



Web programming I

Section 4

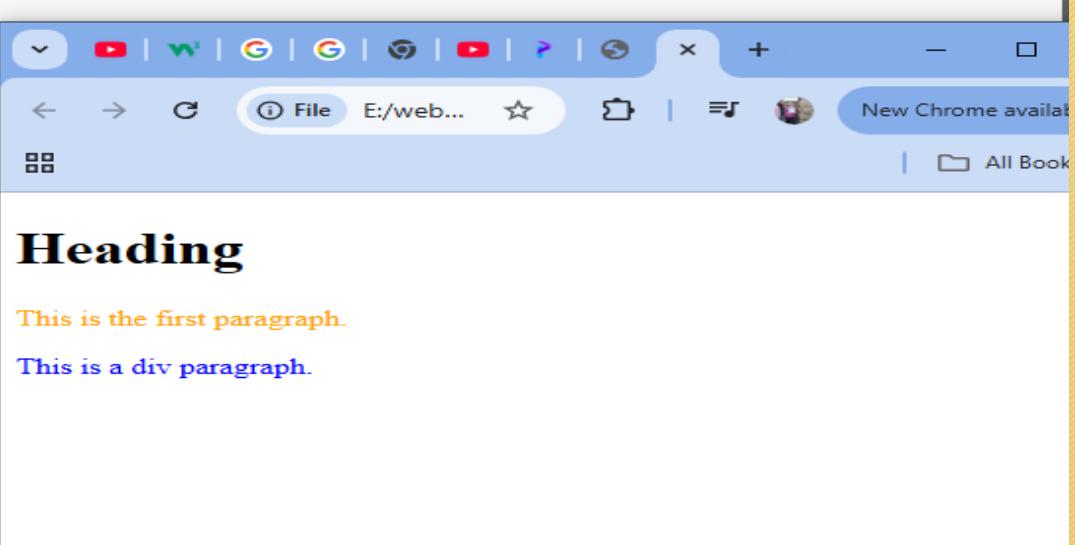
Eng/ Mona AbdelAziz

Selectors

- selectors are used to "find" (or select) the HTML elements you want to style Selectors can be divided into five categories
- simple selectors(type-class-id-group-universal)
- Combinator selectors.
- Attribute selectors.
- Pseudo-class selectors.
- Pseudo-elements selectors.

Descendant combinator (space)

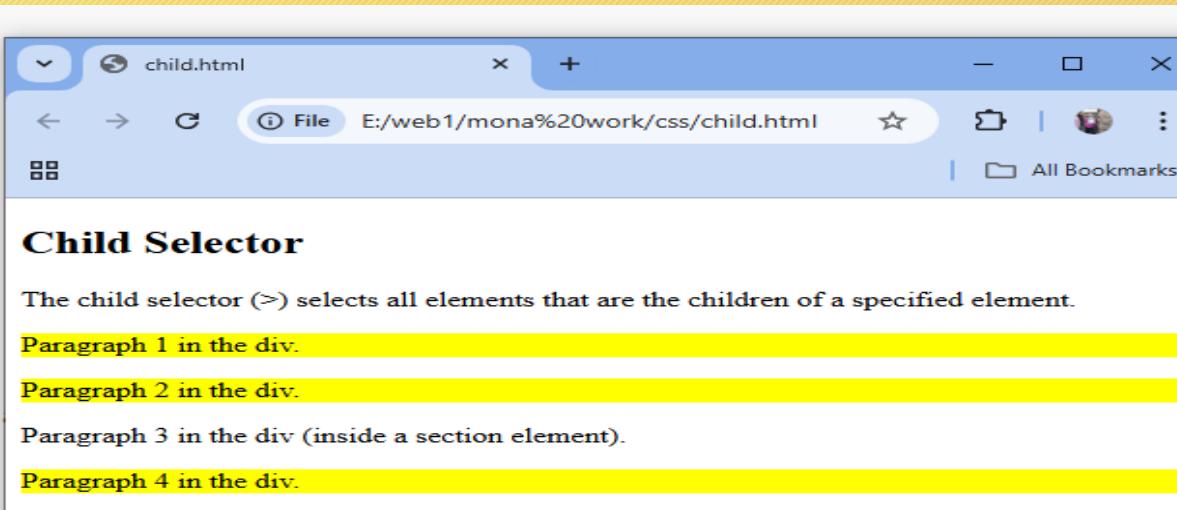
```
1  <!DOCTYPE html>
2  ▼ <html>
3  ▼ <head>
4  ▼ <style>
5  ▼ div p {
6      color: blue;
7  }
8
9 ▼ p {
10    color: orange;
11}
12 </style>
13 </head>
14 ▼ <body>
15   <h1>Heading</h1>
16   <p>This is the first paragraph.</p>
17 ▼ <div>
18   <p>This is a div paragraph.</p>
19 </div>
20 </body>
21 </html>
```



child selector (>)

- selects all elements that are the children of a specified element.

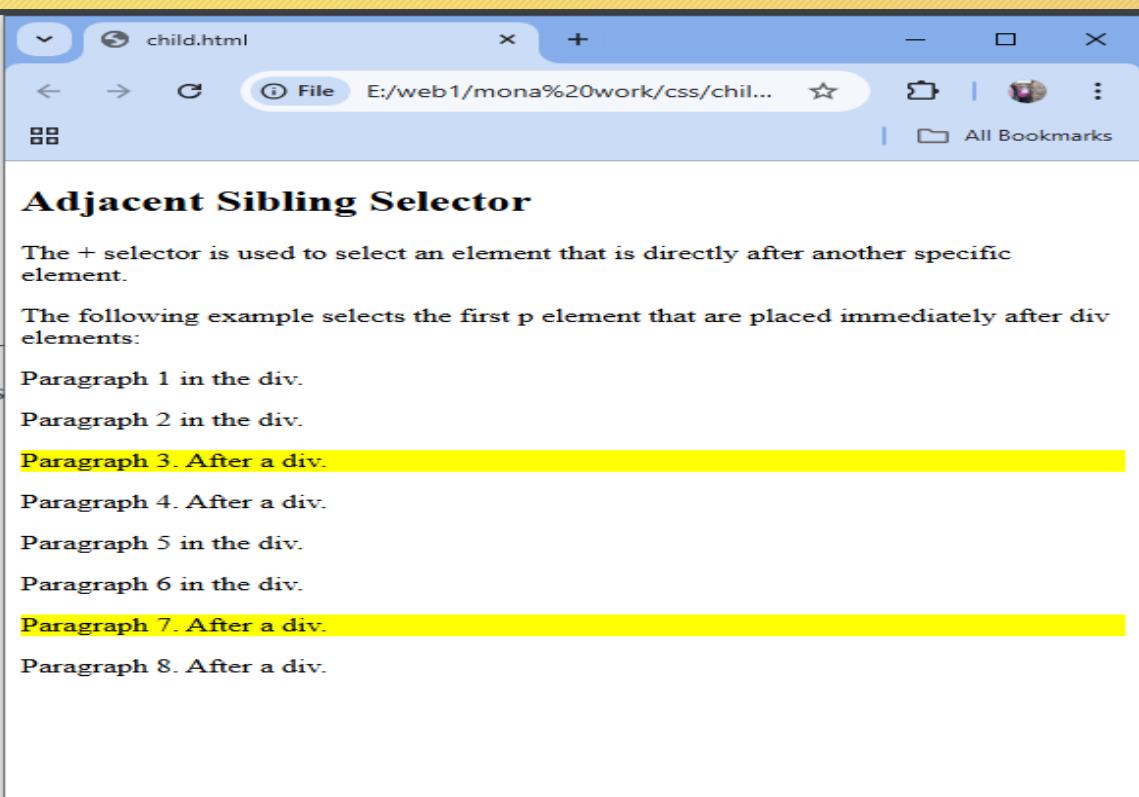
```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  div > p {
6      background-color: yellow;
7  }
8  </style>
9  </head>
10 <body>
11
12 <h2>Child Selector</h2>
13
14 <p>The child selector (>) selects
15 <div>
16     <p>Paragraph 1 in the div.</p>
17     <p>Paragraph 2 in the div.</p>
18 <section>
19     <!-- not Child but Descendant -->
20     <p>Paragraph 3 in the div (inside a section element).</p>
21 </section>
22     <p>Paragraph 4 in the div.</p>
23 </div>
24 </body>
25 </html>
```



