

Topic	Capstone class: Advanced CSS	
Class Description	Students will learn to set appropriate margin and padding for the different elements in the page. They will learn advanced css selectors like ':list' and ':hover'. They will also learn advanced CSS effects like change in opacity when the mouse is hovered over an element.	
Class	C52	
Class time	45 mins	
Goal	<ul style="list-style-type: none"> Set correct margin and padding effects on the portfolio header. Change the color of visited and unvisited links in the header using the ':list' selector. Create a hover effect to display the name of the game, when the mouse is hovered over the image. 	
Resources Required	<ul style="list-style-type: none"> Teacher Resources <ul style="list-style-type: none"> Laptop with internet connectivity Earphones with mic Notebook and pen Visual Code Studio installed Student Resources <ul style="list-style-type: none"> Laptop with internet connectivity Earphones with mic Notebook and pen Visual Code Studio installed 	
Class structure	Warm Up Teacher-led Activity Student-led Activity Wrap up	5 mins 15 min 15 min 5 min
<p style="text-align: center;"><u>CONTEXT</u></p> <ul style="list-style-type: none"> Show certain default effects in the page - change in color - when you click on a link. Observe certain issues in the portfolio page like "student name" in the header cramped to the right. 		

Class Steps	Teacher Action	Student Action
Step 1: Warm Up (5 mins)	Hi. Welcome to the Capstone Class . Are you excited? Where did we leave our portfolio page in the last class?	ESR: Yes Student explains the state of the portfolio page: - The page has a header and different sections - 'Projects' and 'About me' - that the user can visit. - 'Projects' redirects to the home portfolio page. 'About me' redirects to the about me page. - The page has images and names of the different games we have developed. Clicking on the image redirects the user to the github page. - The layout of the different elements is done using flexbox. - We have used custom colors on the page using a hexadecimal color system.
	Awesome, what are the issues which you see on the portfolio page? What would you like to change?	ESR: (varied) - The header name and links to the right are cramped for space. - The links to the right take a different color automatically. - They also take a different color when they are visited by clicking on them.

	<p>We will work on these issues in today's class.</p> <p>Today, we will set the correct margin and padding effects on the portfolio header.</p> <p>We will:</p> <ul style="list-style-type: none"> - create right spacing between the elements on the page. - use advanced css selectors to control the color of the links before and after visiting the link. - use advanced css selector to create a hover effect. We will display the name of the game only when someone hovers over the image. <p>Isn't that cool?</p>	<p>ESR: Yes!</p>
	<p>So, without further ado, let's get going.</p>	-
<p>Teacher Initiates Screen Share</p>		
<p><u>CHALLENGE</u></p> <ul style="list-style-type: none"> • Differentiate between margin and padding. • Use Advanced css selector ':list' to change the color of a visited link. 		
<p>Step 2: Teacher-led Activity (15 min)</p>	<p>When we used Flexbox for our page layout, it automatically gave appropriate spacing between the different elements.</p> <p>However, sometimes we might need more control on how much spacing we want between the elements.</p> <p>For example: As we talked, we are</p>	<p>Student listens.</p>

not very happy about how cramped the header elements are to the right and left side of the page.



There are two ways in which we can customize the spacing between the elements - using margins and padding properties. They are important properties, often used in CSS and it is also important

