

The image features the text "CSS" in a black, sans-serif font, centered horizontally. On the left side, there is a thick black L-shaped line that starts with a horizontal segment at the top and a vertical segment extending downwards. On the right side, there is a thick black L-shaped line that starts with a horizontal segment at the bottom and a vertical segment extending upwards. These two L-shaped lines are positioned such that they appear to frame the central text "CSS".

CSS

# CSS

- Cascading style sheets allows one to control the display of elements by specifying their properties.
- Can use the style attributes directly in the HTML.

# HTML With Style (Inline)

```
<!DOCTYPE html>
<html>
  <head>
    <title style="color:blue;" >
      Friends Page</title>
    </head>
  <body>
    <h1 style="font-family:Times; color:deeppink" >
      Justin</h1>
    <p style="font-size:20;font-family:Courier;" >
      Justin is my best friend.
      We both like rock and roll.
    </p>
  </body>
</html>
```

# Styles

- "CSS attribute:CSS value";
- Attributes include
  - *background-color*
  - *color*
  - *font-family*
  - *font-size*
  - *text-align*
- List of 140 named colors [The List](#)
- RGB
  - Example *rgb (10, 255, 30)*
- RGB in hex
  - Example *#FFAA79*

# HTML With Style (Internal)

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      h1 {color:orange;}
      p   {background-color:red;
          font-family:Times;}
    </style>

    <title>
      Friends Page</title>
    </head>
  <body>
    <h1 style="color:deeppink">
      Justin</h1>
    <p>
      Justin is my best friend.
      We both like rock and roll.
    </p>
  </body>
</html>
```

Use for h1 headings

Use for just this one

# The Internal

- Use `<style>` element {CSS property: CSS value;} in the head.

Styles are applied to all of that kind of element. Inline styles will override the general.

# The Problem

- While we can specify the style directly in the HTML elements a web site is not a single page. How do we maintain consistent style across multiple pages.
- The Answer: Specify the styles in a shared external file.

# HTML With Style (External)

```
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" href="styles.css">
    <title> Friends Page</title>
  </head>
  <body>
    <h1> Justin</h1>
    <p>
      Justin is my best friend.
      We both like rock and roll.
    </p>
  </body>
</html>
```



# A CSS file

```
h1 {color:orange;  
}
```

A CSS comment

```
/* Comments in CSS can also be  
inside <style> elements in HTML*/  
p {background-color: red;  
    font-family: Times;  
    border: 5px solid blue;  
    padding: 10px;  
}
```

Selector	Attribute	Value
----------	-----------	-------

Values only need quoting if they contain spaces

# CSS – is not HTML

- Use `<link>` in the head to access the stylesheet resource.
- `<link rel="stylesheet" href="resource location">`
- Rel is the relation (what kind of resource it is) and there are others that we can pull in like icons.
- Href can be local or remote.

# CSS – Selectors

- Element selector – Apply to elements with the given tag.
- Id selector – Apply to the element with the id property. Use # in CSS.
- Class selector – Apply to elements with class property. Use . In CSS. Can combine with tag.

```
/* h1 elements */  
h1 {color:orange;}  
/* element where id="last" */  
#last {color:red;}  
/* elements where class="code" */  
.code {color:red;}  
/* p elements where class="code" */  
p.code {color: green;}
```

# CSS – Selectors

- Multiple classes. In HTML element use attribute class with all classes separated by spaces.
  - *class="class1 class2 ..."*
- Universal selector – Use \* as the selector in CSS.
- Selector group – comma separated.

```
/* Universal */  
* {font-size:14;}
```

```
/* Used for both p/h2 */  
p, h2 {font-size:12;  
color:red}
```

## Friends Page

# Justin

Justin is my best friend. We both like rock and roll.

Sam is a friend I have known for 20 years. We have been to every superbowl for the past 10 years

```
a = 1
b = 2
for i in range(a,b) :
    print(i)
```

Elements

```
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" href="style.css" <title>
  </head>
  <body>
    "Friends Page "
    <h1>Justin</h1>
    <p> Justin is my best friend. We both like rock and roll. </p>
    <p id="special"> = 50
      " Sam is a friend I have known for 20 years. We have been to every superbowl for the past 10 years "
    </p>
    <pre class="code"> a = 1 b = 2
    for i in range(a,b) : print(i)
  </pre>
  </body>
</html>
```

Style Attribute { }

#special {  
background: lightpink;  
font-family: Arial;  
font-size: 20;  
}

p {  
background: lightblue;  
font-family: Times;  
}

p {  
display: block;  
margin-block-start: 1em;  
margin-block-end: 1em;  
margin-inline-start: 0px;  
margin-inline-end: 0px;  
}

Inherited From html

html {  
display: block;  
color: text;  
}

Overrides with id

style.css