Next Sibling Combinator (+)

- used to select an element that is directly after another specific element

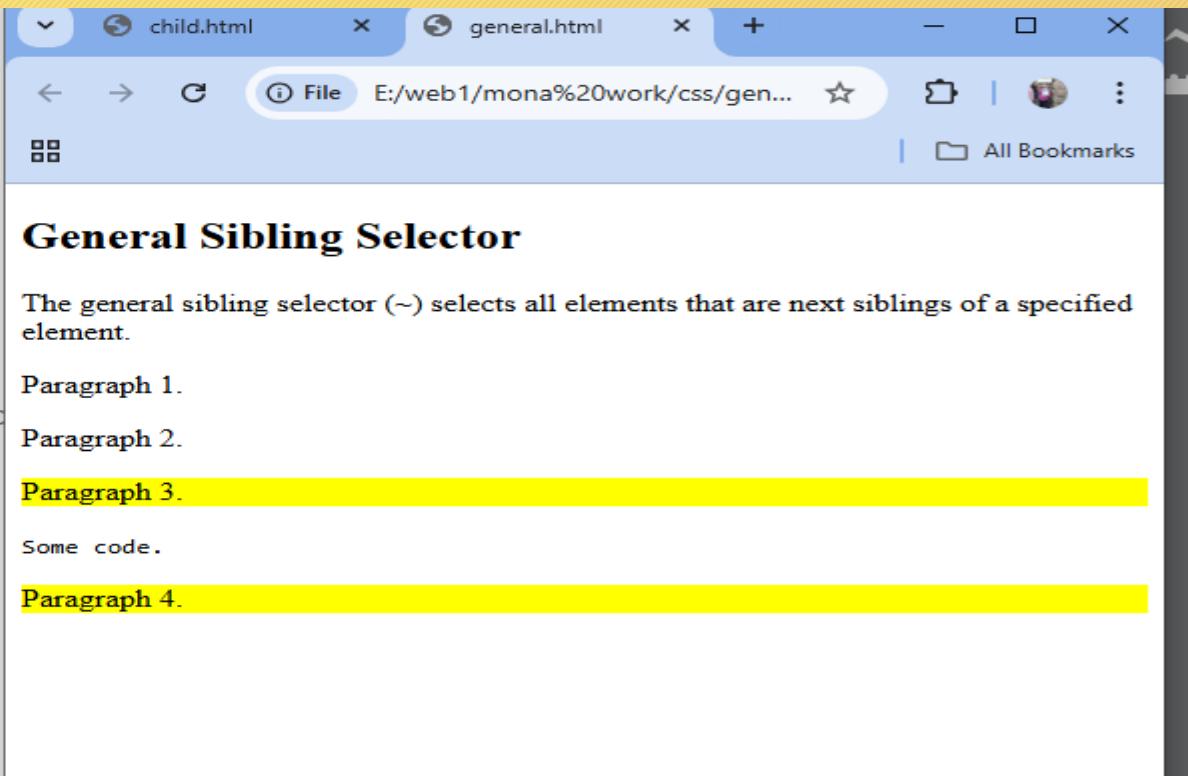
```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  div + p {
6      background-color: yellow;
7  }
8  </style>
9  </head>
10 <body>
11 <h2>Adjacent Sibling Selector</h2>
12 <p>The + selector is used to select an el
element.</p>
13 <p>The following example selects the firs
elements:</p>
14 <div>
15 <p>Paragraph 1 in the div.</p>
16 <p>Paragraph 2 in the div.</p>
17 </div>
18 <p>Paragraph 3. After a div.</p>
19 <p>Paragraph 4. After a div.</p>
20 <div>
21 <p>Paragraph 5 in the div.</p>
22 <p>Paragraph 6 in the div.</p>
23 </div>
24 <p>Paragraph 7. After a div.</p>
25 <p>Paragraph 8. After a div.</p>
26 </body>
27 </html>
```



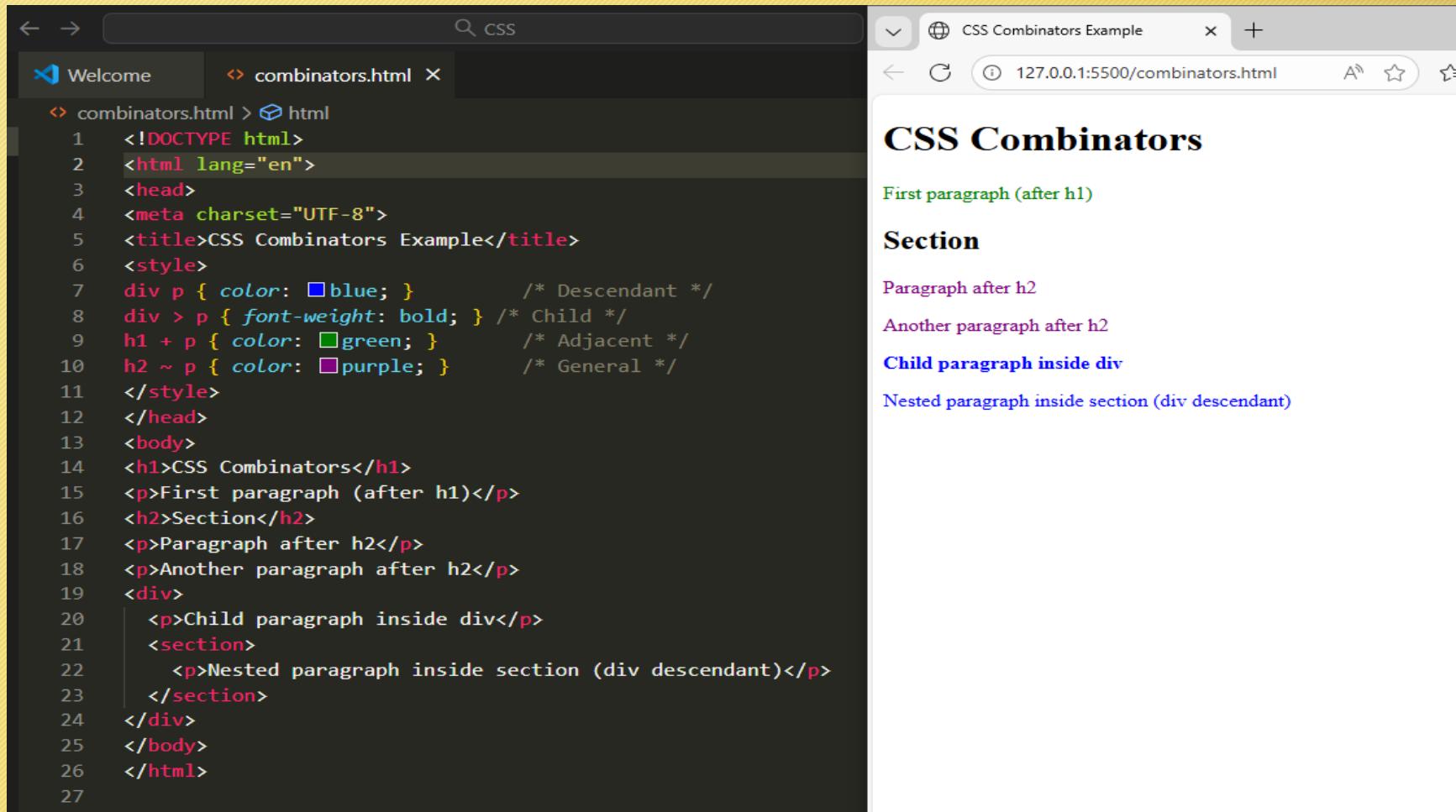
general-sibling Combinator (~)

