

Write your name below and indicate your role,

Project Manager (PM), Recorder (R)

Name \_\_\_\_\_ Role \_\_\_\_\_

Name \_\_\_\_\_ Role \_\_\_\_\_

## Box Model

### Your Tasks

- ☐ Apply the width, height, padding, border, and margin properties to create a box
- ☐ Apply the width and height properties to style block elements
- ☐ Have Ms. Pluska check off the above tasks
- ☐ Apply the border property to style block elements
- ☐ Apply the padding and margin properties to style block elements
- ☐ Center block elements
- ☐ Receive credit for the group portion of this lab

### ☐ Apply the width, height, padding, border, and margin properties to create a box

The box model comprises the set of properties which define parts of an element that take up space on a web page. The model includes the content area's size (*width* and *height*) and the element's *padding*, *border*, and *margin*. The properties include:

**Width and height** — specifies the width and height of the content area.

**Padding** — specifies the amount of space between the content area and the border.

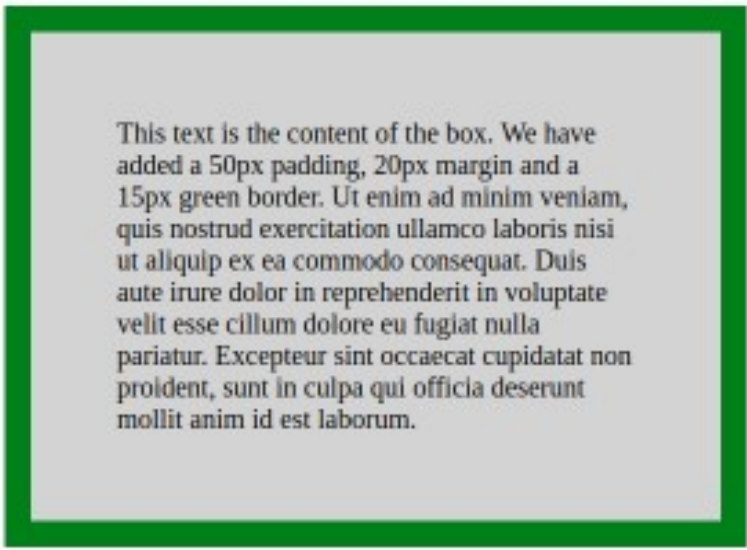
**Border** — specifies the thickness and style of the border surrounding the content area and padding.

**Margin** — specifies the amount of space between the border and the outside edge of the element.

The image below is a visual representation of the box model



A common tag used to organize content into boxes is the `<div></div>` tag. And, just as the tag implies, the `<div>` tag is used to *divide* content.

Index.html	Styles.css
<pre> &lt;!DOCTYPE html&gt; &lt;html&gt; &lt;head&gt;   &lt;title&gt;My Box&lt;/title&gt;   &lt;link href="style.css" type="text/css" rel="stylesheet"&gt; &lt;/head&gt; &lt;body&gt;   &lt;div&gt; This text is the content of the box. We have added a 50px padding, 20px margin and a 15px green border. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariat. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. &lt;/div&gt; &lt;/body&gt; &lt;/html&gt; </pre>	<pre> div {   background-color: lightgrey;   width: 300px;   border: 15px solid green;   padding: 50px;   margin: 20px; } </pre>
Output	
	

Consider the code snippet below. Write a style rule for the salad-pic class to create the following output (do your best ;-))

Each property and their usage are summarized below,

Property	Values	Description
height	1em, 2em, 2.5em, etc	Specifies the height of the box
width	5%, 10%, 15%, etc	Specifies the width of the box
padding	1em, 1.5em, 2em, etc	Specifies the amount of space between the content area and the border
margin	1em, 1.5em, 2em, etc	Specifies the amount of space between the border and the outside edge of the element.
border	2em solid green, 1em dashed blue, .5em dotted grey, 2.5em double purple, etc	Specifies the thickness and style of the border surrounding the content area and padding. Notice there are three attributes associated with this property.

Index.html	Styles.css
<pre> &lt;!DOCTYPE html&gt; &lt;html&gt; &lt;head&gt;   &lt;title&gt;My Recipes&lt;/title&gt;   &lt;link href="style.css" type="text/css" rel="stylesheet"&gt; &lt;/head&gt; &lt;body&gt;   &lt;div class = "salad-pic"&gt;     This is some salad content   &lt;/div&gt;  &lt;/body&gt; &lt;/html&gt; </pre>	

#### Output



### □ Apply the width and height properties to style block elements

Any element that takes up space on a web page is considered a box element. Consider the following elements: `<p></p>`, `<h1></h1>`, `<h2></h2>`, `<img>`. Because all these elements take up space, they can be styled using the same box properties as applied above.

