
- Multiple classes can also be written in any order within the CSS. The selector .one.two is the **same as** .two.one.




```
<!-- HTML markup -->
<p class="one"></p>
<p class="one two"></p>
<p class="two"></p>
```

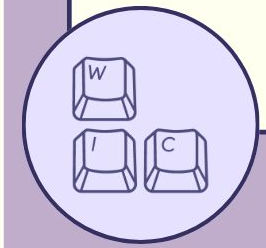
```
/* CSS selector */
.one.two { }

<!-- HTML markup -->
<p class="one two"></p>
<p class="two one"></p>
```

Exercise: Write Some Class Selectors

Go to the exercise-205-01-02.html file

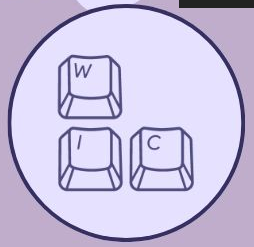
- **Write a CSS rule** to style the class of intro with a color of steelblue.
- **Write another CSS rule** to target only <p> elements with a class of intro. Set the color to violet.



Exercise Answer

```
/* Add styles here */
.intro {
  color: steelblue;
}

p.intro {
  color: violet;
}
```



Exercise 205-01-02: Write some class selectors

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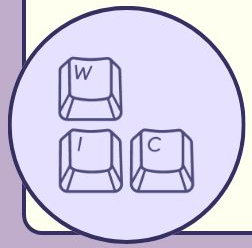
Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam,
consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos?
Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam,
consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

ID Selectors

- The **ID selector** is written using an optional element, followed by a "#", followed by the ID name.

```
/* syntax */
#id-name { }
E#id-name { }

/* example */
#sidebar { }
```



ID Selectors

- Whitespace is **not permitted** within the selector.
- ID names are **case-sensitive**. In the following example, browsers will interpret #nav and #Nav as different IDs.
- ID attribute values are allowed to have any characters or strings, as long as the value is **unique** and does not contain whitespace.
- However, if ID values start with a number or a special character, these characters or numbers **must be escaped.**

```
/* Valid */
#id-name { }

/* Invalid */
# id-name { }
```

```
/* Case sensitive */
#nav { }
#Nav { }
```

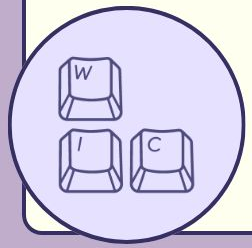
```
/* escaped number */
#\34 80wide { }

<!-- HTML markup -->
<div id="480wide"></div>
```

```
/* ID names */
#active { }
#480wide { }
#-members { }
#_classname { }
```

ID Selectors

- The ID selector targets any HTML element **that has the relevant ID value.**
- In the following example, the #nav selector targets **any instance** of an element that contains an ID of nav.

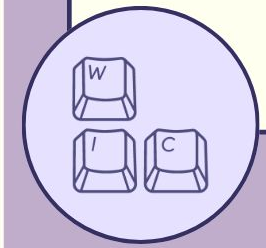
```
/* CSS selector */
#nav { }

<!-- HTML markup -->
<p id="nav"></p>
```



Exercise: Write Some ID Selectors

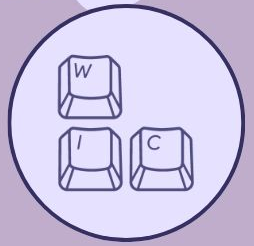
Go to the exercise-205-01-03.html file

- **Write a CSS rule** to style the element with an ID of title with color: darkviolet.
- **Then write another CSS rule** to style the element with an ID of pullout with color: deeppink.



Exercise Answer

```
/* Add styles here */
#title {
  color: darkviolet;
}

#pullout {
  color: deeppink;
}
```



Exercise 205-01-03: Write some ID selectors

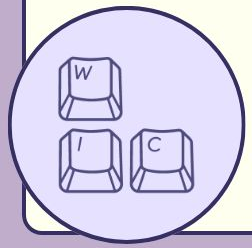
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Universal Selectors

- The **universal selector** is written using a "*".

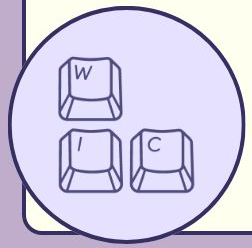
```
/* syntax */
* { }
```



Universal Selectors

- The universal selector targets **all elements within the document.**
- In the following example, the universal selector targets **every element in the document.**

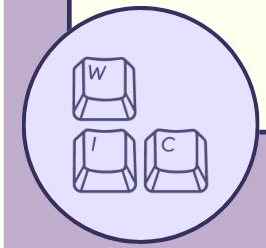
```
/* CSS selector */
* { }

<!-- HTML markup -->
<body>
  <div></div>
</body>
```



Exercise: Write the Universal Selector

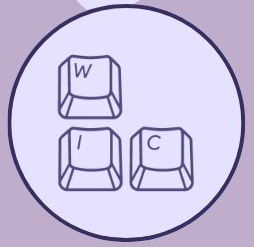
Go to the exercise-205-01-04.html file

- **Write a CSS rule** to style all elements in the document using the universal selector. Use color: darkmagenta.



Exercise Answer

```
/* Add styles here */
* {
  color: darkmagenta;
}
```



Exercise 205-01-04: Write the universal selector

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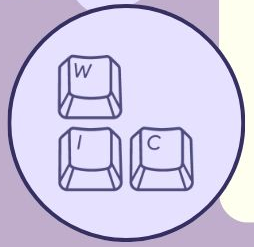
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

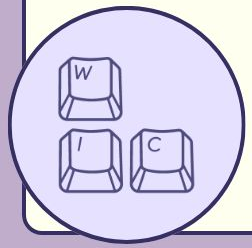
Combinator Selectors



https://russmaxdesign.github.io/maxdesign-slides/02-css/205-02-selectors-combinator.html#/

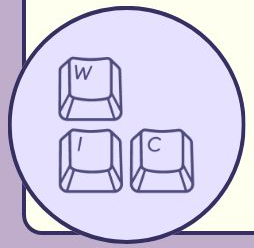
Combinator Selectors

- **Combinators** allow you to combine individual selectors into new types of selectors.



Descendant Combinators

- **Descendant combinators** are written using two or more selectors separated by whitespace.
- Descendant combinators target **only elements that are descendants of other elements.**
- In the following example, the `<a>` that is a **descendant** of the `<p>` will be selected, but not the `<a>` that is a descendant of the `<div>`.




```
/* syntax */
E F { }

/* example */
ul li a { }
```

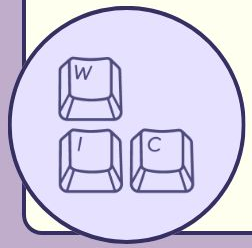
```
/* CSS selector */
p a { }

<!-- HTML markup -->
<p>
  <a></a>
</p>
<div>
  <a></a>
</div>
```

Descendant Combinators

- The key to descendant combinators is understanding **paths to elements**. There is a path to every element starting with the `<html>` element.
- Paths can be **written in full or in part to the element** or a partial path, depending on your need.