- selects all elements that are next siblings of a specified element.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  div ~ p {
6      background-color: yellow;
7  }
8  </style>
9  </head>
10 <body>
11 <h2>General Sibling Selector</h2>
12 <p>The general sibling selector (~) selects all elements that are next siblings of a specified element.</p>
13 <p>Paragraph 1.</p>
14 <div>
15 <p>Paragraph 2.</p>
16 </div>
17 <p>Paragraph 3.</p>
18 <code>Some code.</code>
19 <p>Paragraph 4.</p>
20 </body>
21 </html>
```



All types Example



The image shows a screenshot of a browser window displaying a CSS combinator example. The browser title is "CSS Combinators Example" and the URL is "127.0.0.1:5500/combinators.html". The page content includes an

CSS Combinators

, a

First paragraph (after h1)

, an

Section

, a

Paragraph after h2

, another

Another paragraph after h2

, a

Child paragraph inside div

, and a nested

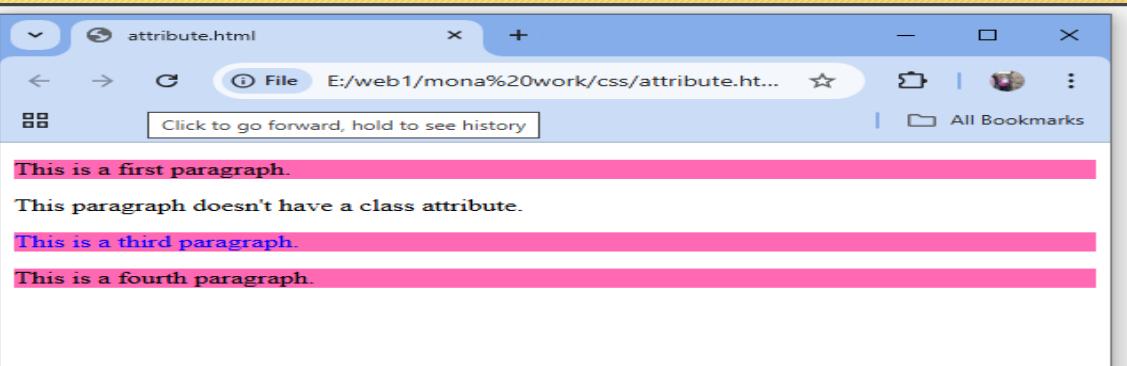
Nested paragraph inside section (div descendant)

. To the left of the browser window, there is a code editor showing the corresponding HTML and CSS code.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>CSS Combinators Example</title>
<style>
div p { color: blue; }           /* Descendant */
div > p { font-weight: bold; } /* Child */
h1 + p { color: green; }        /* Adjacent */
h2 ~ p { color: purple; }       /* General */
</style>
</head>
<body>
<h1>CSS Combinators</h1>
<p>First paragraph (after h1)</p>
<h2>Section</h2>
<p>Paragraph after h2</p>
<p>Another paragraph after h2</p>
<div>
  <p>Child paragraph inside div</p>
  <section>
    <p>Nested paragraph inside section (div descendant)</p>
  </section>
</div>
</body>
</html>
```

Attribute Selector

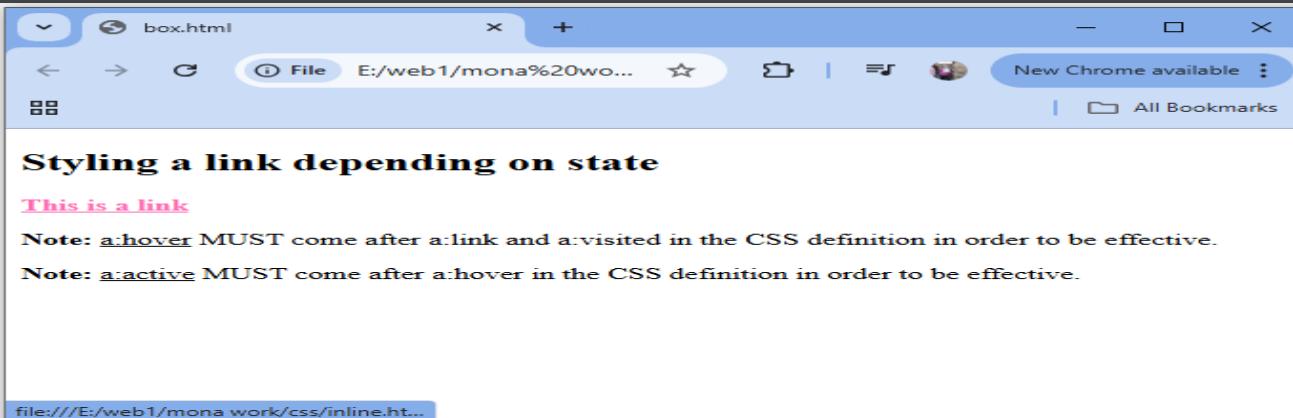
- The [attribute] selector is used to select elements with a specified attribute allow you to style HTML elements based on their attributes or attribute values.
- Syntax : **element[Attribute]**



```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  p[class] {
6      background-color: hotpink;
7  }
8
9  p[class="third"] {
10    color: blue;
11}
12</style>
13</head>
14<body>
15
16<body>
17  <p class="first">This is a first paragraph.</p>
18  <p>This paragraph doesn't have a class attribute.</p>
19  <p class="third">This is a third paragraph.</p>
20  <p class="fourth">This is a fourth paragraph.</p>
21</body>
22
23</body>
24</html>
```

CSS Pseudo-Classes Selectors

A pseudo-class is used to define a special state of an element. Pseudo-classes are keywords that can be added to selectors to style elements based on their state, position, or interaction (like when you hover, click, or focus).



