Web Application Development

❖ CSS

CSS

- What is CSS
  - CSS is a document that defines rules for layout of web application frontend.
  - For example,
    - you can specify that the background of the page is cream, all paragraphs should appear in gray using the Arial typeface, or that all level one headings should be in a blue, italic, Times typeface.

CSS

- CSS Rule

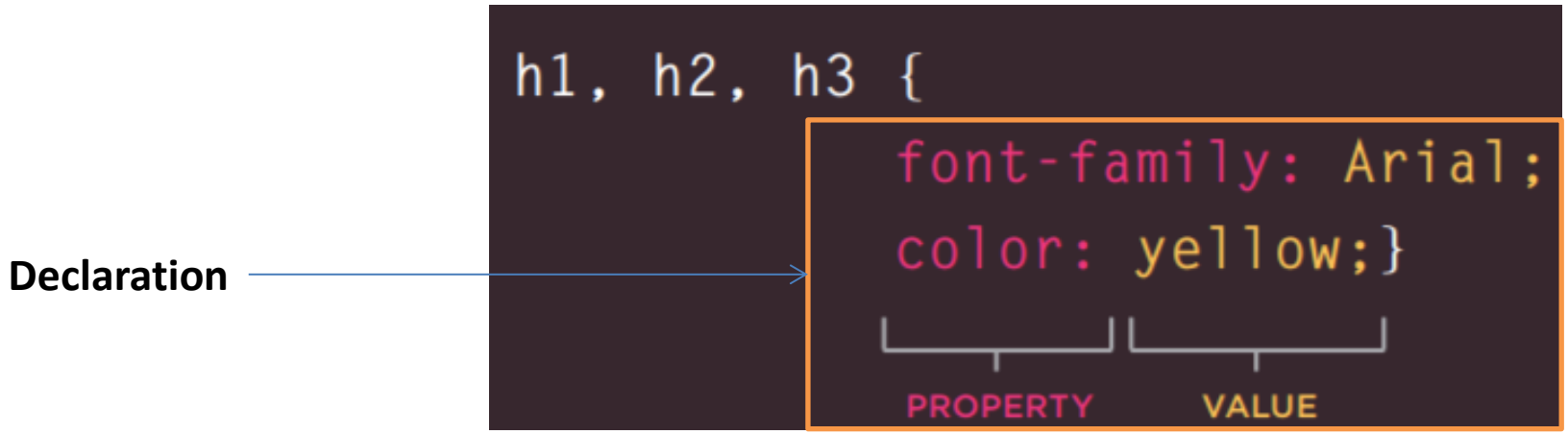
  - **A CSS rule contains two parts: a selector and a declaration.**

CSS

- CSS Rule
  - The previous rule indicates that all elements should be shown in the Arial typeface.
  - Selectors indicate which **element** (in this case p is an element) the rule applies to. The same rule can apply to more than one element if you separate the element names with commas.
  - Declarations indicate how the elements referred to in the selector should be styled

CSS

- In a rule, there can be more than 1 element associated with declaration. Example **h1, h2, h3** in following screen are associated with declaration.



- This rule indicates that all , **<h1>, <h2>, and <h3>** elements should be shown in the Arial typeface, and in a yellow color.

CSS

- **Properties** indicate the aspects of the element you want to change. For example, color, font, width, height and border.
- Values specify the settings you want to use for the chosen **properties**. For example, if you want to specify a **color** property then the **value** is the color you want the text in these elements to be.

CSS Example

- Example CSS

```
<!DOCTYPE html>
<html>
<body>
    <h1 style="color:blue;text-align:center;">
    This is a heading
    </h1>
    <p style="color:red;">This is a paragraph.</p>

</body>
</html>
```

- Output

CSS

- How to bind CSS with HTML document>
  - Inline
    - styles are placed right where you need them, next to the text you wish to decorate.
  - Internal
    - styles are placed at the top of each web page document, before any of the content is listed.
  - External
    - **External** style sheets are separate files full of CSS instructions. You need to refer this file in your html document.
    - Example
      - <link href="example.css" type="text/css“ rel="stylesheet" />

CSS

- Example Inline CSS

```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
  <p style="text-align: center;color: blue;">
                    It appears Blue.</p>
  <p id="para1">Me too!</p>
  <p>And me!</p>
</body>
</html>
```

- output

CSS

- Example Internal CSS
  - styles are placed at the top of each web page document, before any of the content is listed.

```
<!DOCTYPE html>
<html>
<head>
<style>
  p {
    text-align: center;
    color: blue;
  }
</style>
</head>
<body>
  <p style="text-align: center;color: blue;">It appears Blue.</p>
  <p id="para1">Me too!</p>
  <p>And me!</p>
</body>
</html>
```

It appears Blue.

Me too!

And me!

CSS

- Example external CSS
  - **External** style sheets are separate files full of CSS instructions. You need to refer this file in your html document.
  - Create a file called ExtCSS.css and past following

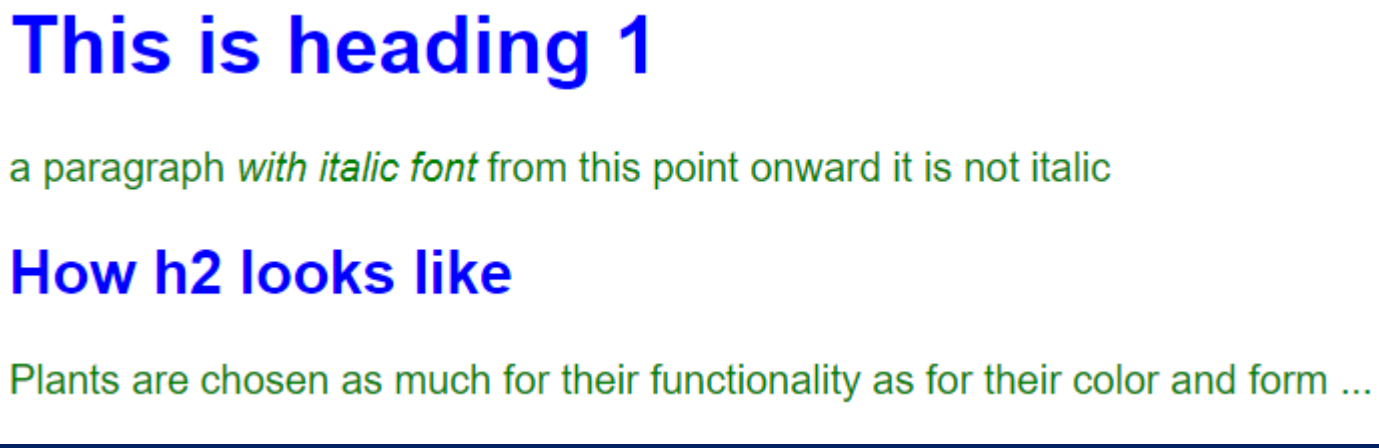
```
body {
font-family: Arial, Verdana, sans-serif;}
h1, h2 {
color: blue;}
p {
color: green;}
```

  - Create html document and refer ExtCSS.css into it
    - See next slide

CSS

- HTML document with External CSS

```
<!DOCTYPE html>
<html>
    <head>
        <title>Introducing CSS</title>
        <link href="ExtCSS.css" type="text/css" rel="stylesheet" />
    </head>
    <body>
        <h1>This is heading 1</h1>
        <p>a paragraph <i>with italic font</i> from this point onward
        it is not italic</p>
        <h2>How h2 looks like</h2>
        <p>Plants are chosen as much for their functionality
        as for their color and form ... </p>
    </body>
</html>
```



CSS

- Referring external CSS file
- <link>
  - element can be used in an HTML document to tell the browser where to find the CSS file used to style the page. It is an empty element (meaning it does not need a closing tag), and it lives inside the <head> element. It should use three attributes:
  - href
    - This specifies the path to the CSS file (which is often placed in a folder called css or styles).
  - type
    - This attribute specifies the type of document being linked to. The value should be text/css.
  - rel
    - This specifies the relationship between the HTML page and the file it is linked to. The value should be stylesheet when linking to a CSS file.

CSS

- CSS selectors can be divided into different categories
  - Simple selectors (select elements based on name, id, class)
  - Grouping Selector
  - Universal Selector
  - Combinator selectors
  - Pseudo-class selectors
  - *Pseudo-elements selectors*
  - *Attribute selectors*

CSS

- Simple selectors (select elements based on name, id, class)
  - In following, element is selected based on name

```
<!DOCTYPE html>
<html>
<head>
<style>
  p {
    text-align: center;
    color: blue;
  }
</style>
</head>
<body>
  <p>It appears Blue.</p>
  <p id="para1">Me too!</p>
  <p>And me!</p>
</body>
</html>
```

It appears Blue.

Me too!

And me!

CSS

- Simple selectors (select elements based on name, id, class)
  - In following, element is selected based on Id

```
<html>
<head>
<style>
#para1 {
  text-align: center;
  color: Blue;
}
</style>
</head>
<body>

<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>

</body>
</html>
```

Hello World!

This paragraph is not affected by the style.

CSS

- Simple selectors (select elements based on name, id, class)
  - In following, element is selected based on class

```
<html>
<head>
<style>
.center {
  text-align: center;
  color: Green;
}
</style>
</head>
<body>

<h1 class="center">Green and center-aligned heading</h1>
<p class="center">green and center-aligned paragraph.</p>

</body>
</html>
```

CSS

- Simple selectors (select elements based on name, id, class)
  - In following, element is selected based on specific class

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: cente
  color: green;
  font-style:italic;
}
</style>
</head>
<body>
  <h1 class="center">This heading will not be affected</h1>
  <p class="center">This paragraph will be green and center-aligned.</p>
</body>
</html>
```

CSS

- Simple selectors (select elements based on name, id, class)

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: center;
  color: blue;
}

p.lar
  fon
}
</sty
</hea
<body

<h1 c
<p cl
<p cl


</bod
</htm
```

This heading will not be affected

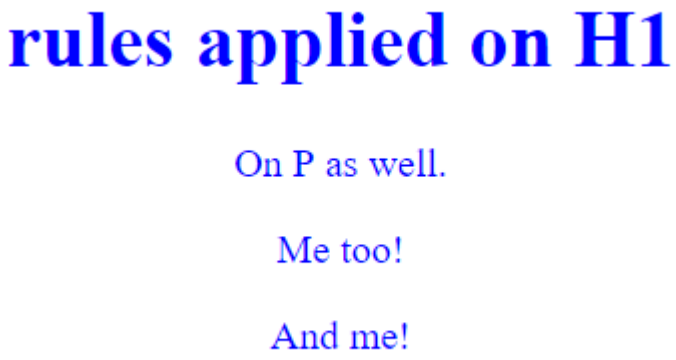
how does it looks lik?

is it green, center-aligned, and in a large font-size???

CSS

- Universal selector
  - The universal selector (*) selects all HTML elements on the page.

```
<!DOCTYPE html>
<html>
<head>
<style>
* {
  text-align: center;
  color: blue;
}
</style>
</head>
<body>

<h1>rules applied on H1</h1>

<p>On P as well.</p>
<p id="para1">Me too!</p>
<p>And me!</p>

</body>
</html>
```



CSS

- Grouping Selector
  - The grouping selector selects all the HTML elements with the same style definitions.

```
<!DOCTYPE html>
<html>
<head>
<style>
  h1, h2, p {
    text-align: center;
    color: brown;
  }
</style>
</head>
  <body>
  <h1>Hello World!</h1>
  <h2>Smaller heading!</h2>
  <p>This is a paragraph.</p>
  </body>
</html>
```

CSS

- Combinators selector
  - select elements based on a specific relationship between them
  - Example
    - descendant selector (space)
    - child selector (>)
    - adjacent sibling selector (+)
    - general sibling selector (~)

CSS

- Combinator
  - Descendent selector
    - The descendant selector matches all elements that are descendants of a specified element.

```
<!DOCTYPE html>
<html>
<head>
<style>
div p {
  background-color: yellow;
}
</style>
</head>
<body>

<div>
  <p>Paragraph 1 in the div.</p>
  <p>Paragraph 2 in the div.</p>
  <section><p>Paragraph 3 in the div.</p></section>
</div>

<p>Paragraph 4. Not in a div.</p>
<p>Paragraph 5. Not in a div.</p>

</body>
</html>
```

Paragraph 1 in the div.

Paragraph 2 in the div.

Paragraph 3 in the div.

Paragraph 4. Not in a div.

Paragraph 5. Not in a div.

CSS

- Combinator
  - Child selector
    - The child selector selects all elements that are the children of a specified element.

```
<!DOCTYPE html>
<html>
<head>
<style>
div > p {
  background-color: yellow;
}
</style>
</head>
<body>

<div>
  <p>Paragraph 1 in the div.</p>
  <p>Paragraph 2 in the div.</p>
  <section><p>Paragraph 3 in the div.</p></section>
  <!-- not Child but Descendant -->
  <p>Paragraph 4 in the div.</p>
</div>

<p>Paragraph 5. Not in a div.</p>
<p>Paragraph 6. Not in a div.</p>

</body>
</html>
```

Paragraph 1 in the div.