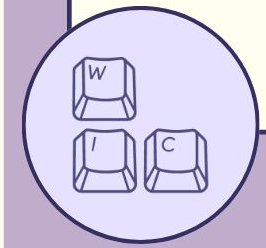
```
/* example paths */
html body .container .nav ul li a { }
body .container .nav ul li a { }
.container .nav ul li a { }
.nav ul li a { }
ul li a { }
ul a { }
li a { }
a { }
```



Exercise: Write a Descendant Combinator

Go to the `exercise-205-02-01.html` file

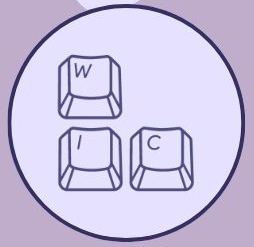
- **Write a CSS rule** to style the `<a>` element to be `color: firebrick`**.** However, **only style the `<a>` element inside the `<p>` element** (Link 2), not the `<a>` element inside the `<div>` element (Link 1).




```
<div>
  <a href="#">Link 1</a>
</div>
<p>
  <a href="#">Link 2</a>
</p>
```

Exercise Answer

```
/* Add styles here */
p a {
    color: firebrick;
}
```



Exercise 205-02-01: Write a descendant combinator

Link 1
Link 2

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Child Combinators

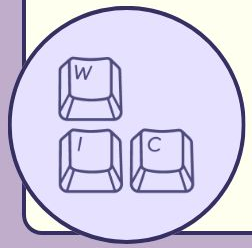
- **Child combinators** are written using two selectors separated by a ">".
- Child combinators target **any element that is a direct child of another element.**
- **Only child elements**, rather than descendant elements, will be selected.
- In the following example, the <a> that is **a child** of the will be selected, but not the <a> that is a descendant of the .

```
/* syntax */
E > F { }

/* example */
p > a { }
```

```
/* CSS Selector */
div > a { }

<!-- HTML markup -->
<div>
  <a></a>
</div>
<div>
  <p> <a></a> </p>
</div>
```

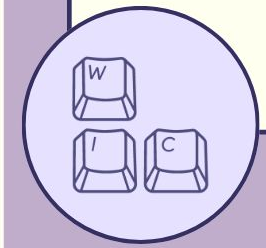


Exercise: Write a Child Combinator

Go to the exercise-205-02-02.html file

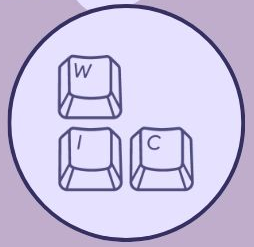
- **Write a CSS rule** to style the <a> element to be color: forestgreen. However, **only style the <a> that is a child of the element** (Link 1), not the <a> that is a descendent of the element (Link 2).

```
<div>
  <a href="#">Link 1</a>
</div>
<div>
  <p>
    <a href="#">Link 2</a>
  </p>
</div>
```



Exercise Answer

```
/* Add styles here */
div > a {
  color: forestgreen;
}
```



Exercise 205-02-02: Write a child combinator

Link 1
Link 2

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Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Adjacent Sibling Combinators

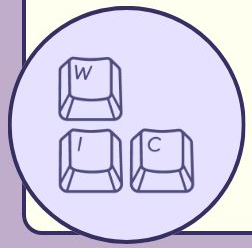
- **Adjacent sibling combinators** are written using two selectors separated by a `"+"`.
- Adjacent sibling combinators target **the sibling immediately following a defined element.**
- In the following example, only the `<h3>` **that is adjacent to** (or comes directly after) the `<h2>` will be selected.

```
/* syntax */
E + F { }

/* example */
h2 + h3 { }
```

```
/* CSS selector */
h2 + h3 { }

<!-- HTML markup -->
<h2>Content</h2>
<h3>Content</h3>
<h3>Content</h3>
```

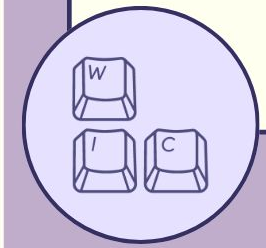


Exercise: Write an Adjacent Sibling Combinator

Go to the `exercise-205-02-03.html` file

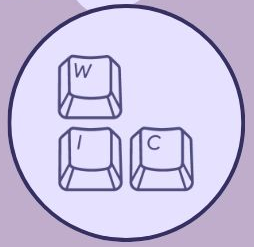
- **Write a CSS rule** to style the `<h3>` element to be `color: hotpink`. However, **only style the** `<h3>` that comes directly after the `<h2>` element.

```
<h2>Heading level 2</h2>
<h3>Heading level 3</h3>
<h3>Heading level 3</h3>
```



Exercise Answer

```
/* Add styles here */
h2 + h3 {
  color: hotpink;
}
```



Exercise 205-02-03: Write an adjacent sibling combinator

Heading level 2

Heading level 3

Heading level 3

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

General Sibling Combinators

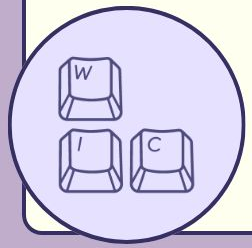
- **General sibling combinators** are written using two selectors separated by a "~".
- General sibling combinators target **any sibling that follows a defined element.**
- In the following example, **any** <h3> **that appears after** the <h2> in source order will be selected - as long as they share the same parent.

```
/* syntax */
E ~ F { }

/* example */
h2 ~ h3 { }
```

```
/* CSS selector */
h2 ~ h3 { }

<!-- HTML markup -->
<h2>Content</h2>
<h3>Content</h3>
<h3>Content</h3>
```

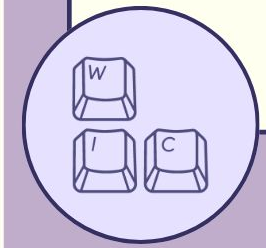


Exercise: Write a General Sibling Combinator

Go to the `exercise-205-02-04.html` file

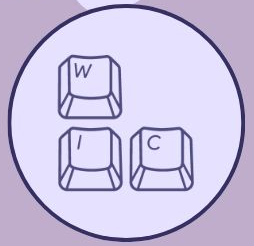
- **Write a CSS rule** to style the `<h3>` element to be `color: lawngreen`. However, **only style all** `<h3>` elements that come after the `<h2>` element, rather than those that come before.

```
<h3>Heading level 3</h3>
<h2>Heading level 2</h2>
<h3>Heading level 3</h3>
<h3>Heading level 3</h3>
```



Exercise Answer

```
/* Add styles here */
h2 ~ h3 {
  color: lawngreen;
}
```



Exercise 205-02-04: Write a general sibling combinator

Heading level 3

Heading level 2

Heading level 3

Heading level 3

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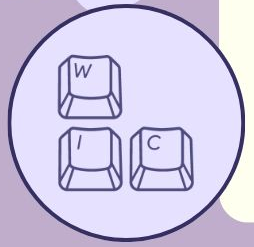
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

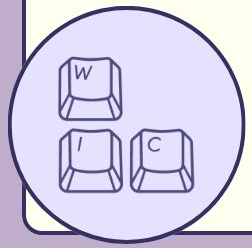
User-Action Pseudo-Classes



https://russmaxdesign.github.io/maxdesign-slides/02-css/205-04-selectors-user-action.html#/

User-Action Pseudo-Classes

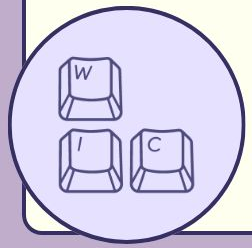
- The **user-action pseudo-classes** allow you to style elements based on the way that users interact with these elements.
- Super useful and commonly used in buttons.