The screenshot shows a browser window titled "box.html" displaying the content of "inline.html". The page contains the following text:

Styling a link depending on state

This is a link

Note: [a:hover](#) MUST come after [a:link](#) and [a:visited](#) in the CSS definition in order to be effective.

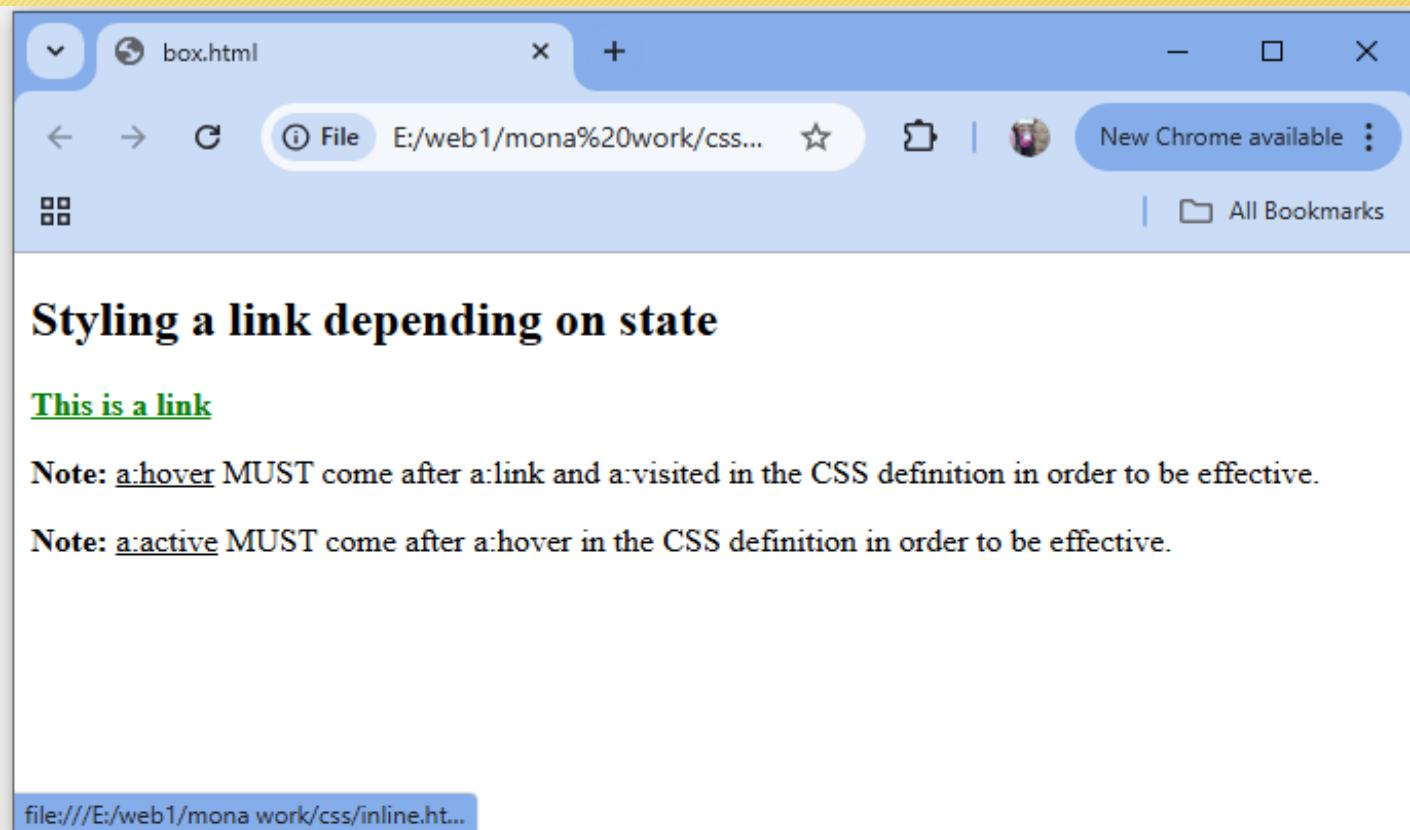
Note: [a:active](#) MUST come after [a:hover](#) in the CSS definition in order to be effective.

file:///E:/web1/mona work/css/inline.htm...

The browser's address bar shows "E:/web1/mona%20wo...".

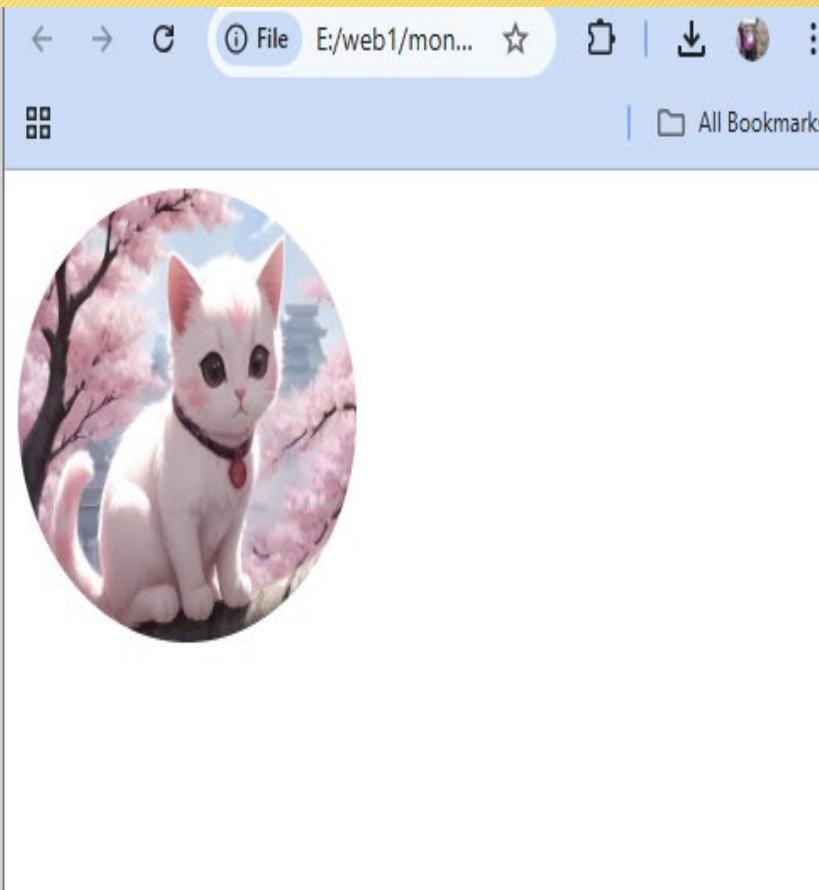
```
<!DOCTYPE html>
3 <head>
4 <style>
5 /* unvisited link */
6 a:link {
7   color: red;
8 }
9 /* visited link */
10 a:visited {
11   color: green;
12 }
13 /* mouse over link */
14 a:hover {
15   color: hotpink;
16 }
17 /* selected link */
18 a:active {
19   color: blue;
20 }
21 </style>
22 </head>
23 <body>
24 <h2>Styling a link depending on state</h2>
25 <p><b><a href="inline.html" target="_blank">This is a link</a></b></p>
26 <p><b>Note:</b> <u>a:hover</u> MUST come after a:link and a:visited in the CSS definition
in order to be effective.</p>
27 <p><b>Note:</b> <u>a:active</u> MUST come after a:hover in the CSS definition in order to
be effective.</p>
28 </body>
29 </html>
```