```
htmlStyledInternal.html  htmlStyledExternal.html  # style.css  x  Configure Java Runtime  Sample
Users > ios > NWMSU Spring 2021 > WebApps > 4 CSS > # style.css > .code
1  /* Sample style sheet */
2
3  h1 { color: green; }
4  p { background: lightblue; font-family: Times; }
5  #special { background: lightpink; font-family: Arial; font-size: 20; }
6  .code { font-family: 'Courier New', Courier, monospace; }
7  background: black; color: limegreen;
8
```

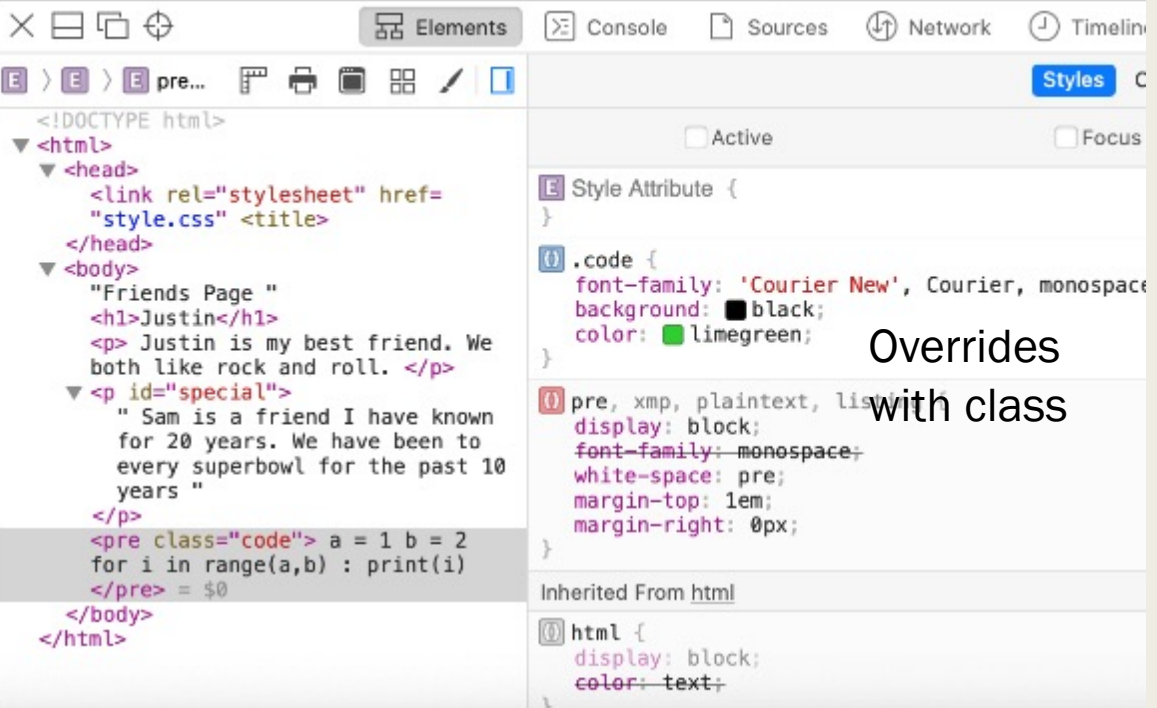
## Friends Page

# Justin

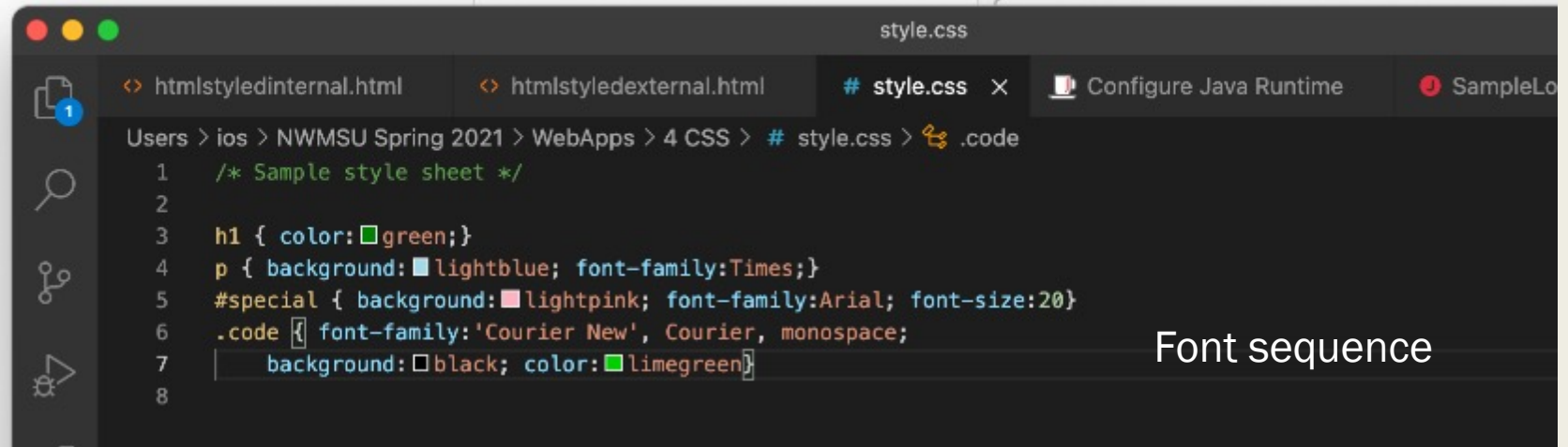
Justin is my best friend. We both like rock and roll.

Sam is a friend I have known for 20 years. We have been to every superbowl for the past 10 years