If the width property is not specified for an element, the element will take up 100% of the screen. If the height property is not specified, the height will adjust to size of the content. This is illustrated below,

Index.html	Styles.css
<pre> &lt;!DOCTYPE html&gt; &lt;html&gt; &lt;head&gt;   &lt;title&gt;Vacation World&lt;/title&gt;   &lt;link href="style.css" type="text/css" rel="stylesheet"&gt; &lt;/head&gt; &lt;body&gt;   &lt;h1&gt;Taco recipe&lt;/h1&gt;   &lt;p class = "recipe-info"&gt;     How to make tacos   &lt;/p&gt;   &lt;img src="tacos.jpg"&gt;  &lt;/body&gt; &lt;/html&gt; </pre>	<pre> h1{ background-color:lightgray; } </pre>

# Taco recipe

How to make tacos

The below css rule for the <h1> element illustrates how to set the height and width of an element.

```

h1{
width:50%;
height: 2em;
background-color:lightgray;
}

```

Notice in the above rule, the width is specified as a percentage and the height is specified in *em* units which is relative to the current size. This is important especially for scaling your website.

Setting the *height* and *width* of an image can be tricky, because setting both can cause the image to be distorted if they are not scaled properly. To avoid distortion, simply set one parameter (height or width) and the other will scale automatically,

CSS rule	Original	Resized
<pre> img{ width:10em; } </pre>		

In the Styles.css page,

- (a) write a rule for the class attribute *recipe-info* to confine the contents of the block element to only 25% of the width of the screen. Give it a background-color of lightgray to make the effect more visible.
- (b) Write a rule for the image so that it scales to a width of 5em.

Index.html	Styles.css
<pre>&lt;!DOCTYPE html&gt; &lt;html&gt; &lt;head&gt;   &lt;title&gt;Vacation World&lt;/title&gt;   &lt;link href="style.css" type="text/css" rel="stylesheet"&gt; &lt;/head&gt; &lt;body&gt;  &lt;div id="recipe-info"&gt;This is my paragraph. This is my paragraph. This is my paragraph.&lt;/p&gt; &lt;img src = "cat.jpg"&gt;  &lt;/body&gt; &lt;/html&gt;</pre>	

## □ Have Ms. Pluska check off the above tasks



Before you continue have Ms. Pluska check off the above tasks

Do not continue until you have Ms. Pluska's (or her designated TA's) signature \_\_\_\_\_

## □ Apply the border property to style block elements

A *border* is a line that surrounds an element, like a frame around a painting. Borders can be set with a specific width, style, and color.

**width** — The thickness of the border. A border's thickness can be set in pixels or with one of the following keywords: thin, medium, or thick.

**style** — The design of the border. Web browsers can render any of 10 different styles. Some of these styles include: none, dotted, and solid.

**color** — The color of the border.

```
p {
  border: thick solid coral;
}
```

In the example above, the border has a *width* of thick, a *style* of solid and a *color* of coral. All three properties are set in one line of code.

The default border is medium none color, where color is the current color of the element. If width, style, or color are not set in the CSS file, the web browser assigns the default value for that property.

```
p {
  border: solid coral;
}
```

In the above example, the border style is set to solid and the color is set to coral. The width is not set, so it defaults to medium.

In Styles.css, (a) Add a dotted 1 pixel red border to the div element with id = banner (b) Add a thin solid coral border around each <li> element	
Index.html	Styles.css
<pre>&lt;!DOCTYPE html&gt; &lt;html&gt; &lt;head&gt;   &lt;title&gt;The Terminal&lt;/title&gt;   &lt;link href="Styles.css" rel="stylesheet"&gt; &lt;/head&gt; &lt;body&gt;   &lt;ul class="navigation"&gt;     &lt;li&gt;LOCAL&lt;/li&gt;     &lt;li&gt;NATIONAL&lt;/li&gt;     &lt;li class="logo"&gt;THE TERMINAL&lt;/li&gt;     &lt;li&gt;GLOBAL&lt;/li&gt;     &lt;li&gt;OPED&lt;/li&gt;     &lt;li class="donate"&gt;DONATE&lt;/li&gt;   &lt;/ul&gt;   &lt;div id="banner"&gt;     &lt;h1&gt;Conservation Efforts at Lake Tahoe Being Praised by Nation's Leaders&lt;/h1&gt;   &lt;/div&gt; &lt;/body&gt; &lt;/html&gt;</pre>	

## ❑ Apply the padding and margin property to style block elements

### Padding

The space between the contents of a box and the borders of a box is known as *padding*. Padding is like the space between a picture and the frame surrounding it. In CSS, you can modify this space with the padding property.

```
p.content-header {
  border: 3px solid coral;
  padding: 2em;
}
```

The code in this example puts 2em of space between the content of the paragraph (the text) and the borders, on all four sides.