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5      a:active {
6          color: blue;
7      }
8      a:hover {
9          color: hotpink;
10         }
11     /* unvisited link */
12    a:link {
13        color: red;
14    }
15     /* visited link */
16    a:visited {
17        color: green;
18    }
19     /* mouse over link */
20
21     /* selected link */
22
23  </style>
24  </head>
25  <body>
26  <h2>Styling a link depending on state</h2>
27  <p><b><a href="inline.html" target="_blank">This is a link</a></b></p>
28  <p><b>Note:</b> <u>a:hover</u> MUST come after a:link and a:visited in the CSS definition
in order to be effective.</p>
29  <p><b>Note:</b> <u>a:active</u> MUST come after a:hover in the CSS definition in order to
```



Example2

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  img:hover{
6      width: 200px;
7      height: 200px;
8      border-radius: 70%;
9  }
10 </style>
11 </head>
12 <body>
13 
14 </body>
15 </html>
```



Pseudo-elements selectors.

CSS pseudo-elements selectors select the specific part of HTML elements.

- Style the first letter or line, of an element
- Insert content before or after an element
- Style the markers of list items
- Style the viewBox behind a dialog box

Syntax

element: specifies the HTML element

pseudo-element: specifies the specific part of the element that we want to target

Pseudo-element keywords are added to the selectors and preceded by a double colon (::)

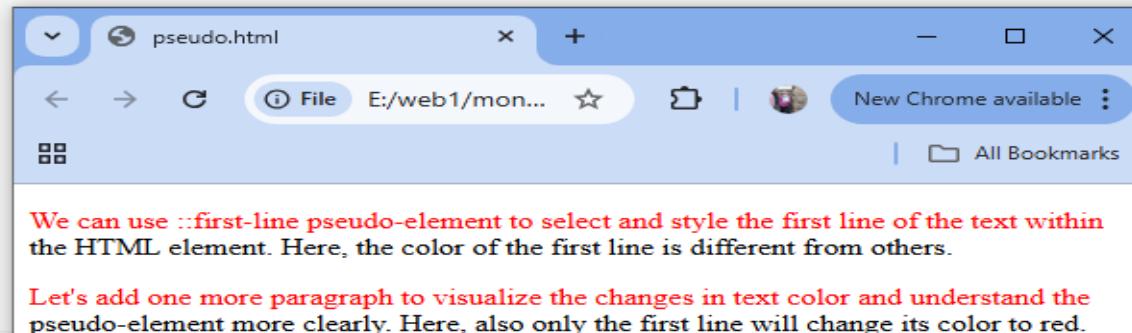
```
element::pseudo-element {  
    /* CSS styles */  
}
```

Types of Pseudo-Elements

- **::first-line:** selects the first line of text within a block-element
- **::first-letter:** selects the first letter of text
- **::before:** inserts content before the actual content of element
- **::after:** inserts content after the actual content of element
- **::marker:** selects the marker of list elements
- **::selection:** styles the user selected part of HTML elements

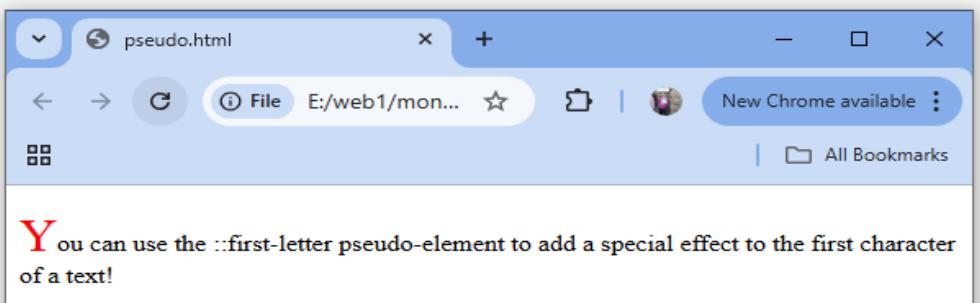
CSS first-line Pseudo- Element

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  p::first-line {
6      color: red;
7  }
8  </style>
9  </head>
10 <body>
11 <p>
12 We can use ::first-line pseudo-element to select and style
13 the first line of the text within the HTML element. Here, the color
14 of the first line is different from others.
15 </p>
16 <p>
17 Let's add one more paragraph to visualize the changes in text color
18 and understand the pseudo-element more clearly. Here, also only the first
19 line will change its color to red.
20 </p>
21 </body>
22 </html>
```



CSS first-letter Pseudo-Element

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  p::first-letter {
6      color: #ff0000;
7      font-size: xx-large;
8  }
9  </style>
10 </head>
11 <body>
12
13 <p>You can use the ::first-letter pseudo-element to add a special effect to the first
character of a text!</p>
14
15 </body>
16 </html>
```



Before pseudo element

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      h1::before {
        content: url(icon.png);
      }
    </style>
  </head>
  <body>
    <h1>The general sibling selector selects all elements that
      are siblings of a specified element</h1>
  </body>
</html>
```

after Pseudo-element