```
a = 1
b = 2
for i in range(a,b) :
    print(i)
```



Overrides  
with class



Font sequence

# CSS – Some more attributes

- background-image

`background-image:url("my.jpg")`

- text-align (options left/center/right)

`text-align:left`

- text-decoration (options underline/overline/line-through)

`text-decoration:line-through`

# CSS – Spacing

- Indentation for paragraph first line

`text-indent: 15px`

- Spacing for letters

`letter-spacing: 10px`

- Line spacing

`line-spacing: 20px`

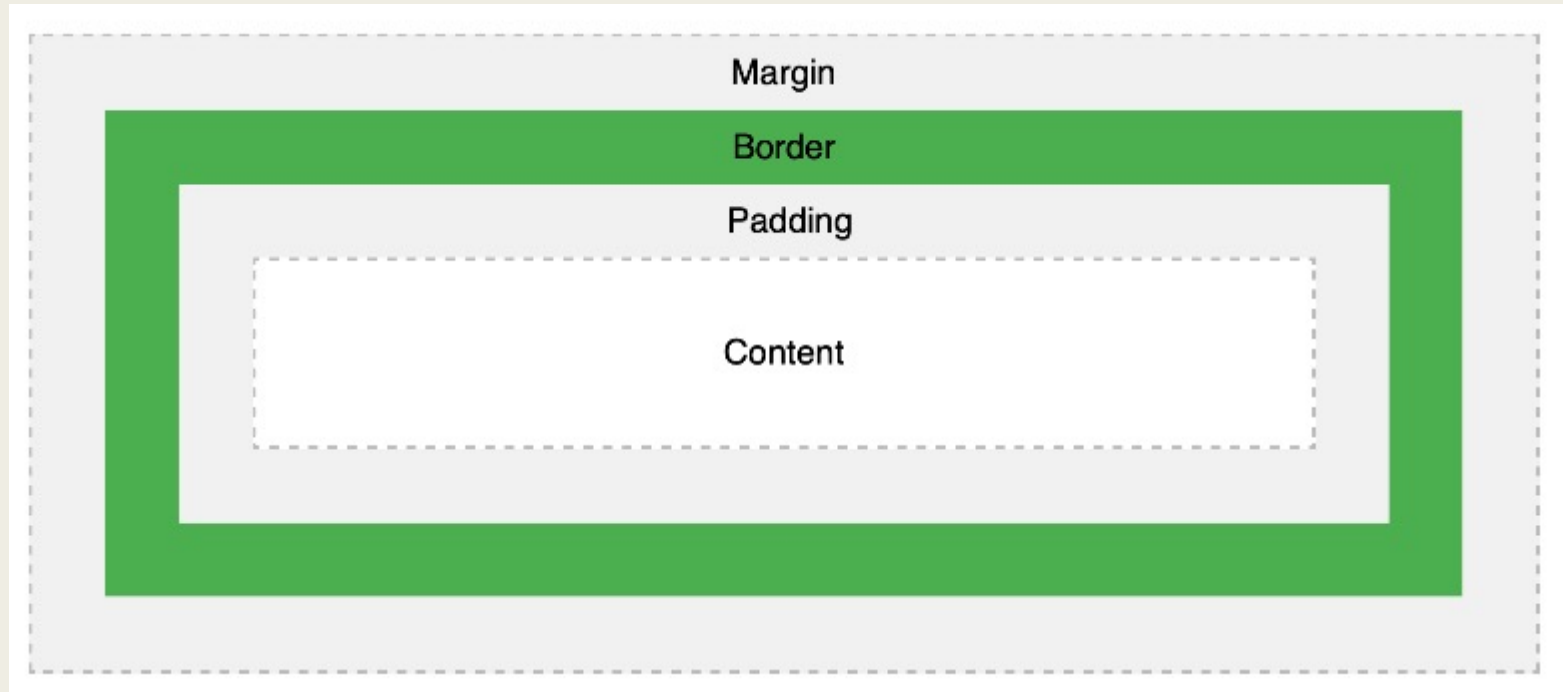


# CSS – Shadow

- Make an offset copy of font letters. Specify values in the following order
  - *Horizontal shift, Vertical shift*
  - *Blur of shadow*
  - *Color of shadow*