Paragraph 2 in the div.

Paragraph 3 in the div.

Paragraph 4 in the div.

Paragraph 5. Not in a div.

Paragraph 6. Not in a div.

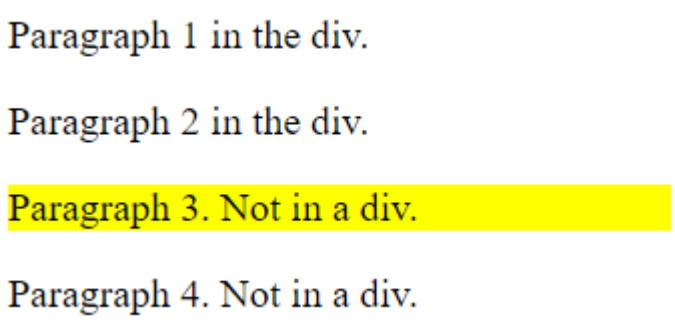
CSS

- Combinator
  - Adjacent Sibling Selector
    - The adjacent sibling selector selects all elements that are the adjacent siblings of a specified element.
    - Sibling elements must have the same parent element, and "adjacent" means "immediately following".

CSS

- Combinator
  - Adjacent Sibling Selector

```
<!DOCTYPE html>
<html>
<head>
<style>
div + p {
  background-color: yellow;
}
</style>
</head>
<body>

<div>
  <p>Paragraph 1 in the div.</p>
  <p>Paragraph 2 in the div.</p>
</div>

<p>Paragraph 3. Not in a div.</p>
<p>Paragraph 4. Not in a div.</p>

</body>
</html>
```



CSS

- Combinator
  - General Sibling Selector
    - The general sibling selector selects all elements that are siblings of a specified element.

CSS

- Combinator
  - General Sibling OR following sibling

```
<!DOCTYPE html>
<html>
<head>
<style>
div ~ p {
  background-color: yellow;
}
</style>
</head>
<body>

<p>Paragraph 1.</p>

<div>
  <p>Paragraph 2.</p>
</div>

<p>Paragraph 3.</p>
<code>Some code.</code>
<p>Paragraph 4.</p>

</body>
</html>
```

Paragraph 1.

Paragraph 2.

Paragraph 3.

Some code.

Paragraph 4.

- Summary of Combinator selector

Selector	Example	Example description
element element	div p	Selects all <p> elements inside elements
element>element	div > p	Selects all <p> elements where the parent is a element
element+element	div + p	Selects all <p> elements that are placed immediately after elements
element1~element2	p ~ ul	Selects every element that are preceded by a <p> element

CSS

- Pseudo-class selectors
  - select elements based on a certain state
  - A pseudo-class is used to define a special state of an element.
  - For example, it can be used to:
    - Style an element when a mouse hover over it
    - Style visited and unvisited links differently
    - Style an element when it gets focus
  - Syntax

```
selector : pseudo-class {
  property:value;
}
```

CSS

- Pseudo-class selectors
  - Anchor Pseudo-classes
    - a:link
      - Describes properties associated with hyperlink
    - a:visited
      - Color of hyperlink once it is visited
    - a:hover
      - Color of hyperlink once user hovers over it
    - a:active
      - Color of hyperlink once clicked

CSS

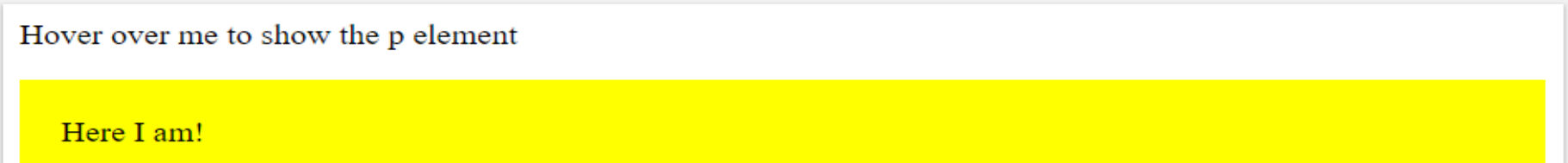
- Example

```
<!DOCTYPE html>
<html>
<head>
<style>
  /* unvisited link */
  a:link {
    color: red;
  }

  /* visited link */
  a:visited {
    color: green;
  }
  /* mouse over link */
  a:hover {
    color: hotpink;
  }

  /* selected link */
  a:active {
    color: blue;
  }
</style>
</head>
<body>
    <p><b><a href="home.html" target="_blank">This is a link</a></b></p>
</body>
</html>
```

CSS

- Pseudo-class
  - Example (Tooltip Hover)

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  display: none;
  background-color: yellow;
  padding: 20px;
}

div:hover p {
  display: block;
}
</style>
</head>
<body>

<div>Hover over me to show the p element
  <p>Here I am!</p>
</d
</b
</h
```



Summary: CSS selectors

SELECTOR	MEANING	EXAMPLE
UNIVERSAL SELECTOR	Applies to all elements in the document	`* {}` Targets all elements on the page
TYPE SELECTOR	Matches element names	`h1, h2, h3 {}` Targets the <h1>, <h2> and <h3> elements

CLASS SELECTOR	Matches an element whose `class` attribute has a value that matches the one specified after the period (or full stop) symbol	`.note {}`
		Targets any element whose `class` attribute has a value of `note`
		`p.note {}`
		Targets only <p> elements whose `class` attribute has a value of `note`

ID SELECTOR	Matches an element whose `id` attribute has a value that matches the one specified after the pound or hash symbol	`#introduction {}` Targets the element whose `id` attribute has a value of `introduction`
CHILD SELECTOR	Matches an element that is a direct child of another	`li>a {}` Targets any <a> elements that are children of an element (but not other <a> elements in the page)

Summary: CSS selectors

SELECTOR	MEANING	EXAMPLE
DESCENDANT SELECTOR	Matches an element that is a descendent of another specified element (not just a direct child of that element)	`p a {}` Targets any <a> elements that sit inside a <p> element, even if there are other elements nested between them
ADJACENT SIBLING SELECTOR	Matches an element that is the next sibling of another	`h1+p {}` Targets the first <p> element after any <h1> element (but not other <p> elements)
GENERAL SIBLING SELECTOR	Matches an element that is a sibling of another, although it does not have to be the directly preceding element	`h1~p {}` If you had two <p> elements that are siblings of an <h1> element, this rule would apply to both

Rules for Applying CSS

- If there are two or more rules that apply to the same element, it is important to understand which will take precedence.

- If there are two or more rules that apply to the same element, it is important to understand which will take precedence.
- **LAST RULE**
  - If the two selectors are identical, the latter of the two will take precedence. Here you can see the second **i** selector takes precedence over the first.

```
* {
font-family: Arial, Verdana, sans-serif;}
h1 {
font-family: "Courier New", monospace;}
i {
color: green;}
i {
color: red;}
b {
color: pink;}
p b {
color: blue !important;}
p b {
color: green;}
p#intro {
font-size: 100%;}
p {
font-size: 75%;}
```

SPECIFICITY

If one selector is more specific than the others, the more specific rule will take precedence over more general ones. In this example:

h1 is more specific than *

p b is more specific than **p**

p#intro is more specific than **p**

```
* {
font-family: Arial, Verdana, sans-serif;}
h1 {
font-family: "Courier New", monospace;}
i {
color: green;}
i {
color: red;}
b {
color: pink;}
p b {
color: blue !important;}
p b {
color: green;}
p#intro {
font-size: 100%;}
p {
font-size: 75%;}
```

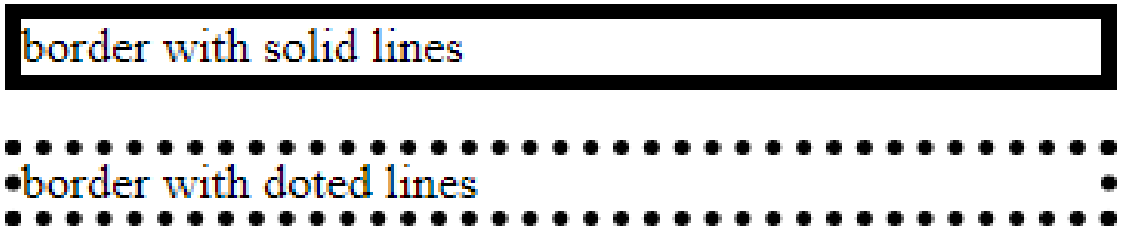
IMPORTANT

You can add **!important** after any property value to indicate that it should be considered more important than other rules that apply to the same element.

```
* {
font-family: Arial, Verdana, sans-serif;}
h1 {
font-family: "Courier New", monospace;}
i {
color: green;}
i {
color: red;}
b {
color: pink;}
p b {
color: blue !important;}
p b {
color: green;}
p#intro {
font-size: 100%;}
p {
font-size: 75%;}
```

Borders

```
<html>
<head>
<style>
p.one {
  border-style: solid;
  border-width: 5px;
}

p.two {
  border-style: dotted;
  border-width: thick;
}
</style>
</head>
<body>
    <p class="one"> border with solid lines</p>
    <p class="two"> border with doted lines</p>
</body>
</html>
```



Borders

```
<html>
<head>
<style>
p.one {
  border-style: solid;
  border-width: 5px 10px 15px 25px;//top right bottom left
}
</style>
</head>
<body>
    <p class="one"> border with solid lines</p>
</body>
</html>
```

List: Example

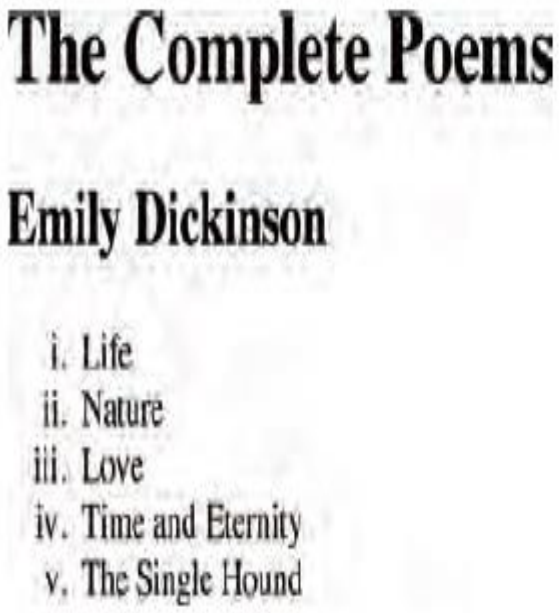
CSS