```
 1  <!DOCTYPE html>
 2▼ <html>
 3▼ <head>
 4▼ <style>
 5▼   h3::after {
 6
 7     content: url(icon.png);
 8   }
 9
10  </style>
11  </head>
12▼ <body>
13  <h3>The general sibling selector selects all elements that
      are siblings of a specified elementThe general sibling
      selector selects all elements that are siblings of a
      specified element.The general sibling selector selects all
      elements that are siblings of a specified elementThe
      general sibling selector selects all elements that are
      siblings of a specified element</h3>
14  </body>
```

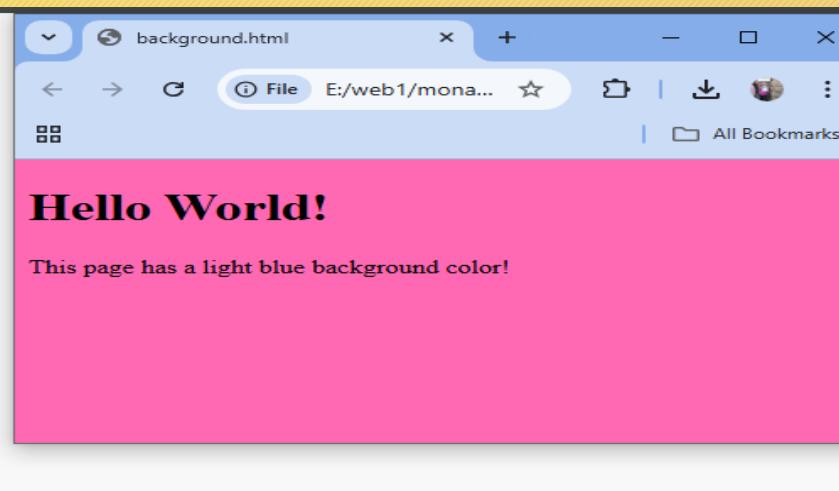
CSS Backgrounds

- The CSS background properties are used to add background effects for elements.

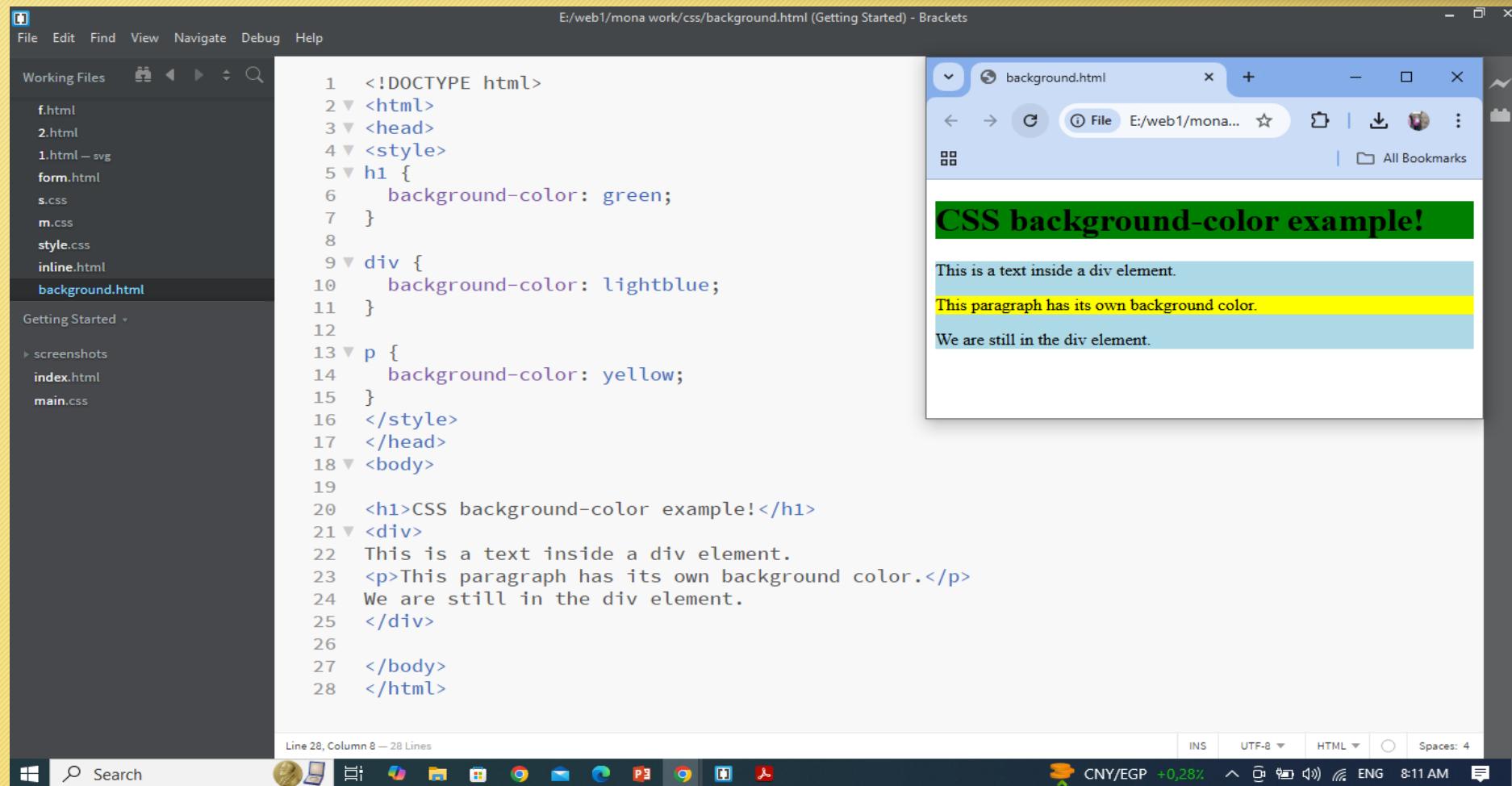
CSS background-color

- The background-color property specifies the background color of an element.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  body {
6      background-color:hotpink;
7  }
8  </style>
9  </head>
10 <body>
11
12 <h1>Hello World!</h1>
13
14 <p>This page has hotpink background color!</p>
15
16 </body>
17 </html>
```



Other elements



The image shows a Windows desktop environment. On the left, there is a Brackets code editor window titled "E:/web1/mona work/css/background.html (Getting Started) - Brackets". The code editor displays the following HTML and CSS code:

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  h1 {
6      background-color: green;
7  }
8
9  div {
10     background-color: lightblue;
11 }
12
13 p {
14     background-color: yellow;
15 }
16 </style>
17 </head>
18 <body>
19
20 <h1>CSS background-color example!</h1>
21 <div>
22 This is a text inside a div element.
23 <p>This paragraph has its own background color.</p>
24 We are still in the div element.
25 </div>
26
27 </body>
28 </html>
```

The status bar at the bottom of the Brackets window indicates "Line 28, Column 8 — 28 Lines". On the right, a Microsoft Edge browser window is open, displaying the rendered HTML. The page title is "background.html". The content of the page is:

CSS background-color example!

This is a text inside a div element.

This paragraph has its own background color.

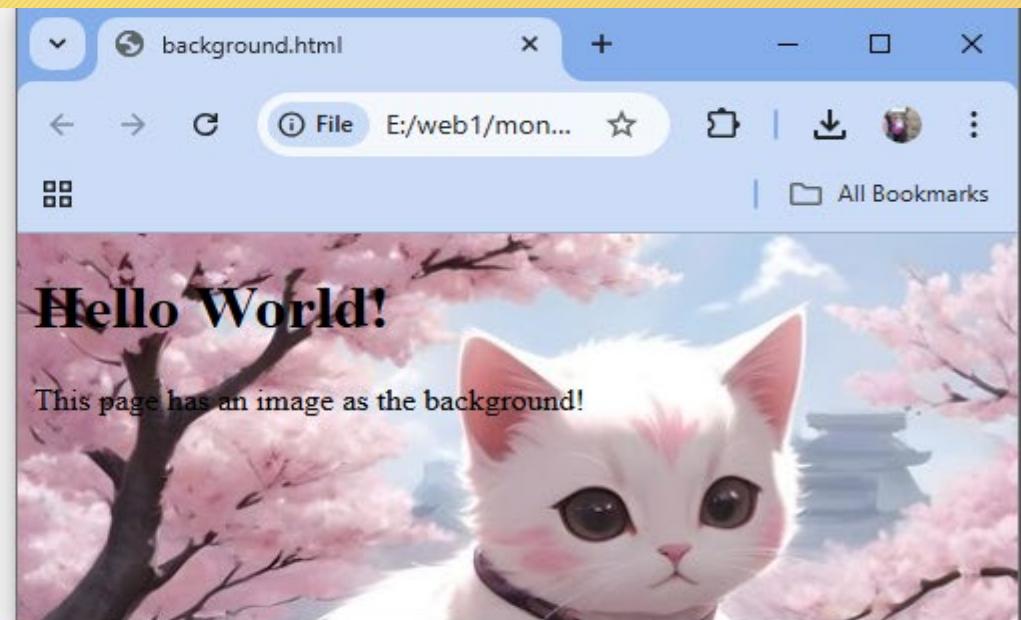
We are still in the div element.

The browser's status bar shows "CNY/EGP +0,28%" and the time "8:11 AM". The taskbar at the bottom of the screen includes icons for File Explorer, Mail, and other system applications.

CSS Background Image

- specifies an image to use as the background of an element.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  body {
6      background-image: url("cat.jpg");
7      background-size: cover;
8  }
9  </style>
10 </head>
11 <body>
12
13 <h1>Hello World!</h1>
14
15 <p>This page has an image as the background!</p>
16
17 </body>
18 </html>
```