	<p>to differentiate between the two.</p> <p>To understand the difference, let's add a border around each element inside the header.</p> <p>What should we do to do that?</p>	<p>The student guesses.</p> <p>He/She gives a reference to the header class inside which all the elements are present.</p>
	<p>Earlier, when we wanted a box around every element in the page, we used * as a CSS selector.</p> <p>Now when we need all the elements inside header class, we can use ".header *" as the CSS selector.</p> <p>Do you remember why we use "." before header?</p>	<p>ESR:</p> <p>Yes, because it is a class name. Class names have selectors beginning with "."</p> <p>HTML tags are referenced without the "."</p>
	<p>Teacher adds code in style.css to reference the elements inside the header tag and add a solid border around each element.</p> <p>Teacher shows the output</p>	<p>The student observes and learns.</p>

```
# style.css  index.html X
index.html > html > body > div.grid > div.item
1  <!DOCTYPE HTML>
2  <html>
3    <head>
4      <title>My Portfolio page</title>
5      <link rel = "stylesheet"
6        type = "text/css"
7        href = "style.css" />
8    </head>
9
10   <body>
11     <div class="header">
12       <h1>Student Name</h1>
13       <div class="menu">
14         <a href="index.html">Projects</a>
15         <a href="aboutme.html">About Me</a>
16       </div>
17     </div>
18
19
20     <h2>These are some games designed by me</h2>
21     <p>Games use p5.js, p5.play and matter.js libraries in javascript</p>
22
23     <div class = "grid">
24       <div class="item">
25         <a href = "https://editor.p5js.org/whitehatjr/present/eP1rHCACH">
30         <a href = "#"></a>
31         <p>Name of game 2</p>
```

```

style.css x index.html
style.css > .site-description
1  h1 {
2    color: white;
3  }
4
5  .header {
6    border: solid;
7  }
8
9  .header{
10   background-color: cadetblue;
11   display: flex;
12   justify-content: space-between;
13 }
14
15 .site-description{
16   display: flex;
17   flex-direction: column;
18   justify-content: first baseline;
19 }
20
21 .grid{
22   display: flex;
23   flex-wrap: wrap;
24   justify-content: space-evenly;
25 }
26
27 .footer{
28   display: flex;
29   justify-content: flex-end;
30 }
31
32 p,h2{

```



Now, our issue was that the name in the header (under h1 tag) is too cramped to the left.

The student listens and asks questions for clarity.

	I will be using the two properties - margin and padding - separately on h1 to create the proper spacing. You need to tell me the difference between the two.	
	<p>Teacher adds a margin of 30 px and shows the output.</p> <p>Note: px stands for pixels. the screen is made up of pixels. What do you see?</p>	There is space of 30 pixels created all around the h1 box.

```

# style.css x index.html
# style.css > h1
1 h1 {
2   color: white;
3   margin: 30px;
4 }
5
6 .header * {
7   border: solid;
8 }
9
10 .header{
11   background-color: cadetblue;
12   display: flex;
13   justify-content: space-between;
14 }
15
16 .site-description{
17   display: flex;
18   flex-direction: column;
19   justify-content: first baseline;
20 }
21
22 .grid{
23   display: flex;
24   flex-wrap: wrap;
25   justify-content: space-evenly;
26 }
27
28 .footer{
29   display: flex;
30   justify-content: flex-end;
31 }
32

```


<div> <div>Student Name</div> <div>PROJECTS ABOUT ME</div> </div> <div> <div>These are some games designed by me</div> <div>Games use p5.js, p5.play and matter.js libraries in javascript</div> <div> <div>300 x 300</div> <div>300 x 300</div> <div>300 x 300</div> <div>300 x 300</div> </div> <div> <div>Powered by HTML.COM</div> <div>Powered by HTML.COM</div> <div>Powered by HTML.COM</div> <div>Powered by HTML.COM</div> </div> <div> <div>Trex Runner Game</div> <div>Name of game 2</div> <div>Name of game 3</div> <div>Name of game 4</div> </div> </div>			<div> <div>Great. we could have also chosen to add margin to only the left side of the box using margin-left property.</div> <div>Teacher writes code and shows the output. What do you see?</div> </div> <div> <div>Now there is a margin of 30px only to the left. OR</div> <div>The box has moved 30px to the right.</div> </div>	
--	--	--	--	--

```

# style.css x index.html
# style.css > h1
1 h1 {
2   color: white;
3   margin-left: 30px;
4 }
5
6 .header * {
7   border: solid;
8 }
9
10 .header{
11   background-color: cadetblue;
12   display: flex;
13   justify-content: space-between;
14 }
15
16 .site-description{
17   display: flex;
18   flex-direction: column;
19   justify-content: first baseline;
20 }
21
22 .grid{
23   display: flex;
24   flex-wrap: wrap;
25   justify-content: space-around;
26 }
27
28 .footer{
29   display: flex;
30   justify-content: flex-end;
31 }
32