:focus pseudo-class

- The **:focus pseudo-class selector** is written using an element, followed by ":", followed by "focus".
- Whitespace is **not permitted** within the selector.
- The :focus pseudo-class selector targets **elements that have focus** (ones that accept keyboard events).

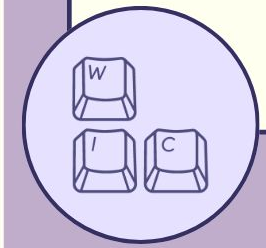
```
/* syntax */
E:focus { }

/* example */
a:focus { }
```



Exercise: Write a :focus Selector

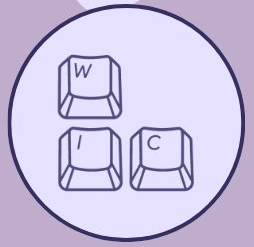
Go to the exercise-205-04-01.html file

- **Write a CSS rule** to style the <a> element to be color: olivedrab, but only when it is in the focus state.
- You will need to use *TAB* keystrokes to focus on the link **to see the :focus state in action**.



Exercise Answer

```
/* Add styles here */
a:focus {
  color: olivedrab;
}
```



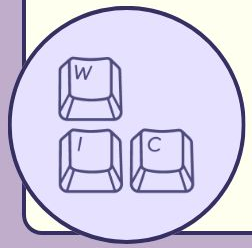
Exercise 205-04-01: Write a :focus selector

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

:hover pseudo-class

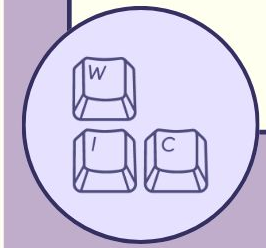
- The **:hover pseudo-class selector** is written using an element, followed by ":", followed by "hover".
- Whitespace is **not permitted** within the selector.
- This selector targets **any element when the user's cursor is over the element**, but the user has not activated it.



Exercise: Write a :hover Selector

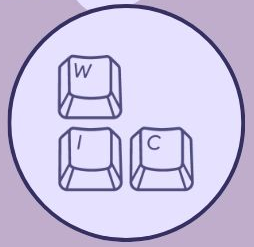
Go to the exercise-205-04-02.html file

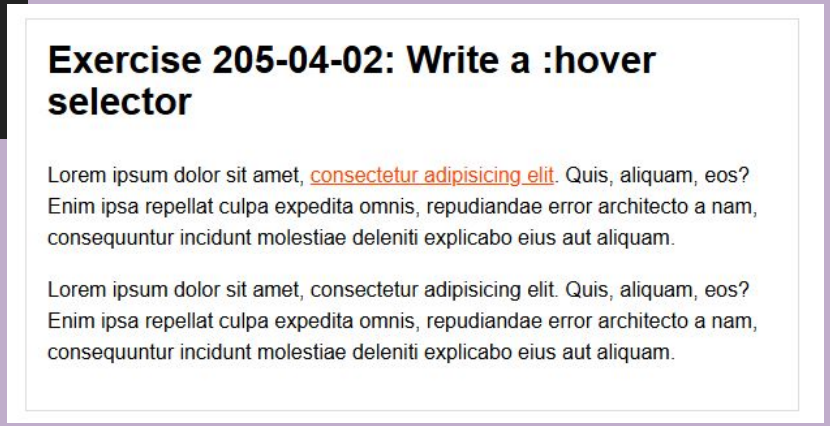
- **Write a CSS rule** to style the <a> element to be color: orangered, but only when it is in the hover state.
- You will need to use hover over the link **to see the :hover state in action**.



Exercise Answer

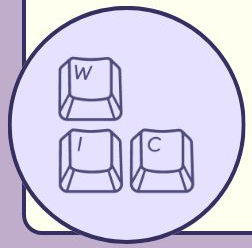
```
/* Add styles here */
a:hover {
  color: orangered;
}
```





:active pseudo-class

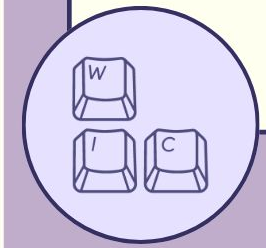
- The **:active pseudo-class selector** is written using an element, followed by ":", followed by "active".
- Whitespace is **not permitted** within the selector.
- The :active pseudo-class selector targets **any element that is currently being activated by the user.**



Exercise: Write an :active Selector

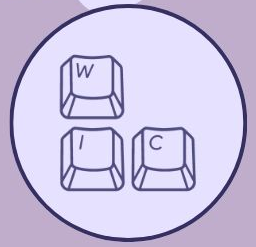
Go to the exercise-205-04-03.html file

- **Write a CSS rule** to style the <a> element to be color: orchid, but only when it is in the active state.
- You will need to click on the link **to see the :active state in action** - just as the link is activated.