```
ol {
  list-style-type: lower-roman;
}
```

HTML

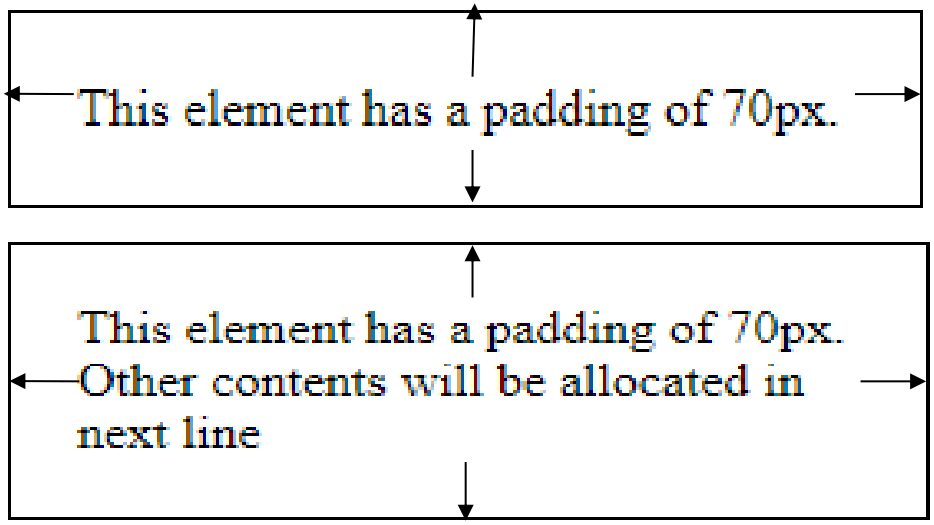
```
<h1>The Complete Poems</h1>
<h2>Emily Dickinson</h2>
<ol>
  <li>Life</li>
  <li>Nature</li>
  <li>Love</li>
  <li>Time and Eternity</li>
  <li>The Single Hound</li>
</ol>
```

RESULT



Page Padding

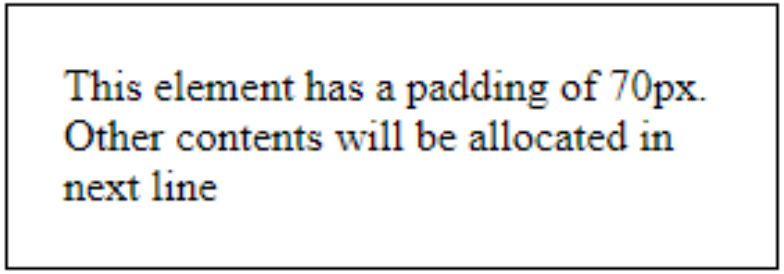
- Example



Page Padding

- Page Padding

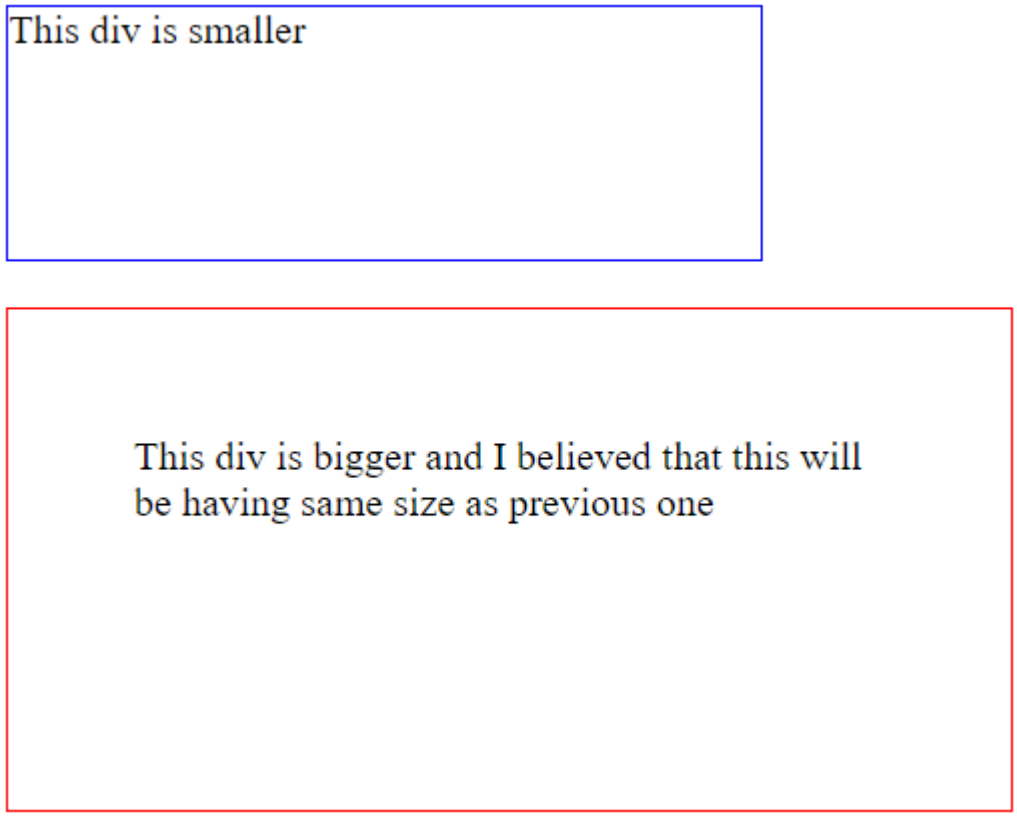
```
<html>
<head>
<style>
div {
  padding: 20px;
  border: 1px solid;
}
</style>
</head>
<body>

<div>This element has a padding of 70px. Other contents will
be allocated in next line</div>

</body>
</html>
```



CSS

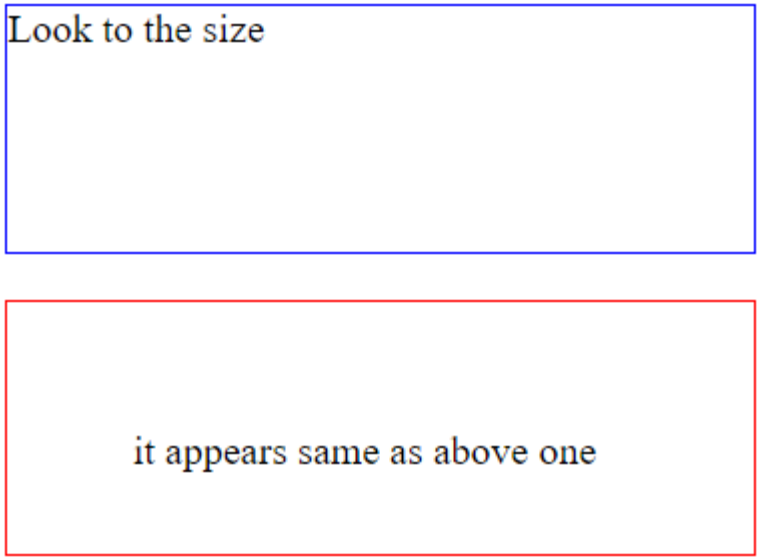
- Example

```
<!DOCTYPE html>
<html>
<head>
<style>
    .div1 {
      width: 300px;
      height: 100px;
      border: 1px solid blue;
    }

    .div2 {
      width: 300px;
      height: 100px;
      padding: 50px;
      border: 1px solid red;
    }
</style>
</head>
  <body>
    <div class="div1">This div is smaller </div>
    <br>
    <div class="div2">This div is bigger </div>
  </body>
</html>
```



CSS

```
<html>
<head>
<style>
    * {
      box-sizing: border-box;
    }
    .div1 {
      width: 300px;
      height: 100px;
      border: 1px solid blue;
    }

    .div2 {
      width: 300px;
      height: 100px;
      padding: 50px;
      border: 1px solid red;
    }
</style>
</head>
<body>
  <div class="div1">Look to the size</div>
  <br>
  <div class="div2">it appears same as above one</div>
</body>
</html>
```



List Property

- The list-style-type property allows you to control the shape or style of a bullet point (also known as a marker).
- **Unordered Lists**
  - For an unordered list you can use the following values:

none

- **disc**

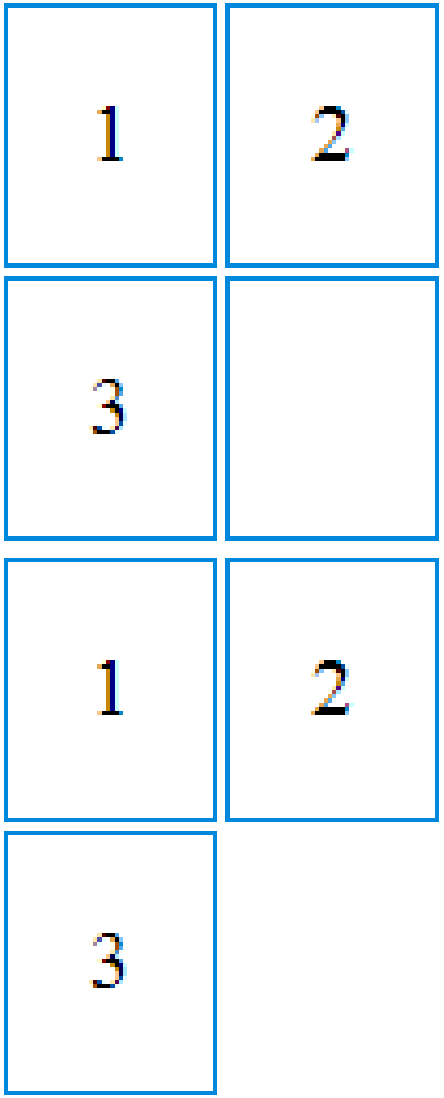
○ **circle**

▪ **square**

List Property

- Ordered List
  - For an ordered (numbered) list you can use the following values:
  - **decimal**
    - 1 2 3
  - **decimal-leading-zero**
    - 01 02 03
  - **lower-alpha**
    - a b c
  - **upper-alpha**
    - A B C
  - **lower-roman**
    - i. ii. iii.
  - **upper-roman**
    - I II III

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Empty Cells</title>
        <style type="text/css">
            td {
                border: 1px solid #0088dd;
                padding: 15px;}
            table.one {
                empty-cells: show;}
            table.two {
                empty-cells: hide;}
        </style>
    </head>
    <body>
        <table class="one">
            <tr>
                <td>1</td>
                <td>2</td>
            </tr>
            <tr>
                <td>3</td>
                <td></td>
            </tr>
        </table>
        <table class="two">
            <tr>
                <td>1</td>
                <td>2</td>
            </tr>
            <tr>
                <td>3</td>
                <td></td>
            </tr>
        </table>
    </body>
</html>
```



Home Task

```
<!DOCTYPE>
<html>
    <head>
        <title>Table Properties</title>
        <style type="text/css">
            body {
                font-family: Arial, Verdana, sans-serif;
                color: #111111;}
            table {
                width: 600px;}
            th, td {
                padding: 7px 10px 10px 10px;}
            th {
                text-transform: uppercase;
                font-size: 90%;
                border-bottom: 2px solid #111111;
                border-top: 1px solid #999;
                text-align: left;}
            tr.even {
                background-color: #efefef;}
            tr:hover {
                background-color: #c3e6e5;}
            .money {
                text-align: right;}
        </style>
    </head>
```

Home Task

```
    <body>
        <h1>First Edition Auctions</h1>
        <table>
            <tr>
                <th>Author</th>
                <th>Title</th>
                <th class="money">Reserve Price</th>
                <th class="money">Current Bid</th>
            </tr>
            <tr>
                <td>E.E. Cummings</td>
                <td>Tulips & Chimneys</td>
                <td class="money">$2,000.00</td>
                <td class="money">$2,642.50</td>
            </tr>
            <tr class="even">
                <td>Charles d'Orleans</td>
                <td>Poemes</td>
                <td class="money"></td>
                <td class="money">$5,866.00</td>
            </tr>
            <tr>
                <td>T.S. Eliot</td>
                <td>Poems 1909 - 1925</td>
                <td class="money">$1,250.00</td>
                <td class="money">$8,499.35</td>
            </tr>
            <tr class="even">
                <td>Sylvia Plath</td>
                <td>The Colossus</td>
                <td class="money"></td>
                <td class="money">$1031.72</td>
            </tr>
        </table>
    </body>
</html>
```

Home Task

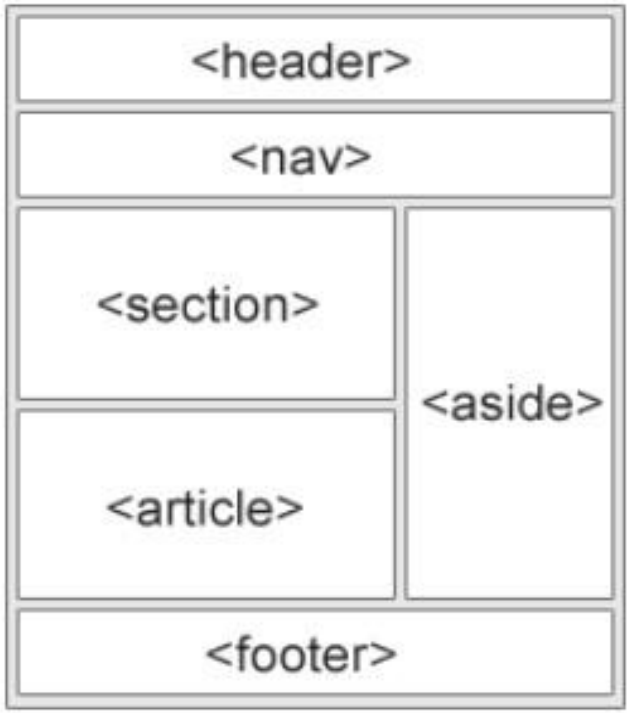
- Output

First Edition Auctions

AUTHOR	TITLE	RESERVE PRICE	CURRENT BID
E.E. Cummings	Tulips & Chimneys	$2,000.00	$2,642.50
Charles d'Orleans	Poemes		$5,866.00
T.S. Eliot	Poems 1909 - 1925	$1,250.00	$8,499.35
Sylvia Plath	The Colossus		$1031.72

LAYOUT ELEMENTS

- Websites often display content in multiple columns
  - <header> Defines a header for a document or a section
  - <nav> Defines a container for navigation links
  - <section> Defines a section in a document
  - <article> Defines an independent self-contained article
  - <aside> Defines content aside from the content (like a sidebar)
  - <footer> Defines a footer for a document or a section
  - <details> Defines additional details
  - <summary> Defines a heading for the <details> element



Layout

```
<html>
<head>
<style>
    *body {
      font-family:Arial;
    }
    header {
      background-color:green;
      padding:30px;
      text-align:center;
      font-size:35px;
      color:white;
    }
    nav{
        float:left;
        width:24%;
        height:300px;
        background:brown;
        padding:20px;
    }
    article{
        float:left;
        padding:20px;
        width:70%;
        height:300px;
        background-color:black;
        height:300px;
        color:white;
    }
    footer{
        background-color:blue;
        padding:10px;
        text-align:center;
        color:white;
    }

</style>
</head>
<body>
    <header>
        <h2>Header of the page</h2>
    </header>
    <nav>
        <ul>
            <li><a href="#">Link 01</a>
            <li><a href="#">Link 02</a>
            <li><a href="#">Link 03</a>
        </ul>
    </nav>
    <article>
        <h1>page contents</h1>
    </article>
    <footer>
    <h1> Page Footer</h1>
    </footer>

</body>
</html>
```