```
text-shadow:2px 3px 5px green
```

# CSS – Box model



# CSS – Height/Width

- Height and Width give the size of an HTML element. It does not include padding, border, margin.
  - `height: 100px`
  - `width: 100%`

# CSS – Border Controls

- Border-style – an edge on the element. Must be specified to trigger the other attributes. Takes up to four values. If four, then: top right bottom left
  - `border-style: dashed dotted solid none`
- margin – spacing around the element outside the border. Again, can specify for each edge.
  - `margin: 100px 13em 15pt 10%`
- padding – Space added inside the border.

# CSS – More Border

- `border-top-style`
  - *An individual border*
- `margin-left` – An individual margin.
- `padding-bottom` – An individual padding.
- Elements with top/bottom margins, may collapse to a single margin with the max border size.

(Note: Can add an outline around the border. Outlines are allowed to overlap.)

# CSS – Font Families

- When specifying a font, give a list of fonts.
  - *First choice is at beginning*
  - *Fallback choices follow.*
  - *Should put a general family at the end*
  - *Quote font names with spaces*
  - `font-family: "Times New Roman", Times, serif`
- `serif, sans-serif, monospace, cursive, fantasy`

# CSS – Web Safe Fonts You Should Know

- Arial
- Helvetica
- Times New Roman
- Garamond
- Courier New
- Brush Script MT

(Note: Can use a link to pull in other fonts.)

# CSS – Fonts



Which is most readable?



# Gettysburg Address (Arial - Sans Serif)

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate -- we can not consecrate -- we can not hallow -- this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us -- that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion -- that we here highly resolve that these dead shall not have died in vain -- that this nation, under God, shall have a new birth of freedom -- and that government of the people, by the people, for the people, shall not perish from the earth.

# Gettysburg Address

## (Times New Roman – Serif)

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

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# Gettysburg Address

## (Courier New – Mono)

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate -- we can not consecrate -- we can not hallow -- this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us -- that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion -- that we here highly resolve that these dead shall not have died in vain -- that this nation, under God, shall have a new birth of freedom -- and that government of the people, by the people, for the people, shall not perish from the earth.

# Gettysburg Address (Brush Script MT – Script)

*Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.*

*Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.*

*But, in a larger sense, we can not dedicate -- we can not consecrate -- we can not hallow -- this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us -- that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion -- that we here highly resolve that these dead shall not have died in vain -- that this nation, under God, shall have a new birth of freedom -- and that government of the people, by the people, for the people, shall not perish from the earth.*

# Gettysburg Address (Helvetica - Sans Serif)

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate -- we can not consecrate -- we can not hallow -- this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us -- that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion -- that we here highly resolve that these dead shall not have died in vain -- that this nation, under God, shall have a new birth of freedom -- and that government of the people, by the people, for the people, shall not perish from the earth.

# Gettysburg Address (Garamond – Serif)

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

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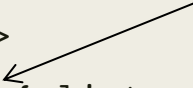
# CSS – Lists

- Can change item marker and the position of the marker with respect to the item contents.
- Modern libraries for icons will use outline definitions and will render at any density.
- For more details see [W3 Icon Tutorial](#)
- My inclination would be to use Font Awesome or Google Material.

# CSS – Lists