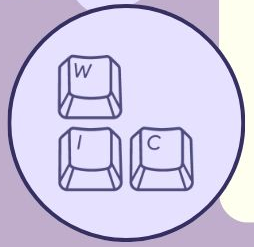


Exercise Answer

```
/* Add styles here */
a:active {
  color: orchid;
}
```



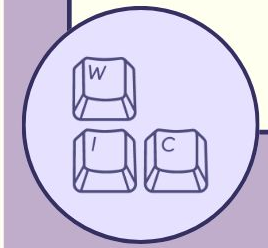
CSS Box Model



https://russmaxdesign.github.io/maxdesign-slides/02-css/208-css-box-model.html#/

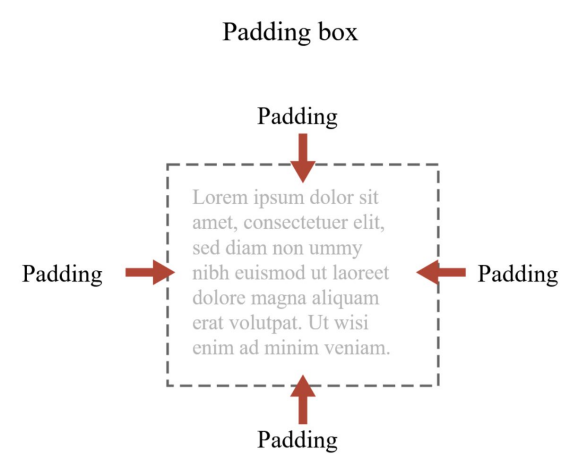
CSS Box Model

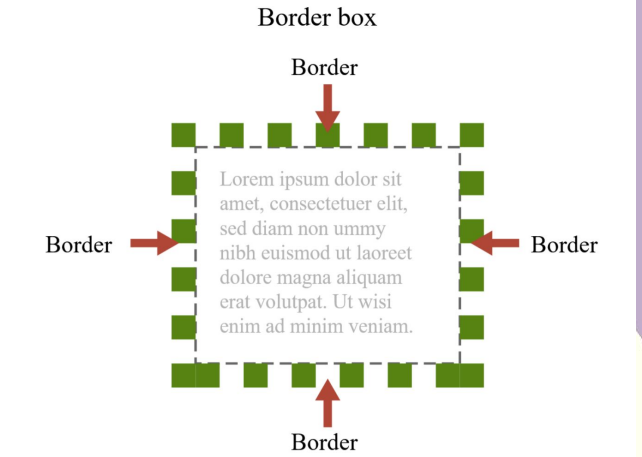
The **CSS box model** describes the rectangular boxes that are created for every element in the document tree.



Content Boxes

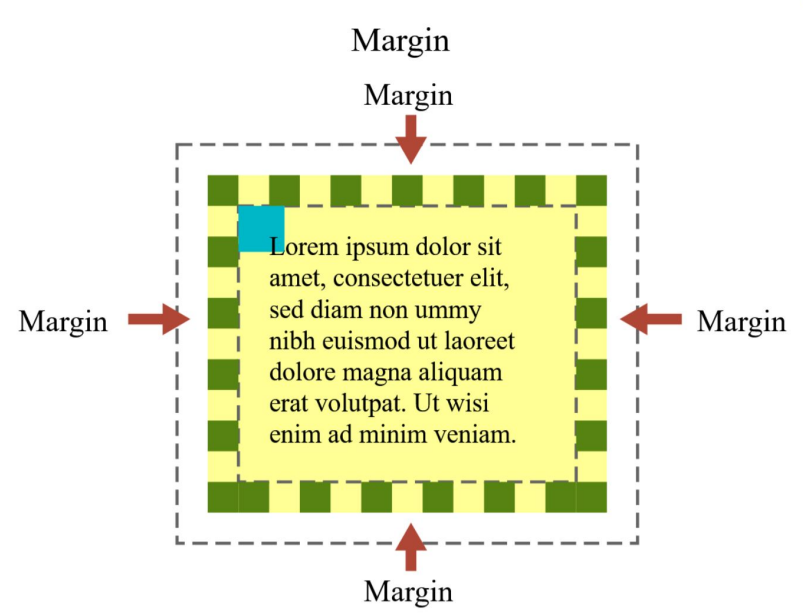
- **Content box:** Invisible box around contents
- **Padding box:** Adds padding around contents
- **Border box:** Describes style of border around padding

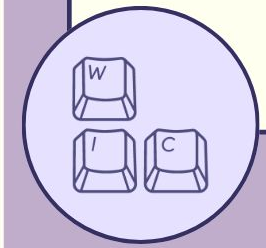




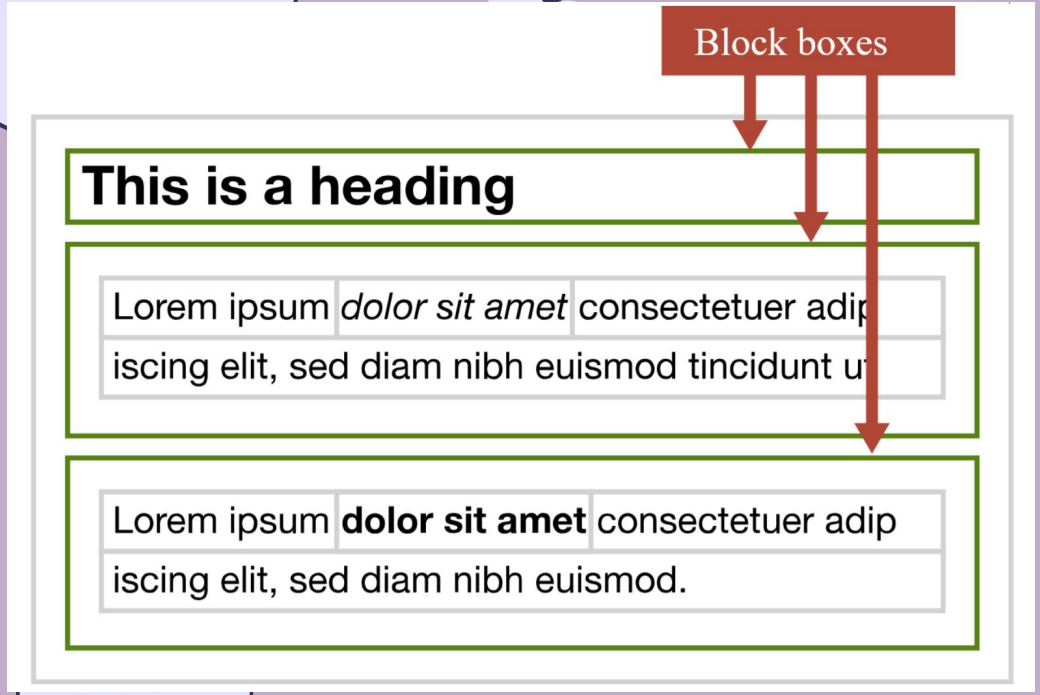
Background and Margins

- **Background color/image:** Up to and including border
- **Margin:** Around outside of border





Block boxes



- **Block boxes** stretch horizontally across the page
- Stack on top of each other
- By default, width is the width of the *containing block* or the *viewport*
- Height is *collapsed*

Block boxes

- Can **specify width/height** by pixel size or percentage
- Or make a block box behave like an inline box
  - I.e. **collapse** the dimensions to the size of the **content**

```
/* Block box with length width */
p {
  width: 200px;
}
```

```
/* Block box with percentage height */
p {
  height: 30%;
}
```

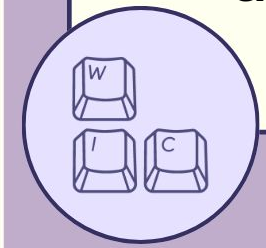
```
/* Block box with percentage width */
p {
  width: 50%;
}
```

```
/* Collapsing a block element */
p {
  display: inline;
}
```

Exercise: Style block elements

Go to the exercise-208-01.html file

1. Write a CSS rule to set a **width of 200px** for the element with a class of **example1**.
2. Write a second CSS rule to set a **width of 60%** for the element with a class of **example2**.
3. Write a third CSS rule to set the element with a class of **example3** to **display: inline**.
4. Write a fourth CSS rule to set a **height of 80px** for the element with a class of **example4**.