Output

Header of the page
Link 01
Link 02
Link 03
page contents
Page Footer

WEBSITE LAYOUT

WEBSITE LAYOUT

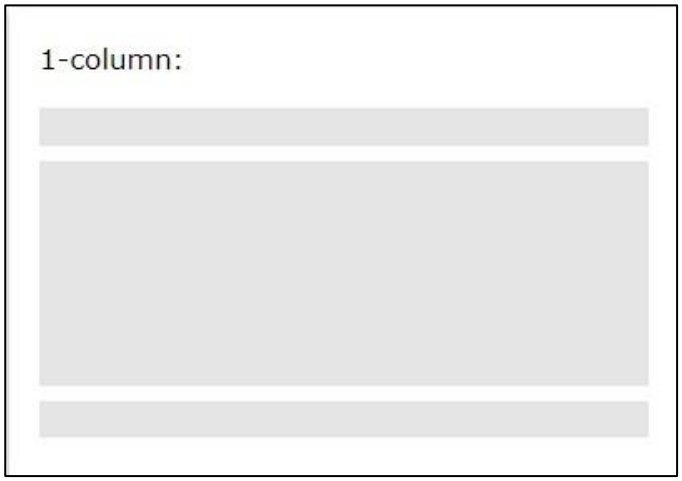
```
<!DOCTYPE html>
<html lang="en">
<head>
<title>CSS Website Layout</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  margin: 0;
}

/* Style the header */
.header {
  background-color: #f1f1f1;
  padding: 20px;
  text-align: center;
}
</style>
</head>
<body>

<div class="header">
  <h1>Header</h1>
</div>

</body>
</html>
```

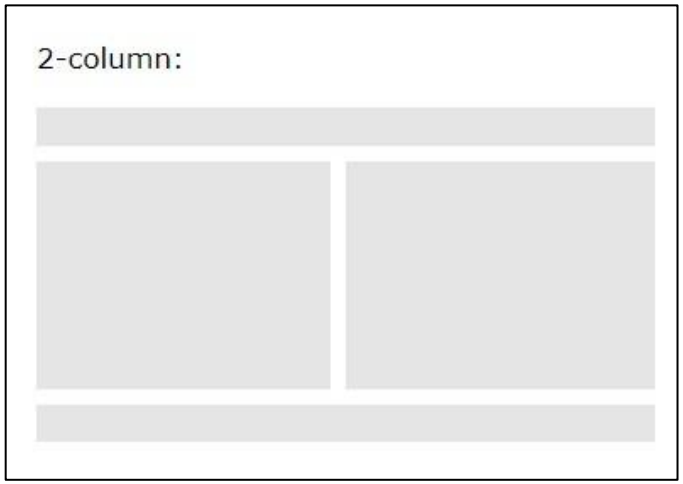
WEBSITE LAYOUT

```
<style>

.topnav {
  overflow: hidden;
  background-color: #333;
}

.topnav a {
  float: left;
  display: block;
  color: #f2f2f2;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}

.topnav a:hover {
  background-color: #ddd;
  color: black;
}
</style>
</head>
<body>

<div class="topnav">
  <a href="#">Home</a>
  <a href="#">About</a>
  <a href="#">Contact</a>
</div>

</body>
</html>
```

CONTENT

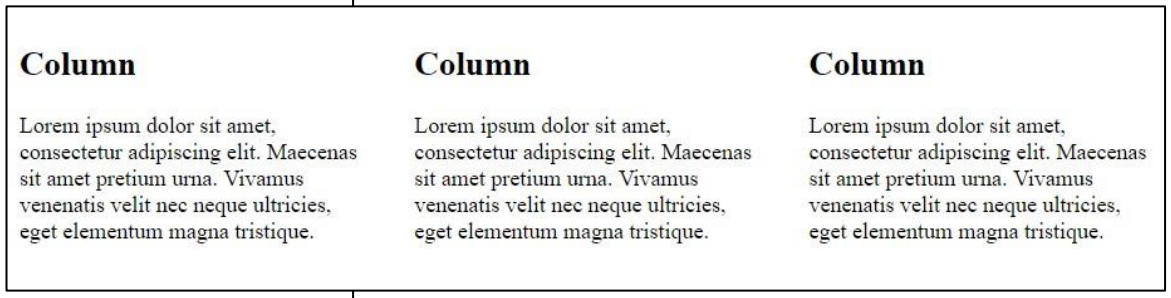
- **1-column** (often used for mobile browsers)
- **2-column** (often used for tablets and laptops)
- **3-column layout** (only used for desktops)





WEBSITE LAYOUT

```
<style>
* {
  box-sizing: border-box;
}

body {
  margin: 0;
}

/* Create three equal columns that floats next to each other */
.column {
  float: left;
  width: 33.33%;
  padding: 15px;
}

/* Clear floats after the columns */
.row:after {
  content: "";
  display: table;
  clear: both;
}

/* Responsive layout - makes the three columns stack on top of each other instead of next to each other */
@media screen and (max-width:600px) {
  .column {
    width: 100%;
  }
}
</style>
</head>
```




```
<body>

<div class="row">
  <div class="column">
    <h2>Column</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique.</p>
  </div>

  <div class="column">
    <h2>Column</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique.</p>
  </div>

  <div class="column">
    <h2>Column</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique.</p>
  </div>
</div>

</body>
```

WEBSITE LAYOUT

```
<head>
<title>CSS Website Layout</title>

<style>
* {
  box-sizing: border-box;
}

body {
  margin: 0;
}

/* Create three unequal columns that floats next to each other */
.column {
  float: left;
  padding: 10px;
}

/* Left and right column */
.column.side {
  width: 25%;
}

/* Middle column */
.column.middle {
  width: 50%;
}

/* Clear floats after the columns */
.row:after {
  content: "";
  display: table;
  clear: both;
}

@media screen and (max-width: 600px) {
  .column.side, .column.middle {
    width: 100%;
  }
}
</style>
</head>
```

```
<body>

<div class="row">
  <div class="column side">
    <h2>Side</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit..</p>
  </div>

  <div class="column middle">
    <h2>Main Content</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam placerat, purus leo tincidunt eros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan convallis.</p>
  </div>

  <div class="column side">
    <h2>Side</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit..</p>
  </div>
</div>

</body>
```

Side

Lorem ipsum dolor sit amet, consectetur adipiscing elit..

Main Content

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam placerat, purus leo tincidunt eros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan convallis.

Side

Lorem ipsum dolor sit amet, consectetur adipiscing elit..

WEBSITE LAYOUT

```css
/* Style the footer */
.footer {
  background-color: #f1f1f1;
  padding: 10px;
  text-align: center;
}
```

WEBSITE LAYOUT

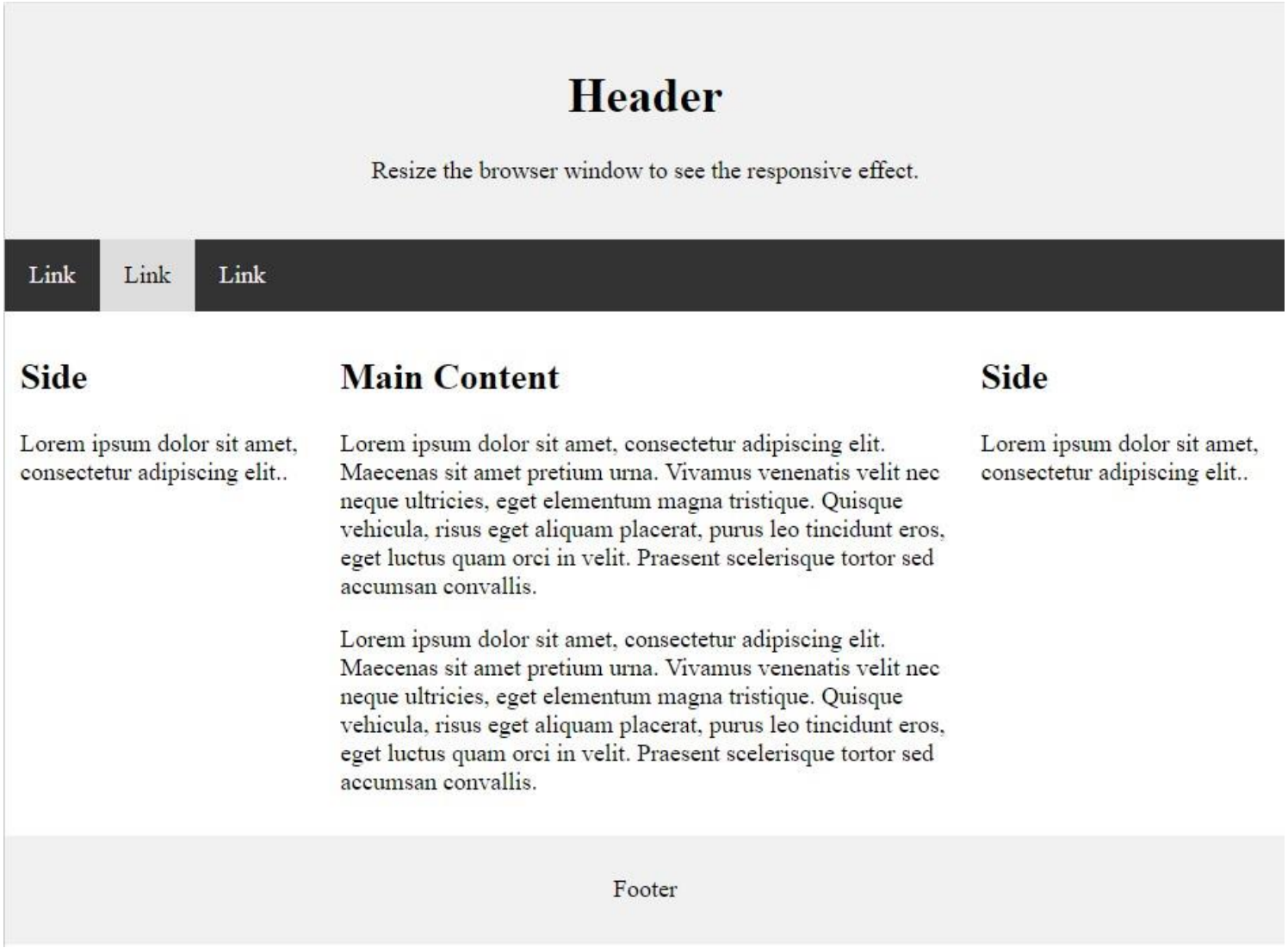
```
<!DOCTYPE html>
<html lang="en">
<head>
<title>CSS Website Layout</title>
<meta charset="utf-8">

<style>
* {
  box-sizing: border-box;
}

body {
  margin: 0;
}

.header {
  background-color: #f1f1f1;
  padding: 20px;
  text-align: center;
}

.topnav {
  overflow: hidden;
  background-color: #333;
}

.topnav a {
  float: left;
  display: block;
  color: #f2f2f2;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}

.topnav a:hover {
  background-color: #ddd;
  color: black;
}

.column {
  float: left;
  padding: 10px;
}
```

```
.column.side {
  width: 25%;
}

.column.middle {
  width: 50%;
}

.row:after {
  content: "";
  display: table;
  clear: both;
}

@media screen and (max-width: 600px) {
  .column.side, .column.middle {
    width: 100%;
  }
}

.footer {
  background-color: #f1f1f1;
  padding: 10px;
  text-align: center;
}

</style>
</head>
```

WEBSITE LAYOUT

```
<body>

<div class="header">
  <h1>Header</h1>
  <p>Resize the browser window to see the responsive effect.</p>
</div>

<div class="topnav">
  <a href="#">Link</a>
  <a href="#">Link</a>
  <a href="#">Link</a>
</div>

<div class="row">
  <div class="column side">
    <h2>Side</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit..</p>
  </div>

  <div class="column middle">
    <h2>Main Content</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus
    venenatis velit nec neque ultricies, eget elementum magna tristique.
    </div>

  <div class="column side">
    <h2>Side</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit..</p>
  </div>
</div>

<div class="footer">
  <p>Footer</p>
</div>

</body>
```

WEBSITE LAYOUT



IMAGES

```
<head>
<style>
img.align-left {
    float: left;
    margin-right: 10px;}

img.align-right {
    float: right;
    margin-left: 10px;}

img.medium {
    width: 100;
    height: 100px;}

img.small {
    width: 75;
    height: 75px;}
</style>
</head>
```

```
<body>

<p><img src="C:/Users/hp 840g1 i7/Desktop/magnolia.jpg"
alt="Magnolia" class="align-left small" />

<b><i>Magnolia</i></b> is a large genus that
contains over 200 flowering plant species...</p>

<p><img src="C:/Users/hp 840g1 i7/Desktop/magnolia.jpg"
alt="Magnolia" class="align-right medium" />

Some magnolias, such as <i>Magnolia stellata</i>
and <i>Magnolia soulangeana</i>, flower quite
early in the spring before the leaves open...</p>

</body>
```

Magnolia is a large genus that contains over 200 flowering plant species...