```



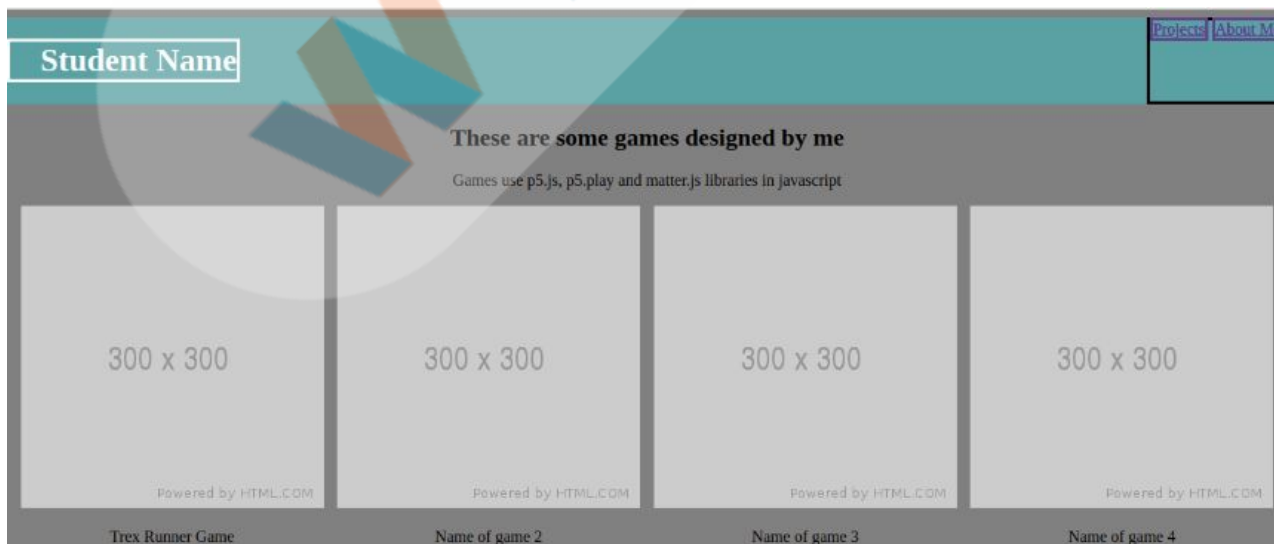
Great! Now let's look at the padding property.

	<p>Teacher adds a padding-left to h1.</p> <p>Teacher runs the code and shows the output.</p> <p>What do you see?</p>	<p>The box is still there but the content inside the box has moved to the right.</p>
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```

# style.css x index.html
# style.css > h1
1 h1 {
2   color: white;
3   padding-left: 30px;
4 }
5
6 .header * {
7   border: solid;
8 }
9
10 .header{
11   background-color: cadetblue;
12   display: flex;
13   justify-content: space-between;
14 }
15
16 .site-description{
17   display: flex;
18   flex-direction: column;
19   justify-content: first baseline;
20 }
21
22 .grid{
23   display: flex;
24   flex-wrap: wrap;
25   justify-content: space-evenly;
26 }
27
28 .footer{
29   display: flex;
30   justify-content: flex-end;
31 }
32

```




	<p>Yes! We say that a padding of 30 pixels has been added to the content inside h1.</p> <p>Sometimes we need margin, padding or both while creating design layouts.</p> <p>For now, let's revert to the margin-left property.</p>	<p>Student listens and asks questions.</p>
	<p>Now, I want you to observe how the links to the right automatically take blue color. This is the default color scheme of any links on the page. What if we wanted their color to be different?</p> <p>Also, the color of a link when visited changes slightly. What can we do to control the color of the link after it is visited?</p>	<p>The student thinks about it for a few seconds.</p>
	<p>We have two selectors which allow us to customize the style of links.</p> <ul style="list-style-type: none"> • 'a:link' allows us to customize the style of links. • 'a:visited' allows us to customize the style of visited links. <p>Let's try this out. Can you guide me on what colors and style should be used for the links</p>	<p>The student guides the teacher to write style code inside the css selector a:link and a:visited.</p>

	<p>Teacher writes the code with the help of the inputs given by the student and runs it to see the output.</p> <p>What do you see?</p> <p>You can add more style to the links.</p>	<p>The link colors have changed.</p>
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```

# style.css x index.html
# style.css > a:link
19 justify-content: first baseline;
20 }
21
22 .grid{
23   display: flex;
24   flex-wrap: wrap;
25   justify-content: space-evenly;
26 }
27
28 .footer{
29   display: flex;
30   justify-content: flex-end;
31 }
32
33 p,h2{
34   text-align: center;
35 }
36
37 body{
38   background-color: #808080;
39 }
40
41 a:link{
42   color: white;
43 }
44
45 a:visited{
46   color: white;
47 }