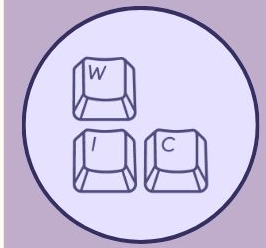
Exercise Answer

```
/* Add styles here */
.example1 {
  width: 200px;
}
```

```
.example2 {
  width: 60%;
}
```

```
.example3 {
  display: inline;
}
```

```
.example4 {
  height: 80px;
}
```



Exercise 208-01: Style some block-level elements

Width

Default width stretched

Example 1: Width sized with a length value

Example 2: Width sized with a percentage value

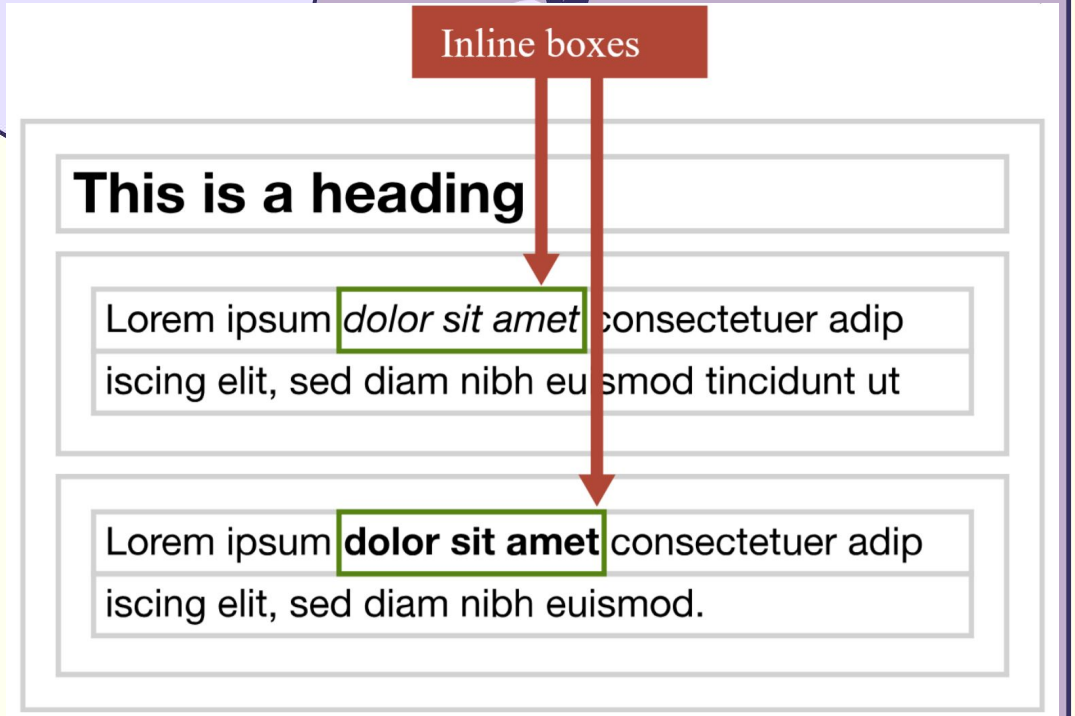
Example 3: Width collapsed via display: inline

Height

Default height collapsed

Example 4: Height sized with a length value

Inline boxes

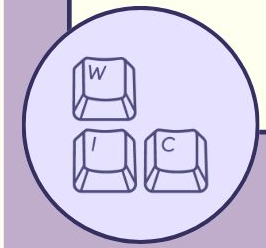


- **Inline boxes** are within one line (can also wrap to the next line)
- Default height and width is *collapsed*
- Margin and padding apply to left and right sides of inline boxes

Exercise: Style inline elements

Go to the exercise-208-02.html file

1. Write a CSS rule to set **padding of 20px** for the element with a class of **example1**.
2. Write a second CSS rule to set a **border of 10px solid red** for the element with a class of **example2**.
3. Write a third CSS rule to set a **margin of 20px** for the element with a class of **example3**.

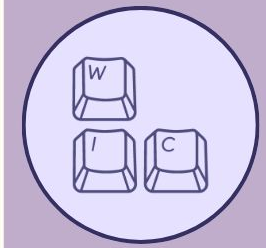


Exercise Answer

```
/* Add styles here */
.example1 {
  padding: 20px;
}
```

```
/* Add styles here */
.example2 {
  border: 10px solid red;
}
```

```
/* Add styles here */
.example3 {
  margin: 20px;
}
```



Exercise 208-02: Style some inline elements

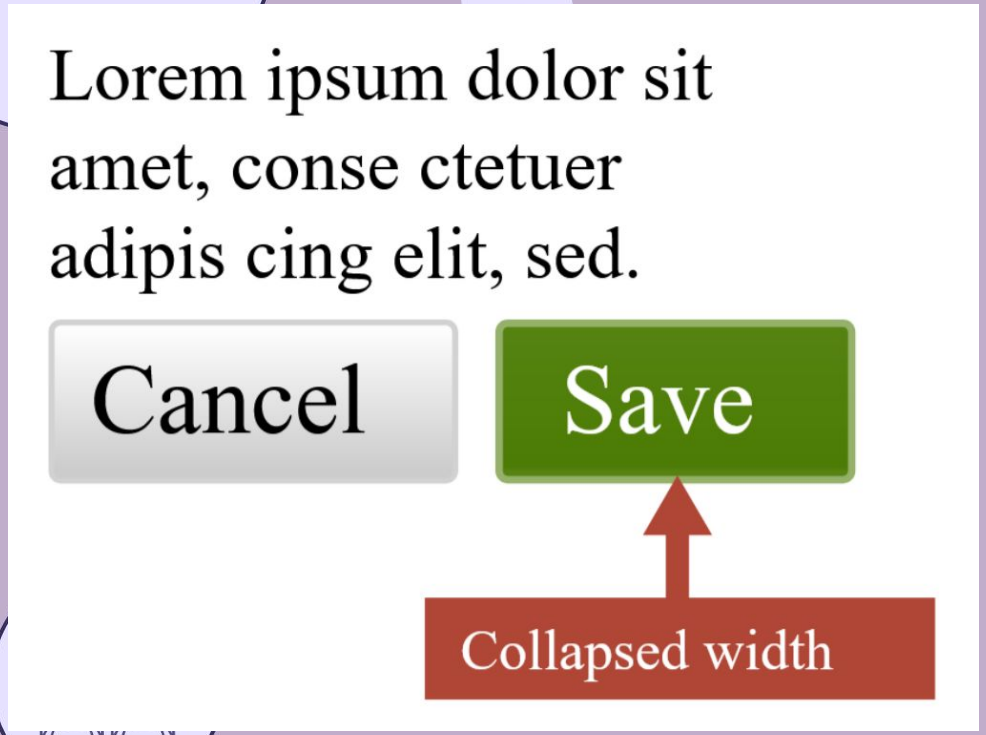
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa *Default inline element* repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa *Example 1 - padding* repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa *Example 2 - border* repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