Some magnolias, such as *Magnolia stellata* and *Magnolia soulangeana*, flower quite early in the spring before the leaves open...

IMAGES

```
<head>
<style>
img.align-left {
    float: left;
    margin-right: 10px;}

img {
  opacity: 0.5;
  filter: alpha(opacity=50);
}
</style>
</head>
```

Image with 50% opacity:

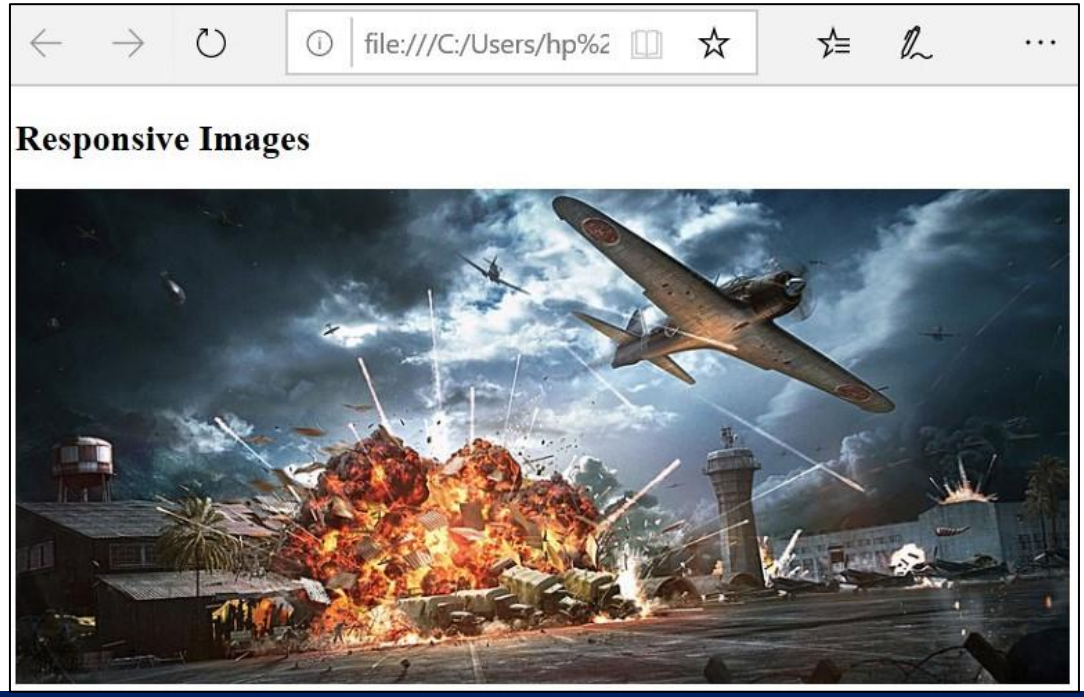
Magnolia is a large genus that contains over 200 flowering plant species...

Some magnolias, such as *Magnolia stellata* and *Magnolia soulangeana*, flower quite early in the spring before the leaves open...

```
<body>

<p>Image with 50% opacity:</p>
    <img src="C:/Users/hp 840g1 i7/Desktop/magnolia.jpg" alt="Forest" class="align-left"
    width="110" height="110">

<b><i>Magnolia</i></b> is a large genus that
contains over 200 flowering plant species...</p>

Some magnolias, such as <i>Magnolia stellata</i>
and <i>Magnolia soulangeana</i>, flower quite
early in the spring before the leaves open...</p>

</body>
```

IMAGES

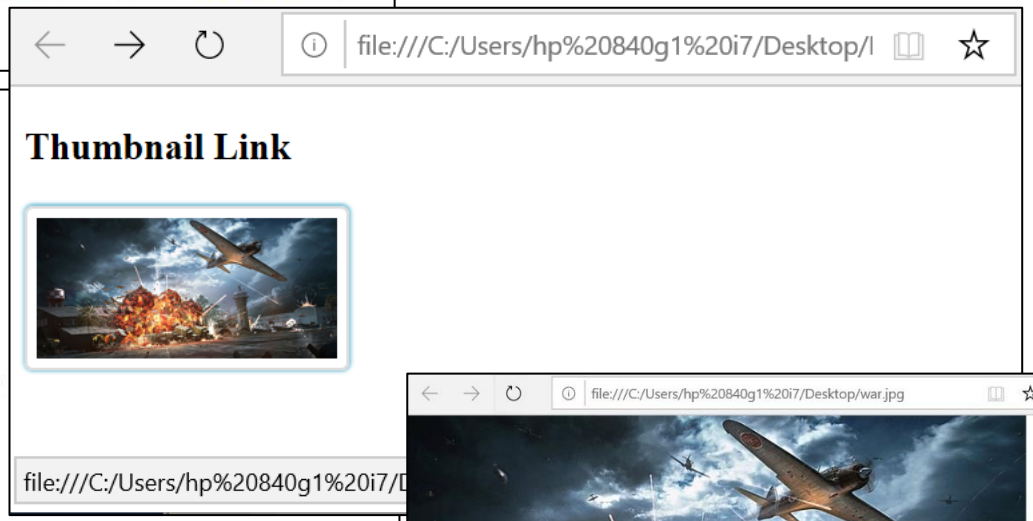
```
<head>
<style>
img {
  max-width: 100%;
  height: auto;
}
</style>
</head>

<body>
<h2>Responsive Images</h2>
    <img src="C:/Users/hp 840g1 i7/Desktop/war.jpg" alt="War Background"
    width="800" height="375">
</body>
```



IMAGES

```
<head>
<style>
img {
  border: 1px solid #ddd;
  border-radius: 4px;
  padding: 5px;
  width: 150px;
}
</style>
</head>

<body>
<h3>Thumbnail</h3>
    <img src="C:/Users/hp 840g1 i7/Desktop/war.jpg" alt="War Background"
    width="150px">
</body>
```

```
<head>
<style>
img {
  border: 1px solid #ddd;
  border-radius: 4px;
  padding: 5px;
  width: 150px;
}
img:hover {
  box-shadow: 0 0 2px 1px rgba(0, 140, 186, 0.5);
}
</style>
</head>

<body>
<h3>Thumbnail Link</h3>
    <a target="_blank" href="C:/Users/hp 840g1 i7/Desktop/war.jpg">
    <img src="C:/Users/hp 840g1 i7/Desktop/war.jpg" alt="War Background"
    width="150px">
</body>
```



IMAGES

```
<head>
<style>
img {
  border: 1px solid #ddd;
  border-radius: 12px;
  padding: 5px;
}
img:hover {
  box-shadow: 0 0 2px 1px rgba(0, 140, 186, 0.5);
}
</style>
</head>

<body>
    <img src="C:/Users/hp 840g1 i7/Desktop/war.jpg" alt="War Background"
    width="250px">
</body>
```

COLORS

- The **color** property to specify the color of text inside an element
- Computer monitors are made up of thousands of tiny squares called pixels
- Every color is created by mixing amounts of **RED**, **GREEN**, and **BLUE**
- **https://coolors.co/**

RGB VALUES	HEX CODES	COLOR NAMES
Values for red, green, and blue are expressed as numbers between 0 and 255.	Hex values represent values for red, green, and blue in hexadecimal code.	Colors are represented by predefined names. However, they are very limited in number.
rgb(102,205,170)	**#66cdaa**	**MediumAquaMarine**
102 red 205 green 170 blue	value of the red, 102, is expressed as **66** 205 of the green is expressed as **cd** the 170 of blue equates to **aa**.	There are 147 color names supported by browsers

COLORS

HUE

Hue is near to the colloquial idea of color.

SATURATION

Saturation refers to the amount of gray in a color.

At maximum saturation, there would be no gray in the color.

At minimum saturation, the color would be mostly gray.

BRIGHTNESS

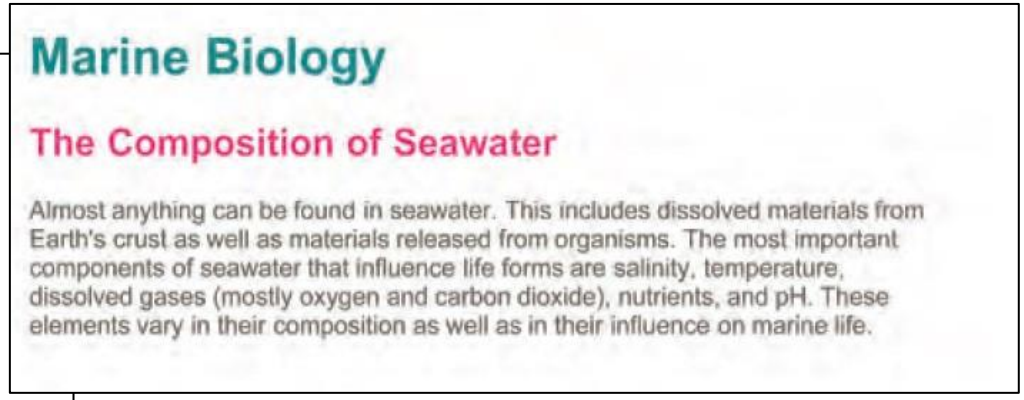
Brightness (or "value") refers to how much black is in a color.

At maximum brightness, there would be no black in the color.

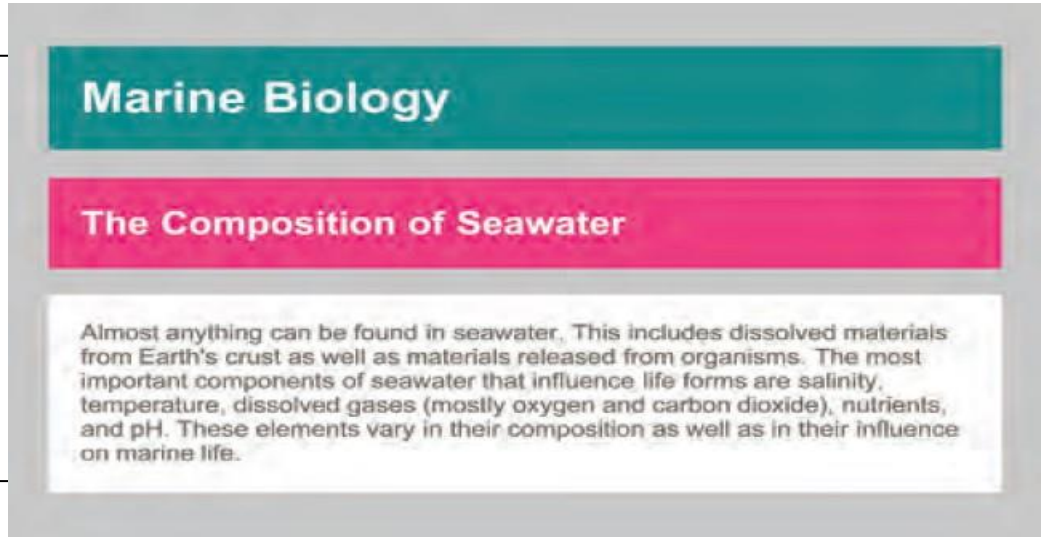
At minimum brightness, the color would be very dark.

COLORS

```
/* color name */
h1 {
  color: DarkCyan;}
/* hex code */
h2 {
  color: #ee3e80;}
/* rgb value */
p {
  color: rgb(100,100,90);}
```

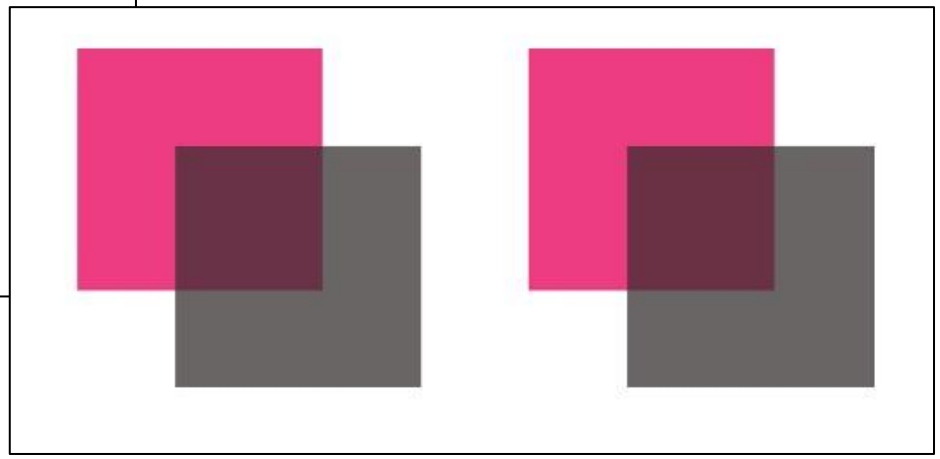



```
body {
  background-color: rgb(200,200,200);}
h1 {
  background-color: DarkCyan;}
h2 {
  background-color: #ee3e80;}
p {
  background-color: white;}
```