Background Attachment

- property controls whether the background image scrolls or remains fixed with the page's content
- **Scroll**:allows the background image to scroll with the page (default value)
- **Fixed**: stops the background image from scrolling with the page
- **Initial**:sets the property value to default
- **Local**:allows the background image to scroll with the element's content
- **Inherit**: inherits the property value from its parent element

CSS Gradient

- CSS gradients are the smooth transitions between two or more colors. They are used to decorate the background, borders, and other elements on a webpage.
- There are three types of gradients in CSS,
 - ❑ Linear Gradients
 - ❑ Radial Gradient
 - ❑ Conic Gradient

CSS linear gradient

E:/web1/mona work/css/lgradient.html (Getting Started) - Brackets

File Edit Find View Navigate Debug Help

Working Files

- 1.html - svg
- form.html
- s.css
- m.css
- style.css
- inline.html
- colors.html - css
- outline.html
- lgradient.html**

Getting Started

- screenshots
- index.html
- main.css

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  div {
6      height: 200px;
7      background: linear-gradient(hotpink, red);
8  }
9  </style>
10 </head>
11 <body>
12 <div>CSS linear-gradient() function creates a smooth linear transition between two or more
13 colors</div>
14 </body>
15 </html>
```

lgradient.html

File E:/web1/mona%20work/css/lgradient.html

CSS linear-gradient() function creates a smooth linear transition between two or more colors

Line 7, Column 44 — Selected 2 columns — 15 Lin

Search

10°C سماء صافية ENG 4:46 AM

CSS radial gradient

File Edit Find View Navigate Debug Help

Working Files 1.html – svg form.html s.css m.css style.css inline.html colors.html – css outline.html lgradient.html

Getting Started screenshots index.html main.css

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  div {
6      height: 200px;
7      background: radial-gradient(hotpink, red);
8  }
9  </style>
10 </head>
11 <body>
12 <div>CSS linear-gradient() function creates a smooth linear transition between two or more
13 colors</div>
14 </body>
15 </html>
```

Line 7, Column 33 — 15 Lines

The screenshot shows the Brackets IDE interface. On the left, the 'Working Files' sidebar lists several files: 1.html – svg, form.html, s.css, m.css, style.css, inline.html, colors.html – css, outline.html, and lgradient.html (which is currently selected). Below that is the 'Getting Started' section with links to screenshots, index.html, and main.css. The main workspace displays the HTML code for lgradient.html. The code includes a CSS rule for a div element with a height of 200px and a background set to a radial gradient transitioning from hotpink to red. A preview window in the center shows the resulting red gradient background. At the bottom, the Windows taskbar is visible with various icons and system status.

Borders-style values

- `solid` : creates a border with a single solid line
- `dotted` : creates a border with a series of dots
- `dashed` : creates a border with a series of dashes
- `double` : creates a border with two parallel lines
- `groove` : creates a border with a carved-in 3D effect
- `ridge` : creates a border with a raised 3D effect
- `inset` : creates a border with a pushed-in 3D effect
- `outset` : creates a border with a popped-out 3D effect
- `none` : no border is displayed
- `hidden` : the border is hidden

CSS border-style property as a Shorthand Property

The screenshot shows the Brackets IDE interface. On the left, the file tree displays several files: 1.html - svg, form.html, s.css, m.css, style.css, inline.html, colors.html - css, outline.html, and border short.html (which is currently selected). The main editor area contains the following CSS code:

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  /* set all side styles to solid */
6  .one-value {
7      border-style: solid;
8  }
9  /* set top/bottom to solid, left/right to dashed */
10 .two-value {
11     border-style: solid dashed;
12 }
13 /* set top to solid, left/right to dashed, bottom to dotted */
14 .three-value {
15     border-style: solid dashed dotted;
16 }
17 /* set top to solid, right to dashed, bottom to dotted, left to groove */
18 .four-value {
19     border-style: solid dashed dotted groove;
20 }
21 </style>
22 </head>
23 <body>
24     <p class="one-value">border-style: solid;</p>
25     <p class="two-value">border-style: solid dashed;</p>
26     <p class="three-value">border-style: solid dashed dotted;</p>
27     <p class="four-value">border-style: solid dashed dotted groove;</p>
28 </body>
29 </html>
```

On the right, a browser window titled "border short.html" shows four paragraphs demonstrating different border styles:

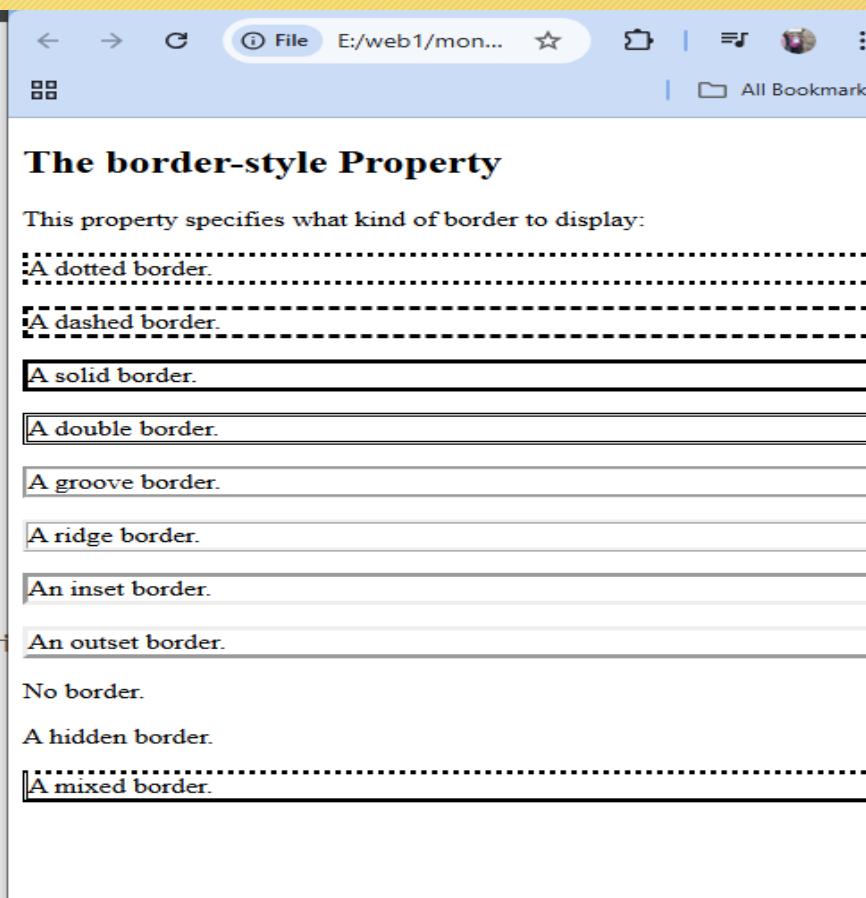
- border-style: solid;
- border-style: solid dashed;
- border-style: solid dashed dotted;
- border-style: solid dashed dotted groove;

The status bar at the bottom indicates "Line 28, Column 12 — 29 Lines", "INS", "UTF-8", "HTML", "Spaces: 4", and system information like "سماء صافية 9°C", "ENG", "5:04 AM", and a battery icon.

Borders

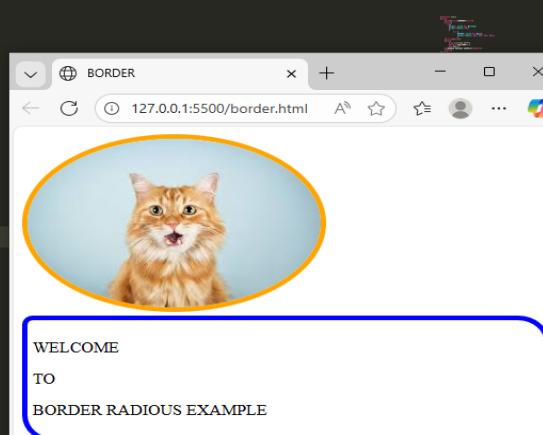
- allow you to specify the style, width, and color of an element's border.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  .dotted {border-style: dotted;}
6  .dashed {border-style: dashed;}
7  .solid {border-style: solid;}
8  .double {border-style: double;}
9  .groove {border-style: groove;}
10 .ridge {border-style: ridge;}
11 .inset {border-style: inset;}
12 .outset {border-style: outset;}
13 .none {border-style: none;}
14 .hidden {border-style: hidden;}
15 .mix {border-style: dotted dashed solid double;}
16 </style>
17 </head>
18 <body>
19
20 <h2>The border-style Property</h2>
21 <p>This property specifies what kind of border to di
22
23 <p class="dotted">A dotted border.</p>
24 <p class="dashed">A dashed border.</p>
25 <p class="solid">A solid border.</p>
26 <p class="double">A double border.</p>
27 <p class="groove">A groove border.</p>
28 <p class="ridge">A ridge border.</p>
29 <p class="inset">An inset border.</p>
```