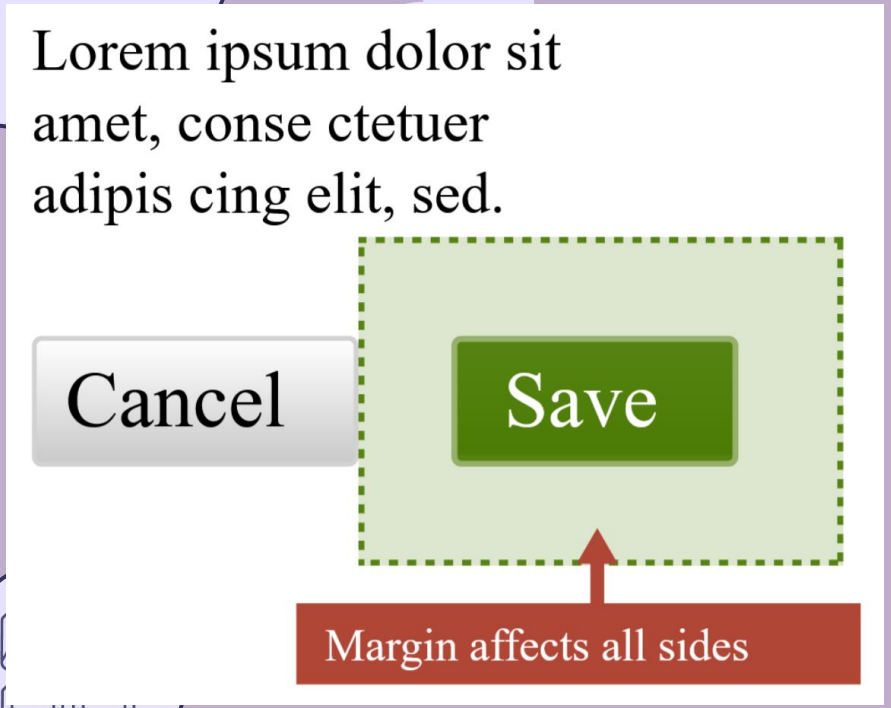
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Quis, aliquam, eos? Enim ipsa *Example 3 - margin* repellat culpa expedita omnis, repudiandae error architecto a nam, consequuntur incidunt molestiae deleniti explicabo eius aut aliquam.

Inline-block boxes



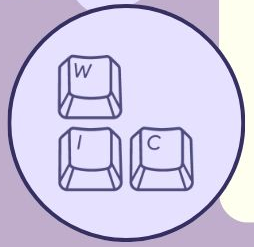
- **Inline boxes** are within one line (can also wrap to the next line)
- Default height and width is *collapsed*
- Height and width can be **sized/stretched** similar to block boxes

Inline-block boxes



- Margin and padding affect **all sides** of inline-block boxes

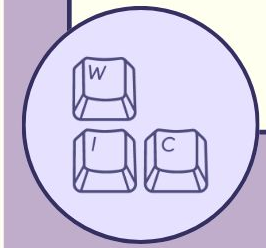
CSS Positioning



https://russmaxdesign.github.io/maxdesign-slides/02-css/209-css-positioning.html#/

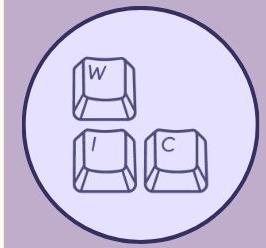
CSS Positioning

- The **position** property specifies how **HTML elements** are positioned.
- The possible values are: **static**, **relative**, **absolute**, **fixed**, and **sticky**.



position: static

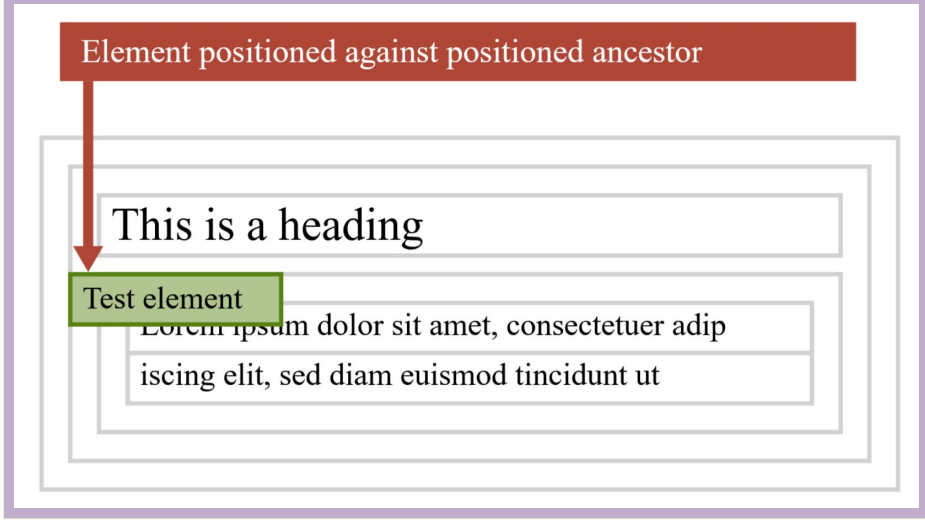
```
/* Static */
p {
  position: static;
}
```



- static is the default value
- Lays element out according to normal flow of document

position: absolute

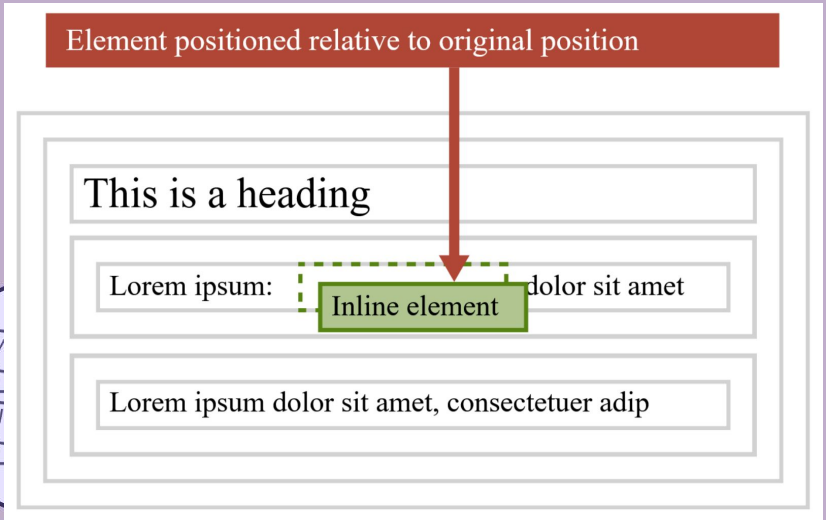
```
/* Absolute */
p {
  position: absolute;
}
```