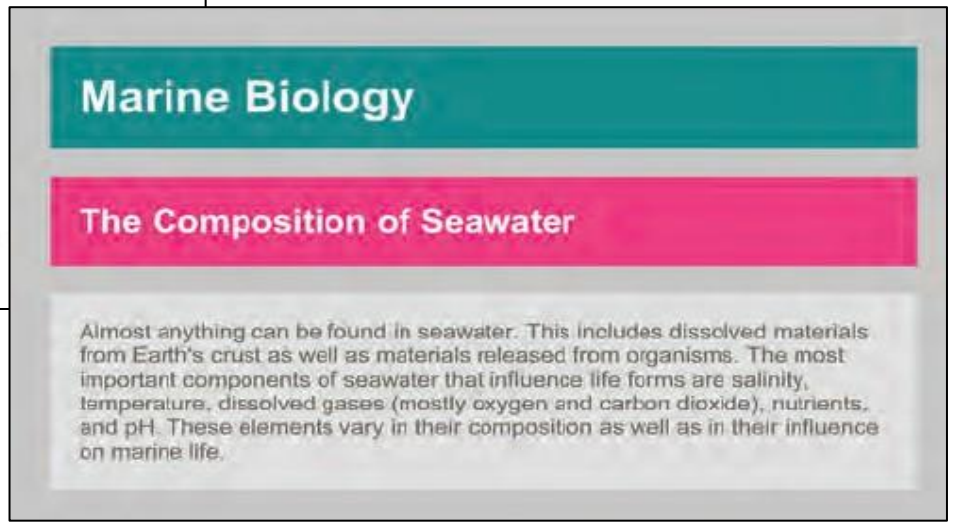


COLORS

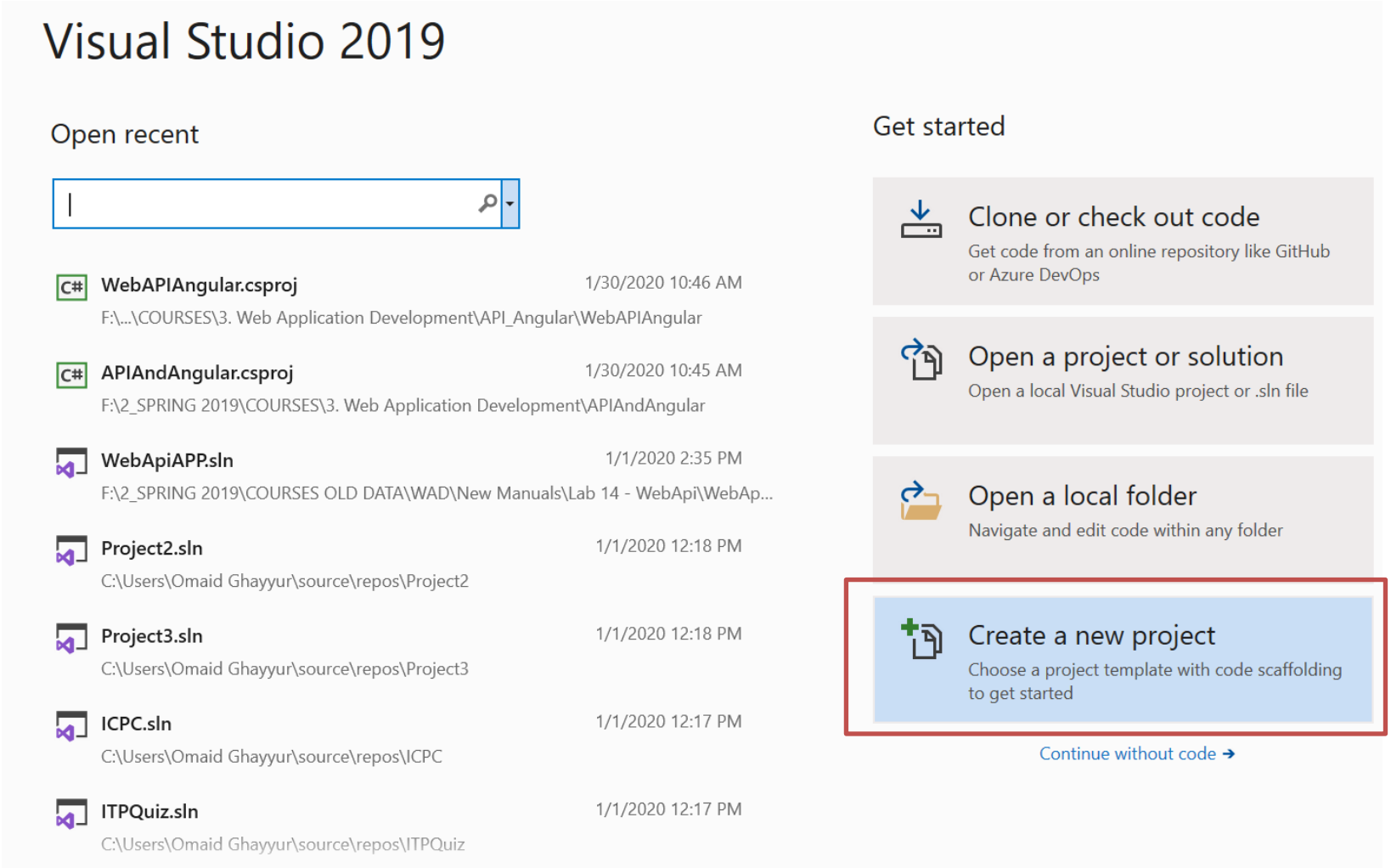
```
p.one {
  background-color: rgb(0,0,0);
  opacity: 0.5;}
p.two {
  background-color: rgb(0,0,0);
  background-color: rgba(0,0,0,0.5);}
```



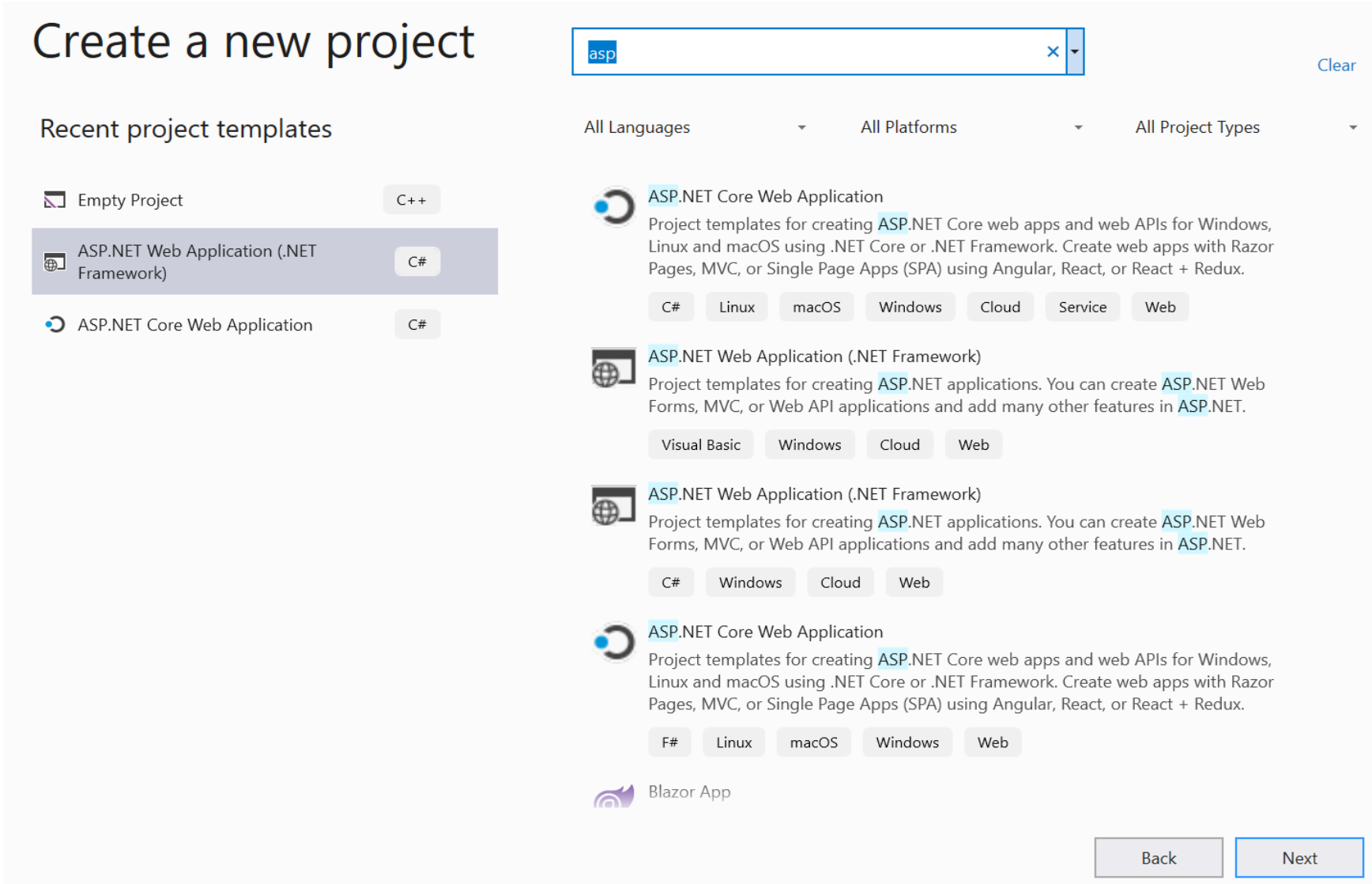
```
body {
  background-color: #C8C8C8;
  background-color: hsl(0,0%,78%);}
p {
  background-color: #ffffff;
  background-color: hsla(0,100%,100%,0.5);}
```