Border-radius

- defines how rounded the corners of an element are
- Syntax: border-radius: value
- values can be (px in pixels-percentage %)



A screenshot of a browser window titled "BORDER". Inside the window, there is an orange cat image enclosed in a yellow oval border. Below the image is a blue rounded rectangular container with the text "WELCOME TO BORDER RADIOUS EXAMPLE". To the left of the browser window, there is a code editor showing the HTML and CSS code for this example.

```
border.html > html > head > style > div
<!DOCTYPE html>
<html>
  <head><title>BORDER</title>
    <style>
      img{
        border: solid 5px orange;
        border-radius: 50%;
      }
      div {
        border: solid 5px blue;
        border-radius: 10px 30px 10px 30px;
      }
    </style>
  <body>
    
    <div> <p>WELCOME</p>
      <p> TO</p>
    <p>BORDER RADIOUS EXAMPLE</p>
    </div>
  </body>
</html>
```

Box shadow

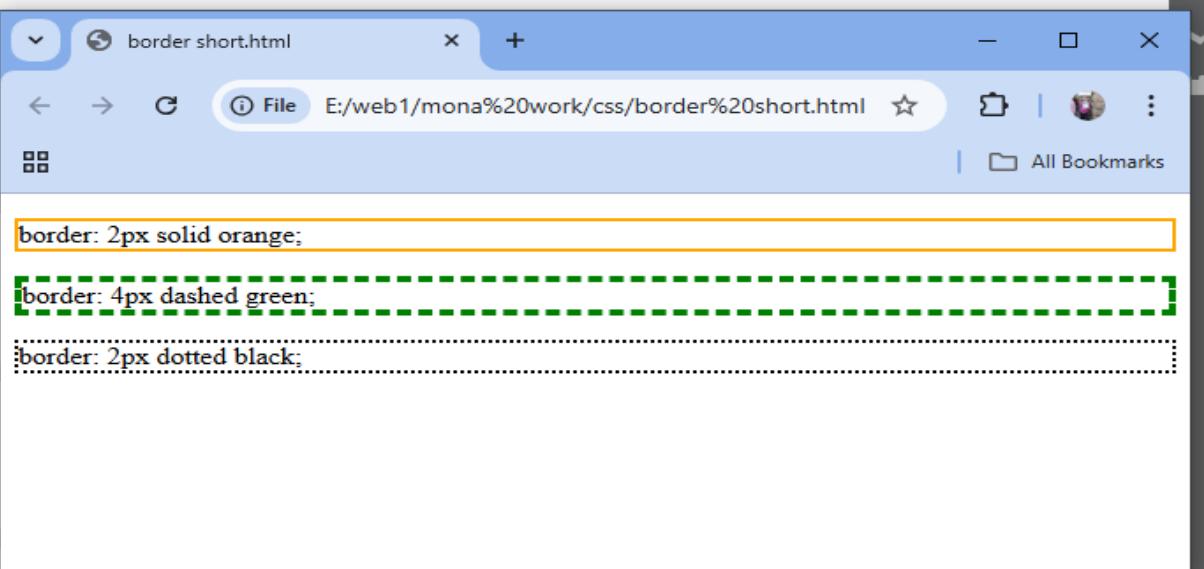
- The box-shadow property adds a **shadow effect** around an element's box. You can control its **position, blur, spread, and color**.
- syntax

box-shadow: offset-x offset-y blur-radius spread-radius color;

- Offset-x horizontal position right left
- offset-y vertical position up down
- blur

CSS border Syntax

```
border: border-width border-style border-color;
```



The image shows a code editor on the left and a browser window on the right. The code editor displays a CSS file with three classes: .border-solid, .border-dashed, and .border-dotted, each defining a border with specific width, style, and color. The browser window shows the rendered HTML with these styles applied.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  .border-solid {
6      /* border-width | border-style | border-color */
7      border: 2px solid orange;
8  }
9
10 .border-dashed {
11     /* border-width | border-style | border-color */
12     border: 4px dashed green;
13 }
14
15 .border-dotted {
16     /* border-width | border-style | border-color */
17     border: 2px dotted black;
18 }
19 }
20 </style>
21 </head>
22 <body>
23     <p class="border-solid">border: 2px solid orange;</p>
24     <p class="border-dashed">border: 4px dashed green;</p>
25     <p class="border-dotted">border: 2px dotted black;</p>
26 </body>
27 </html>
```

The browser window title is "border short.html". The address bar shows the file path: E:/web1/mona%20work/css/border%20short.html. The page content area displays three paragraphs. The first paragraph has a solid orange border. The second paragraph has a 4px dashed green border. The third paragraph has a 2px dotted black border.

Border image

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <style>
5        h1{
6          /* adds a solid border, necessary for border image */
7          border: solid;
8          /* image url | slice width | border-width */
9          border-image: url("flower.jpg")40/5px;
10       }
11   </style>
12   </head>
13  <body>
14    <h1> border image</h1>
15  </body>
16 </html>
```