- Absolute **removes element** from normal document flow
- Absolutely-positioned elements are positioned **relative** to their **closest positioned ancestor** or their **initial containing block**.
- Other elements ignore absolutely positioned element

position: relative

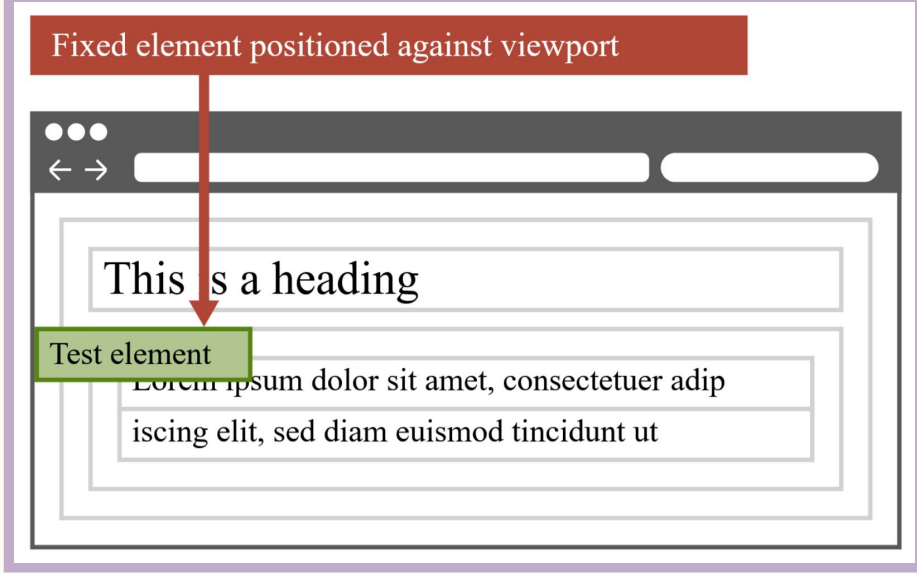
```
/* Relative */
p {
  position: relative;
}
```



- Relative positions elements **relative** to their **original position**

position: fixed

```
p {
  position: fixed;
}
```

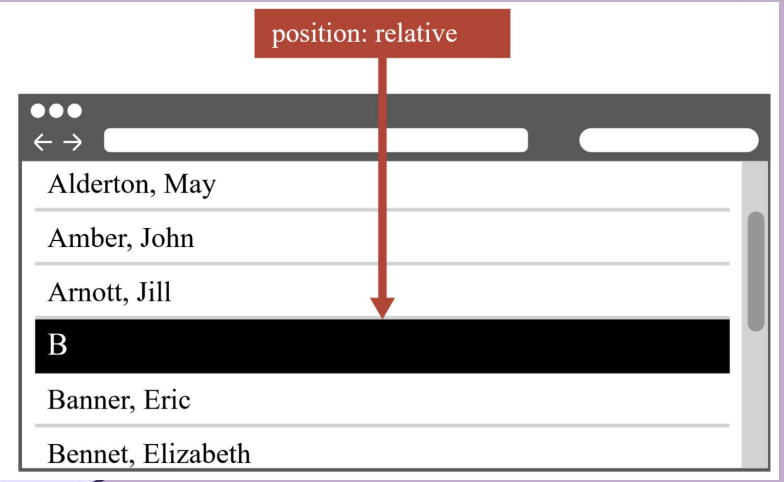


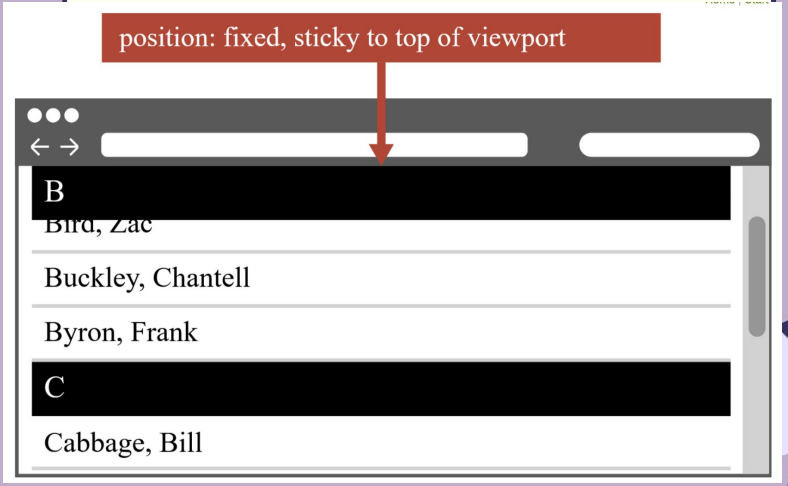
- Fixed elements are positioned against the **viewport**
- These elements will not move when the page is scrolled

position: sticky

```
p {
  position: -webkit-sticky;
  position: sticky;
}
```

- Sticky elements treated as **relative** until their containing block **crosses a threshold**
- Then treated as **fixed**





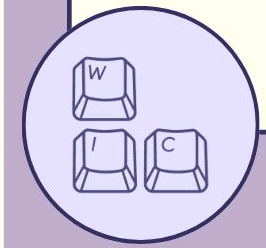
Exercise: Positioning

Go to the exercise-209-04.html file

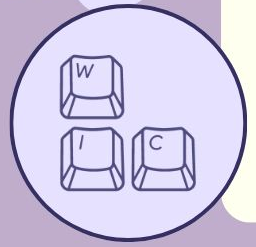
Try out each of the values for the positioning attribute! See what changes when you change the positioning CSS rule for the class contacts-heading, or any other classes that you make.

Possible position values: **static**, **relative**, **absolute**, **fixed**, and **sticky**

```
/* Absolute */
p {
  position: absolute;
}
```



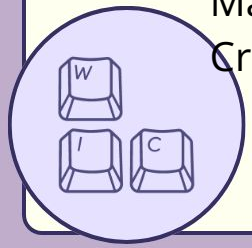
CSS Flexbox Layout



https://www.joshwcomeau.com/css/interactive-guide-to-flexbox/

Flexbox Layout

- One of the most important parts of CSS!!
- **CSS Flexbox** is a powerful layout system used to create flexible and responsive web designs. It provides an intuitive way to arrange elements within a container and control their alignment, distribution, and order.
- A Flex Container is an element to which you apply the CSS property `display: flex;` or `display: inline-flex;`. This makes it a container for Flex Items, which are the child elements within the Flex Container. Flex Items are flexibly arranged inside the container.
- Flexbox operates along two axes: the **"Main Axis"** and the **"Cross Axis."** The Main Axis represents the primary direction of Flex Items' alignment, and the Cross Axis is perpendicular to it.