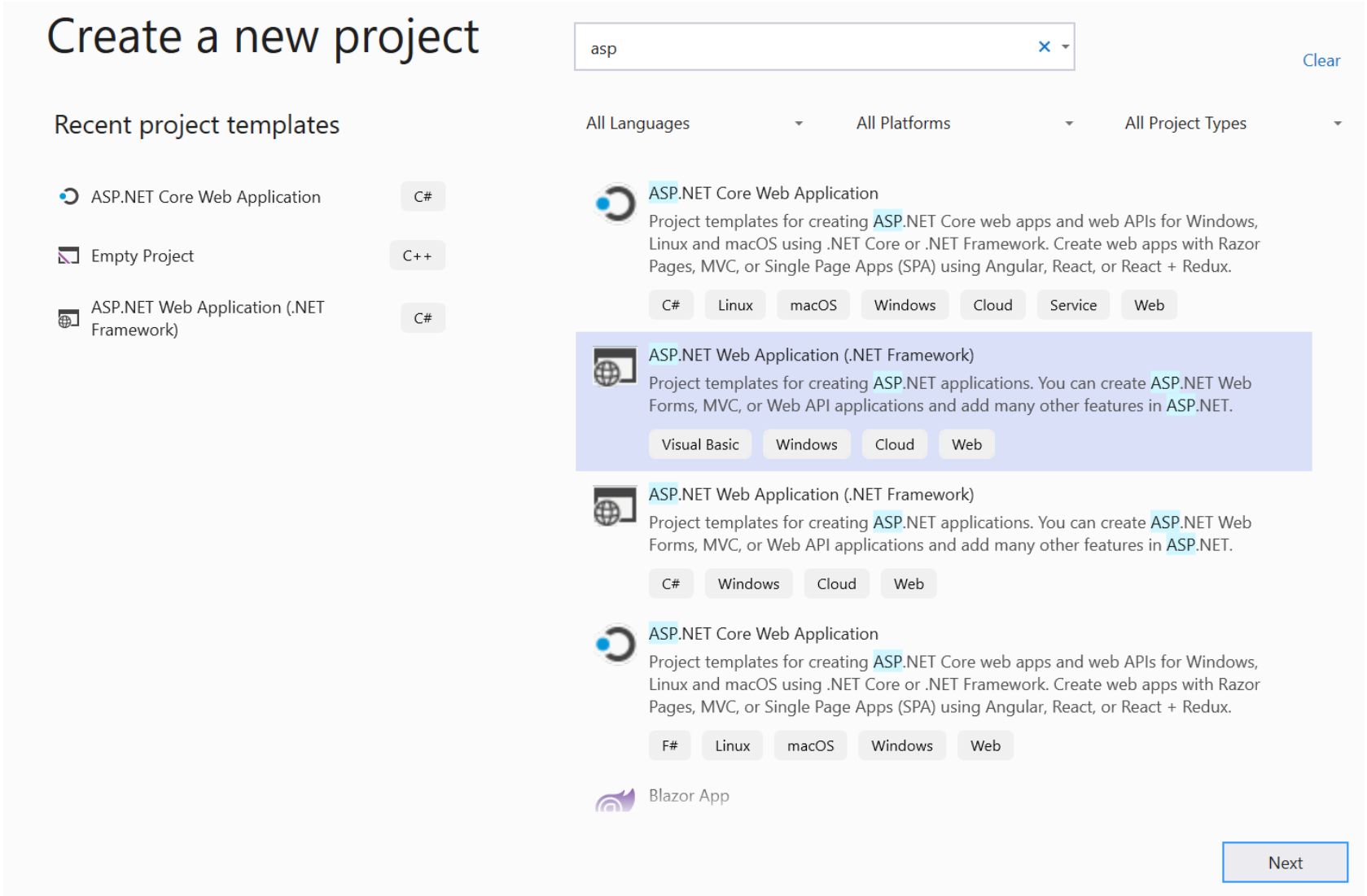
HTML CSS – Visual Studio



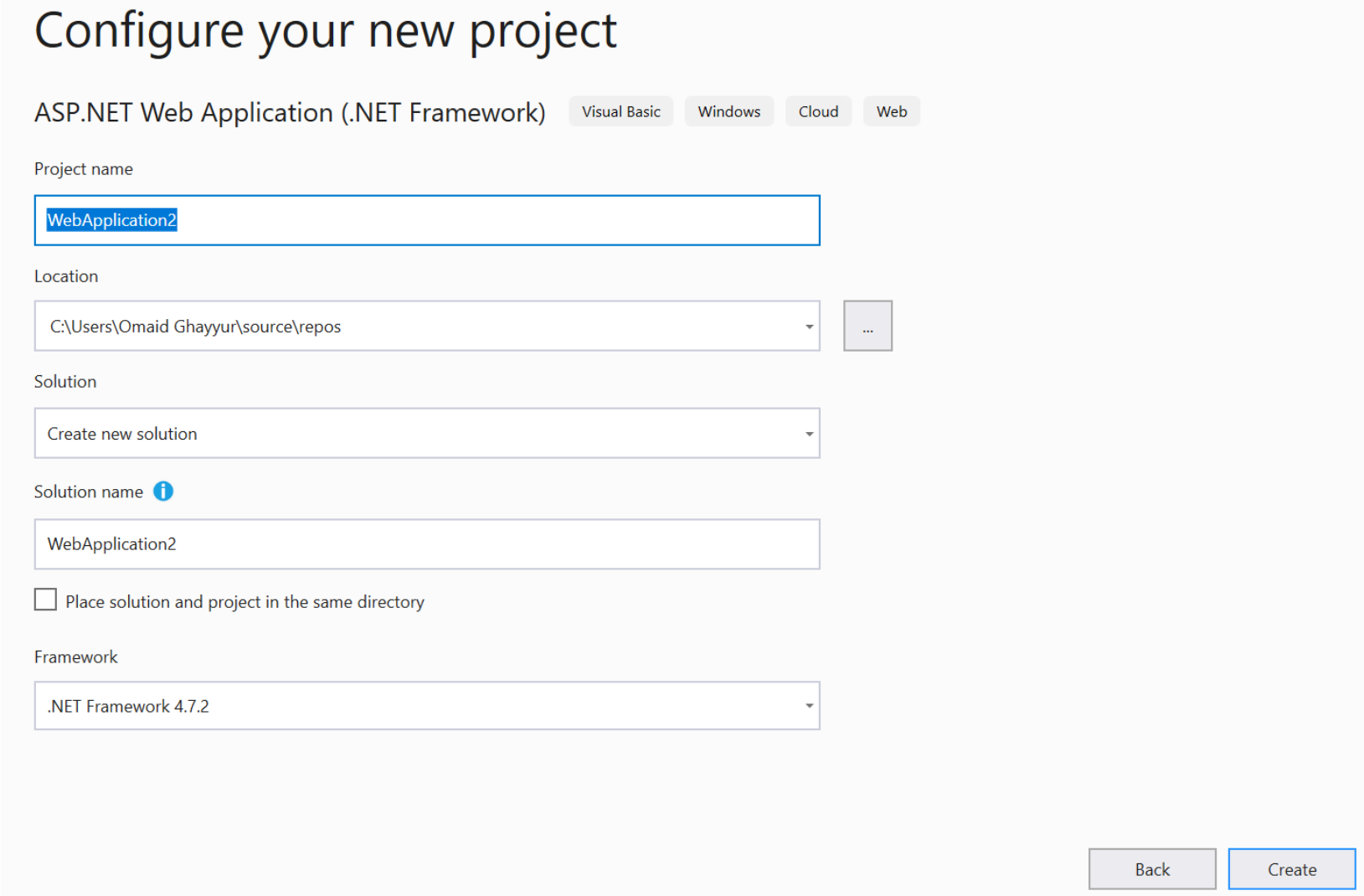
HTML CSS – Visual Studio



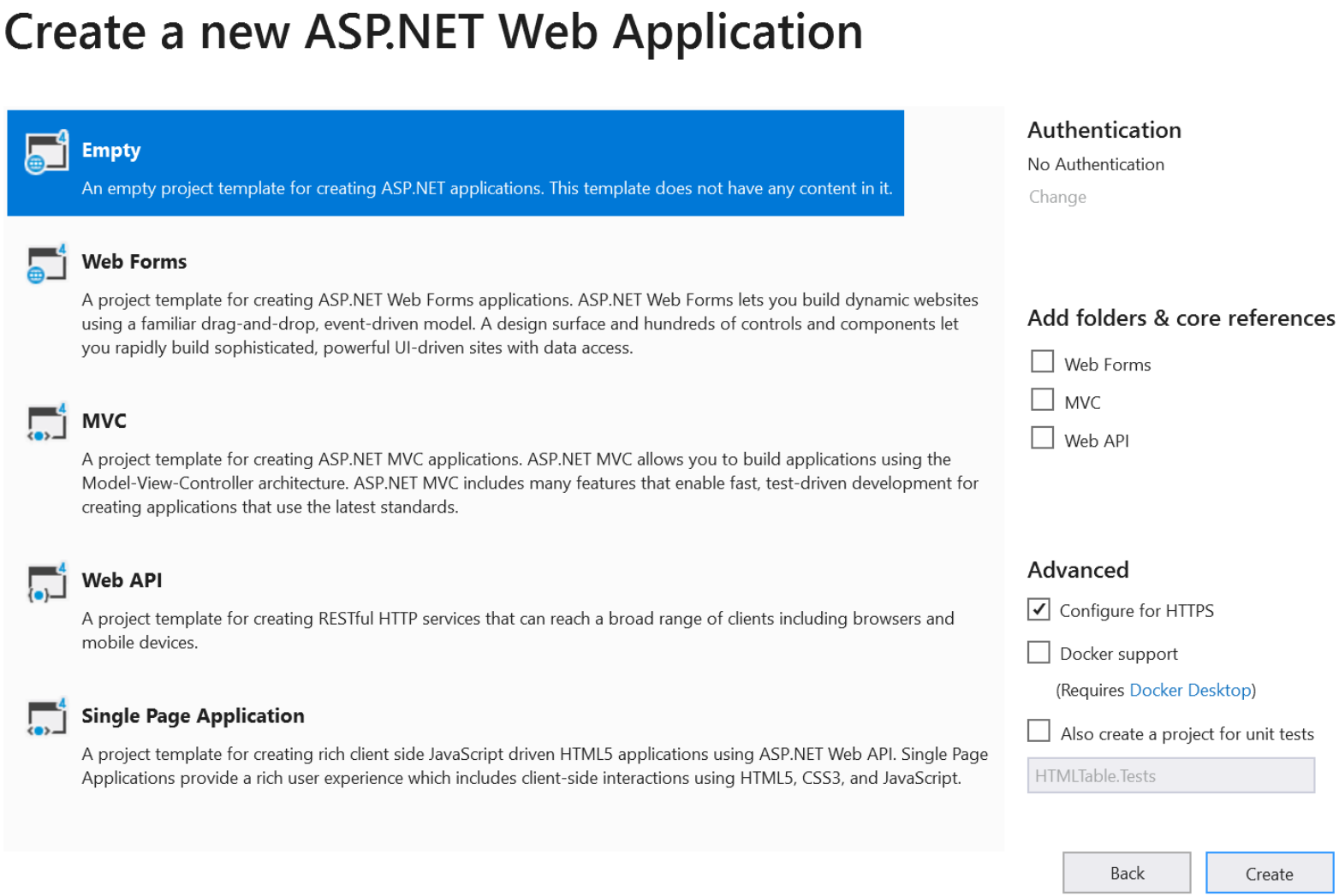
HTML CSS – Visual Studio



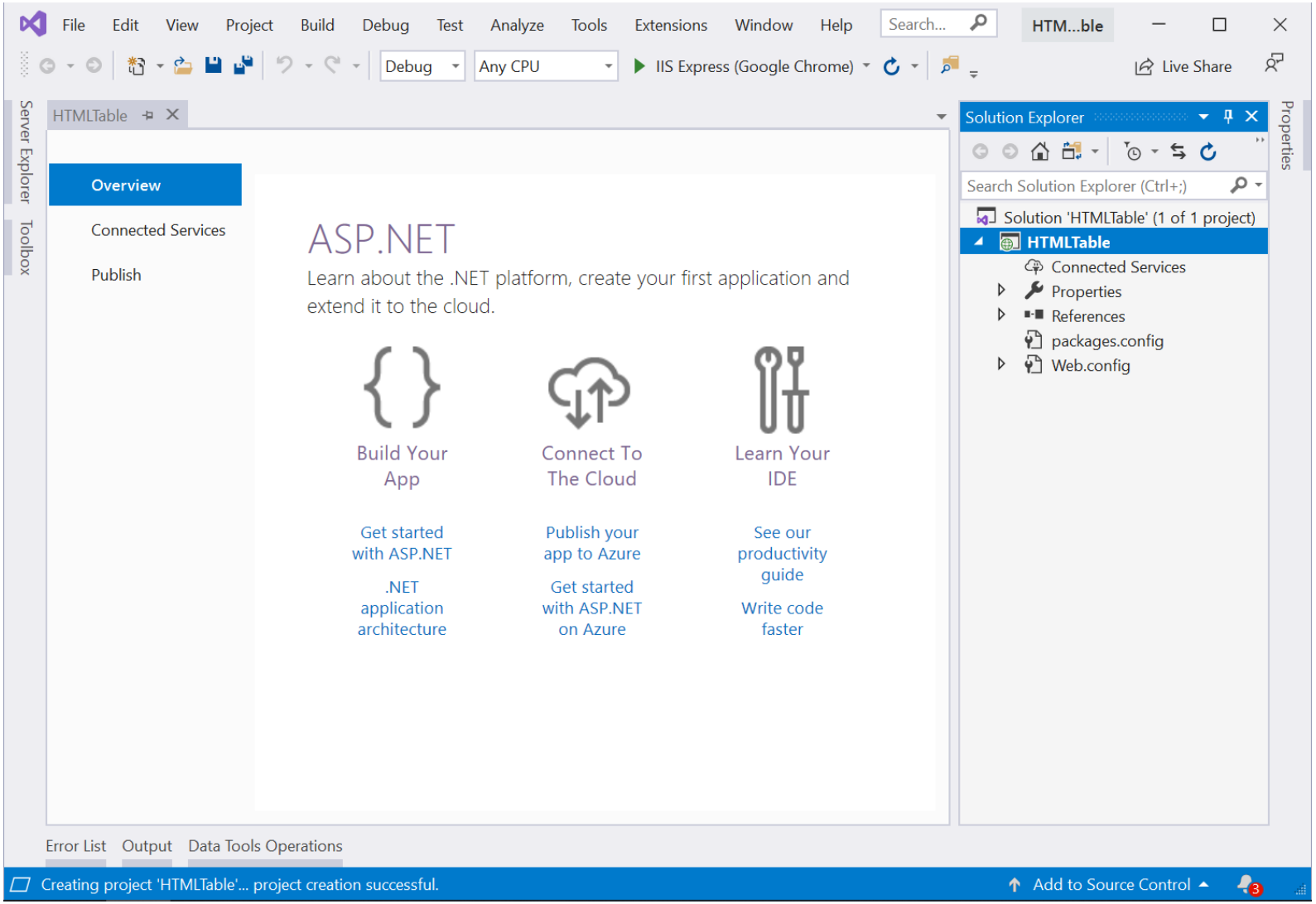
HTML CSS – Visual Studio



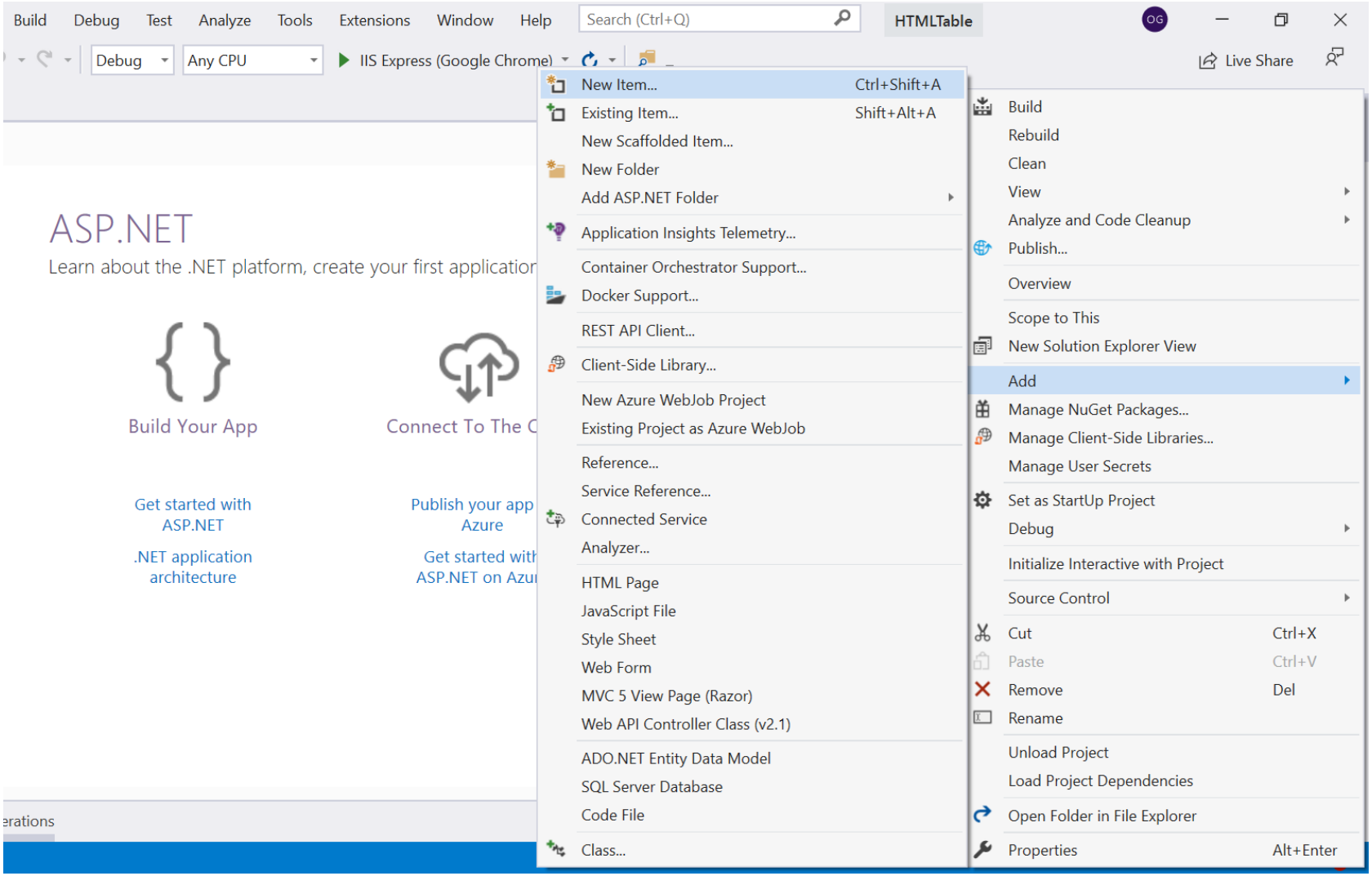
HTML Page – Visual Studio



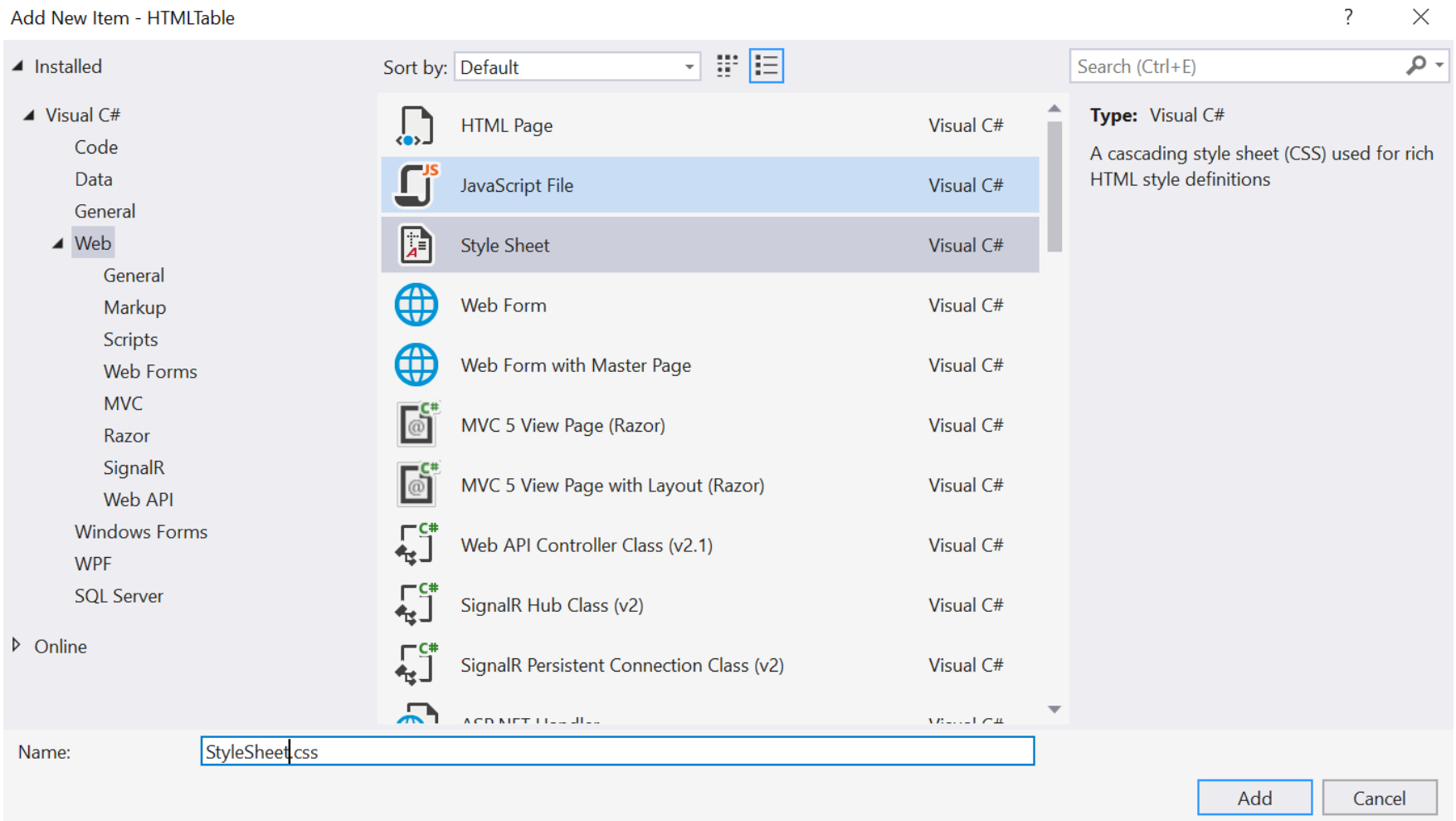
HTML CSS – Visual Studio



HTML CSS – Visual Studio



HTML CSS – Visual Studio

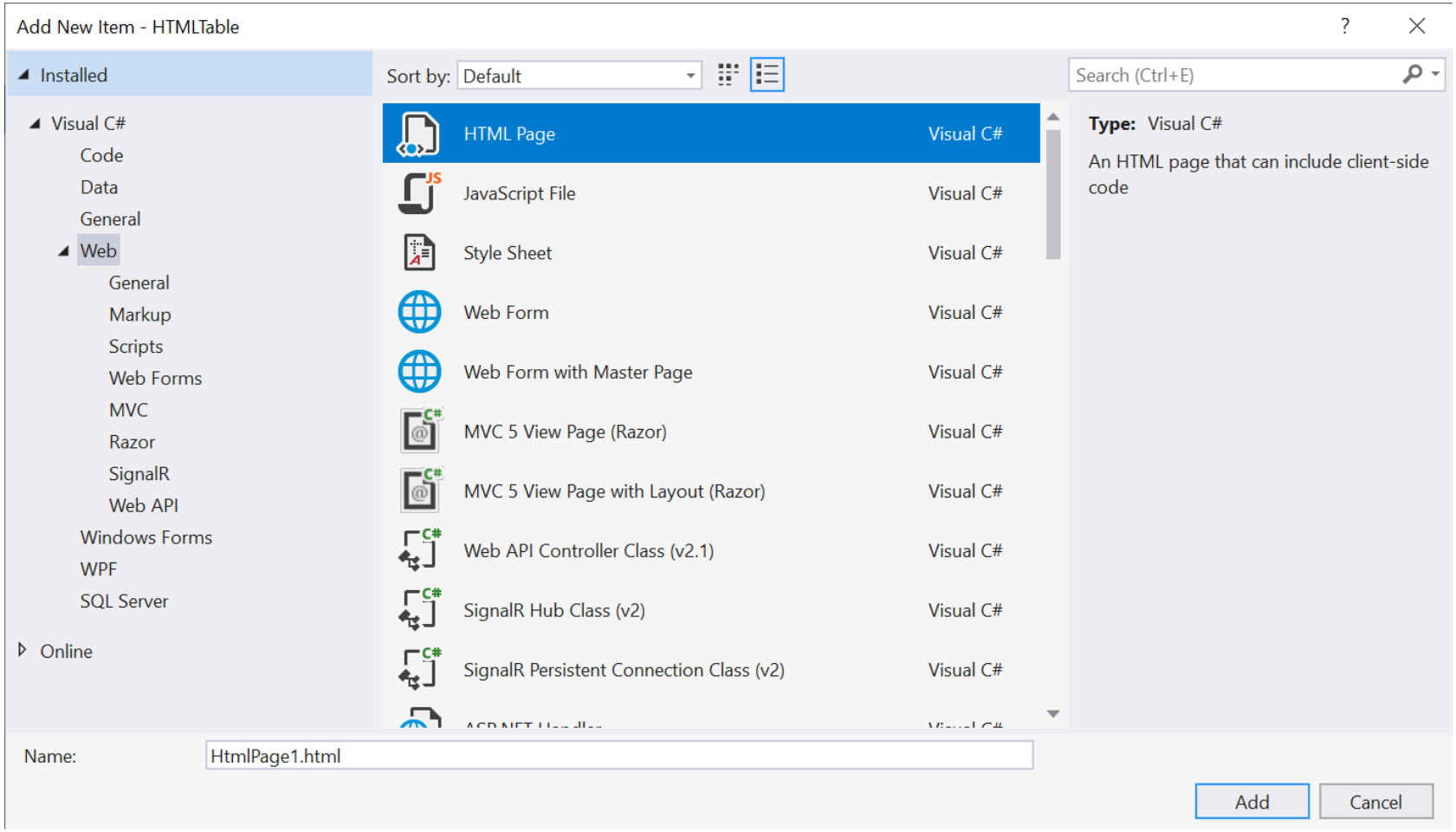


HTML CSS – Visual Studio

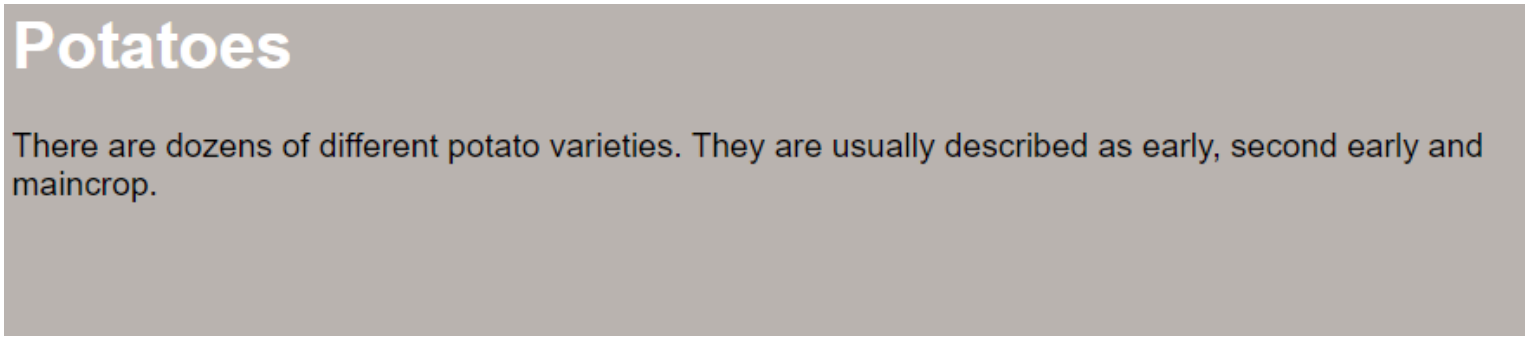
StyleSheet.css HtmlPage1.html

```
1  body {
2      font-family: arial;
3      background-color: rgb(185,179,175);
4  }
5
6  h1 {
7      color: rgb(255,255,255);
8  }
```

HTML CSS – Visual Studio



HTML Page – Visual Studio

StyleSheet.css | HtmlPage1.html

```
1   <!DOCTYPE html>
2   <html>
3   <head>
4       <title>Using External CSS</title>
5       <link href="StyleSheet.css" type="text/css"
6             rel="stylesheet" />
7   </head>
8   <body>
9       <h1>Potatoes</h1>
10      <p>
11          There are dozens of different potato
12          varieties. They are usually described as
13          early, second early and maincrop.
14      </p>
15  </body>
16  </html>
```