```
<!DOCTYPE html>
<html>
<head>
  <style>
    ul.a { list-style-type: circle;
           list-style-position: inside;
           color: red; background: green}
    ul.more { list-style-type: square;
              list-style-position: outside}}
  </style>
</head>
<body>
```

class="a" in unordered





# CSS – Lists

```
<h1>Lists</h1>
<ul class="a">
  <li>General</li>
  <li>Major</li>
  <li>Private</li>
</ul>
<ul class="more">
  <li>General</li>
  <li>Major</li>
  <li>Private</li>
</ul>
```

Selector is ul.a

Selector is ul.more

# CSS – Tables

## ■ Borders can help with tables.

Basic table border,  
use dashed, border shorthand

```
table { border: dashed 3px red;  
        border-collapse: separate;}
```

table in collapsing class, use solid

```
table.collapsing {  
    border: solid 3px;  
    border-collapse: collapse;}
```

Collapse doubled borders inside

```
td, th {border: solid 1px ;  
        text-align: center;}
```

```
tr:nth-child(even)  
    {background-color: #e2e2e2;}
```

# CSS – Tables

- Tables can be made scrollable by placing the table into a container element like `<div></div>` and using an overflow attribute.

```
<div overflow-x:auto>  
<table>
```

```
<\table>  
<\div>
```

# CSS – Selector Combinators

- We can specify relationships to other elements for the selected element. Example: The first selects p elements that are in a div container and sets the color to red. The second selects div elements and p elements.
- This one is tricky because the difference is a missing comma.
- There are other combinators as well you can read about.

```
div p {  
  color:red  
}
```

```
div, p {  
  color:green  
}
```

# CSS – Selector Pseudo class

- We can select elements that are in a particular state as indicated with a :state. Examples:
- `a:link`      apply to unvisited links
- `a:visited`   apply to visited links
- `p:hover`    p elements the mouse is hovering over
- `p:first-child`   The first child of a p element.
- And many more

```
p:hover {  
    color:red  
}
```

# CSS – Selector Pseudo element

- We can select a part of an element to apply the style to. Use a double colon to indicate. Example:
- `p::first-line` apply to the first line of every p element.

```
p::first-line {  
    font-size:20  
}
```

# CSS – Navigation Bars

- A navbar is a convenient way to group together links that allow easy navigation over a website.
- We need an underlying HTML. For our navbar, we will use an unordered list of links.
- Use `display:block` with the `a` element so that the entire block can be clicked on.

# CSS – Navigation Bars (Vertical)

```
<ul class="navbar-vertical">  
  <li> <a href="first.html">First</a> </li>  
  <li> <a href="second.html">Second</a> </li>  
  <li> <a href="third.html">Third</a> </li>  
</ul>
```



# CSS – Navigation Bars

```
ul.navbar-vertical {  
    /* remove these */  
    list-style-type: none;  
    margin: 0;  
    padding: 0;  
  
    width: 100px;  
    background-color: red;  
}  
  
ul.navbar-vertical a {  
    display: block; /* all is clickable */  
    color: #000;  
}  
/* on hover change the link color*/  
ul.navbar-vertical a:hover {  
    background-color: #555;  
    color: white;  
}
```

# CSS – Navigation Bars (Horizontal)

- For the horizontal navbar we want the list items to stack horizontally instead of the normal vertically. There are two ways to do that
  - *Use `display:inline` to put them on the same line*
  - *Use `float:left` to have each list item float in its container class to the left edge.*

# CSS – Navigation Bars (Horizontal)

```
<ul class="navbar-horizontal">  
  <li> <a href="first.html">First</a> </li>  
  <li> <a href="second.html">Second</a> </li>  
  <li> <a href="third.html">Third</a> </li>  
</ul>
```

# CSS – Navigation Bars

```
ul.navbar-horizontal {  
    /* remove these */  
    list-style-type: none;  
    margin: 0;  
    padding: 0;  
}  
  
ul.navbar-horizontal li {  
    float:left; /* line up horizontally */  
    color:#000;  
    background-color:purple  
}  
  
ul.navbar-horizontal a {  
    display:block;  
    padding:8px  
  
    /* on hover change the link color*/  
ul.navbar-horizontal a:hover {  
    background-color: #555;  
    color:white;  
}
```

# References

- [W3 Schools CSS](#) A good place to explore CSS. Has examples and quizzes.
- [MDN Web Docs](#)