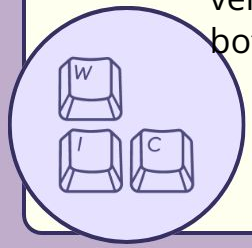


Flex Container Properties

flex-direction

- The flex-direction property determines the direction of the Main Axis. It has four possible values:

- row: Flex Items are placed horizontally in a row from left to right (default).
- row-reverse: Flex Items are placed horizontally in a reversed order from right to left.
- column: Flex Items are placed vertically in a column from top to bottom.
- column-reverse: Flex Items are placed vertically in a reversed order from bottom to top.



justify-content

- The justify-content property aligns Flex Items along the Main Axis. It offers various values to control the spacing between Flex Items:

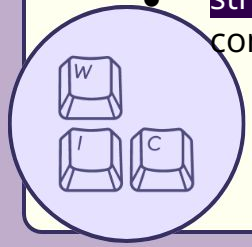
- flex-start: Items are aligned to the start of the container (default).
- flex-end: Items are aligned to the end of the container.
- center: Items are centered within the container.
- space-between: Items are evenly distributed with the first item at the start and the last item at the end.
- space-around: Items are evenly distributed with equal space around them.
- space-evenly: Items are evenly distributed with equal space around and at the start and end.

Flex Container Properties

align-items

- The align-items property aligns Flex Items along the Cross Axis. It has the following values:

- flex-start: Items are aligned to the start of the container.
- flex-end: Items are aligned to the end of the container.
- center: Items are centered along the Cross Axis.
- baseline: Items are aligned based on their text baselines.
- stretch: Items are stretched to fill the container along the Cross Axis (default).



flex-wrap

- The flex-wrap property determines whether Flex Items should wrap to a new line when they exceed the Flex Container's width. It has three possible values:

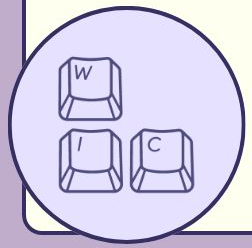
- nowrap: Items are displayed in a single line (default).
- wrap: Items wrap to a new line as necessary.
- wrap-reverse: Items wrap to a new line in reverse order.

Flex Item Properties

flex-grow, flex-shrink, and flex-basis

- These properties are collectively known as the "flex shorthand." They control the growth, shrinking, and initial size of Flex Items.

- flex-grow: Determines how much an item should grow relative to other items when extra space is available.
- flex-shrink: Determines how much an item should shrink relative to other items when there is not enough space.
- flex-basis: Specifies the initial size of an item before any available space is distributed.

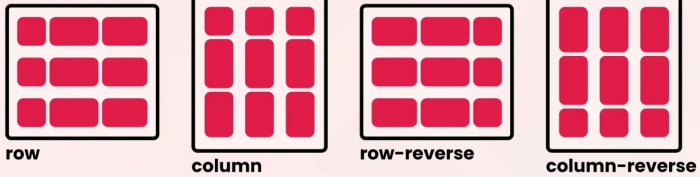


order

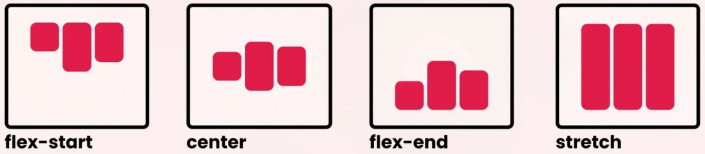
- The order property allows you to change the order in which Flex Items appear within the Flex Container without changing their source order in the HTML.

CSS Flexbox

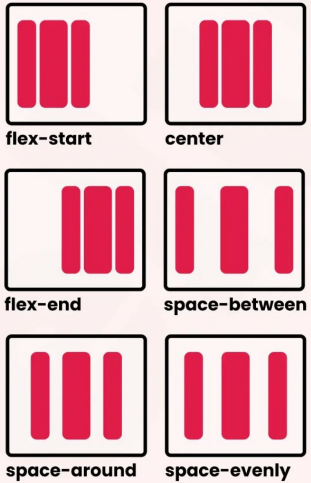
flex-direction



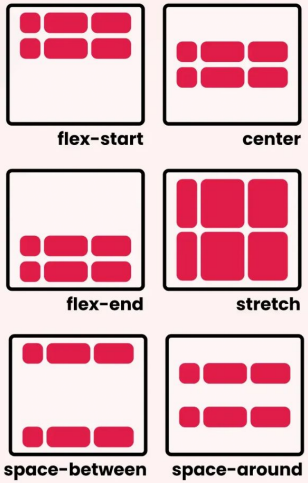
align-items

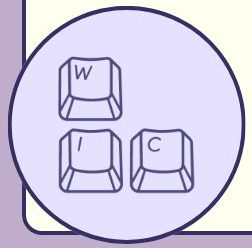


justify-content



align-content



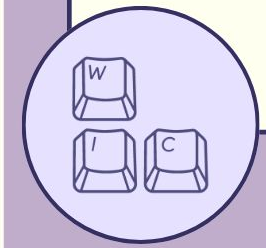


@eludadev

Exercise: Explore Flexbox

Go to the flexbox.html file and explore the different flex properties that you just learned

- Another really cool interactive guide: https://www.joshwcomeau.com/css/interactive-guide-to-flexbox/

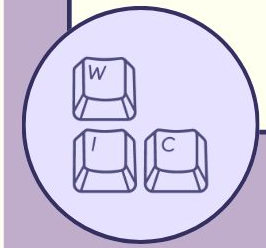


Game: Flexbox

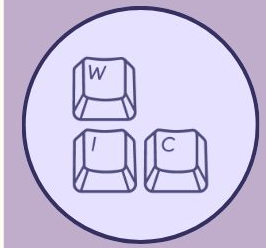
Learn how to use flex by playing these games:

https://codingfantasy.com/games/flexboxadventure/play

https://flexboxfroggy.com/



Here are more CSS Slides that cover a lot more CSS ideas and properties!



https://russmaxdesign.github.io/maxdesign-slides/index.html

WIC Events This Week!

Fall Quarter 2024 Events

Week 6 Events Nov 4-8

Mon 4	Community hours	CSE B225 4-5 pm
Tues 5	CSS Workshop	ASML 4-5 pm
	BPC Prep Day	Qualcomm 5:30-6:30 pm
Wed 6	Community Hours	Tables Outside CSE 3-4 pm
Thurs 7	First-Year Welcome to San Diego Series: UTC Run!	Trolley Station 5:30-6:30 pm
Sat 9	EDGE College Workshop	CSE B250&B260 10 am-1 pm

Thank you!

Make sure to sign in to get your membership points!