The padding property is often used to expand the background color and make content look less cramped.

If you want to be more specific about the amount of padding on each side of a box's content, you can use the following properties:

- padding-top
- padding-right
- padding-bottom
- padding-left

Each property affects the padding on only one side of the box's content, giving you more flexibility in customization.

```
p.content-header {  
  border: 3px solid fuschia;  
  padding-bottom: 1em;  
}
```

## Margin

Margin refers to the space directly outside of the box. The *margin* property is used to specify the size of this space.

```
p {  
  border: 1px solid aquamarine;  
  margin: 2em;  
}
```

The code in the example above will place 2em of space on the outside of the paragraph's box on all four sides. This means that other HTML elements on the page cannot come within 2em of the paragraph's border.

If you want to be even more specific about the amount of margin on each side of a box, you can use the following properties:

- margin-top
- margin-right
- margin-bottom
- margin-left

Each property affects the margin on only one side of the box, providing more flexibility in customization.

```
p {  
  border: 3px solid DarkSlateGrey;  
  margin-right: 1.5em;  
}
```

In the example above, only the right side of the paragraph's box will have a margin of 1.5 em. It's common to see margin values used for a specific side of an element.

The content below looks crowded. Write css rules to style the content to make it appear more readable.

### Output

LOCAL  
NATIONAL  
**THE TERMINAL**  
GLOBAL  
OPED  
DONATE

Conservation Efforts  
at Lake Tahoe  
Being Praised by  
Nation's Leaders

SHARE FAVORITE READ

### Index.html

```
<!DOCTYPE html>
<html>
  <head>
<link rel = "stylesheet" type = "text/css"
href = "MyStyles.css" />
  </head>
  <body>
<ul class = "nav">
  <li>LOCAL</li>
  <li>NATIONAL</li>
  <li class="logo">THE TERMINAL</li>
  <li>GLOBAL</li>
  <li>OPED</li>
  <li class="donate">DONATE</li>
</ul>
<div class="content">
<h1>Conservation Efforts at Lake Tahoe
Being Praised by Nation's Leaders</h1>
</div>
<div class="share">
  <a href="#">SHARE</a>
  <a href="#">FAVORITE</a>
  <a href="#">READ</a>
</div>
</body>
</html>
```

### MyStyles.css

## □ Center block elements

The *margin* property also lets you center content. However, you must follow a few syntax requirements. Take a look at the following example:

```
div {
  margin: 0 auto;
}
```

In the example above, `margin: 0 auto;` will center the divs in their containing elements. The 0 sets the top and bottom margins to 0 pixels. The auto value instructs the browser to adjust the left and right margins until the element is centered within its containing element.



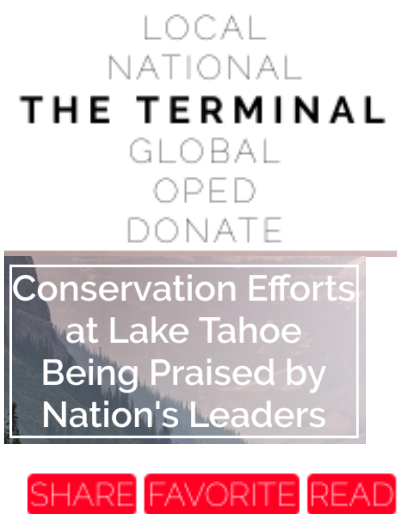
The div elements in the example above should center within an element that fills the page, but this doesn't occur. Why?

In order to center an element, a width must be set for that element. Otherwise, the width of the div will be automatically set to the full width of its containing element, like the <body>, for example. It's not possible to center an element that takes up the full width of the page.

```
div.headline {  
  width: 400px; margin: 0 auto;  
}
```

In the example above, the width of the div is set to 400 pixels, which is less than the width of most screens. This will cause the div to center within a containing element that is greater than 400 pixels wide.

Refer to the previous example which had the following output. Modify the css to center the elements shown.

Output	Modified CSS
	

## ❑ Receive Credit for the group portion of this lab



- Indicate the names of all group members.
- Have Ms. Pluska check your Box Model tasks
- Submit your lab to the needs to be graded folder to receive credit for the group portion of this lab.
- Do not submit your lab until you have Ms. Pluska's (or her designated TA's) signature

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