```

		
	<p>Alright. Here is a challenge for you. I want you to create proper margins and padding for the links on the right.</p> <p>Once you are done, I will help you to create an effect where the game name appears on the page only when the mouse is hovered over the image.</p> <p>Let's start.</p>	-
Teacher Stops Screen Share		
	<p>Now it's your turn. Please share your screen with me.</p>	
<ul style="list-style-type: none"> ● Ask Student to press ESC key to come back to panel ● Guide Student to start Screen Share ● Teacher gets into Fullscreen 		
<p style="text-align: center;"><u>ACTIVITY</u></p> <ul style="list-style-type: none"> ● Add proper margin and padding effects on different elements in the page. ● Use Advanced css selector ' :hover' to display the name of the game only when mouse is hovered over the image. 		

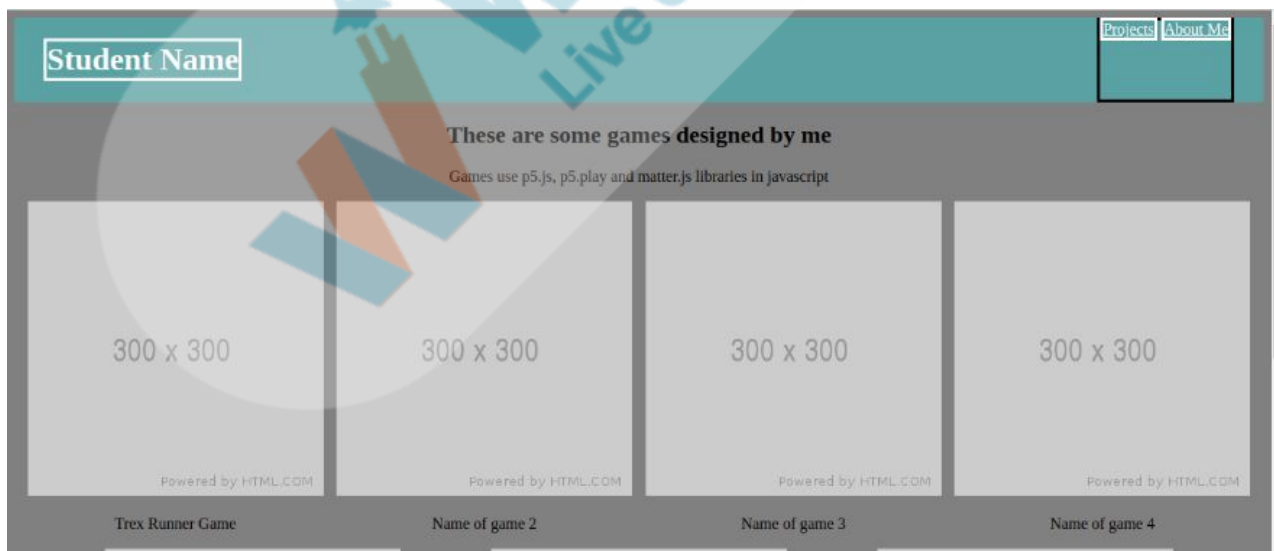
Step 3: Student-Led Activity (15 min)	<p>Guide the student to add proper margin and padding to the links to the right.</p> <p>If we want to add margin to the left of both the links, which element should I add margin to?</p>	<p>ESR:</p> <p>“menu” class since it contains both the link elements.</p>
	<p>Ok, why don't you add some margin to the right of the “menu” class.</p>	<p>The student writes code to add some right margin to the “menu” class.</p>



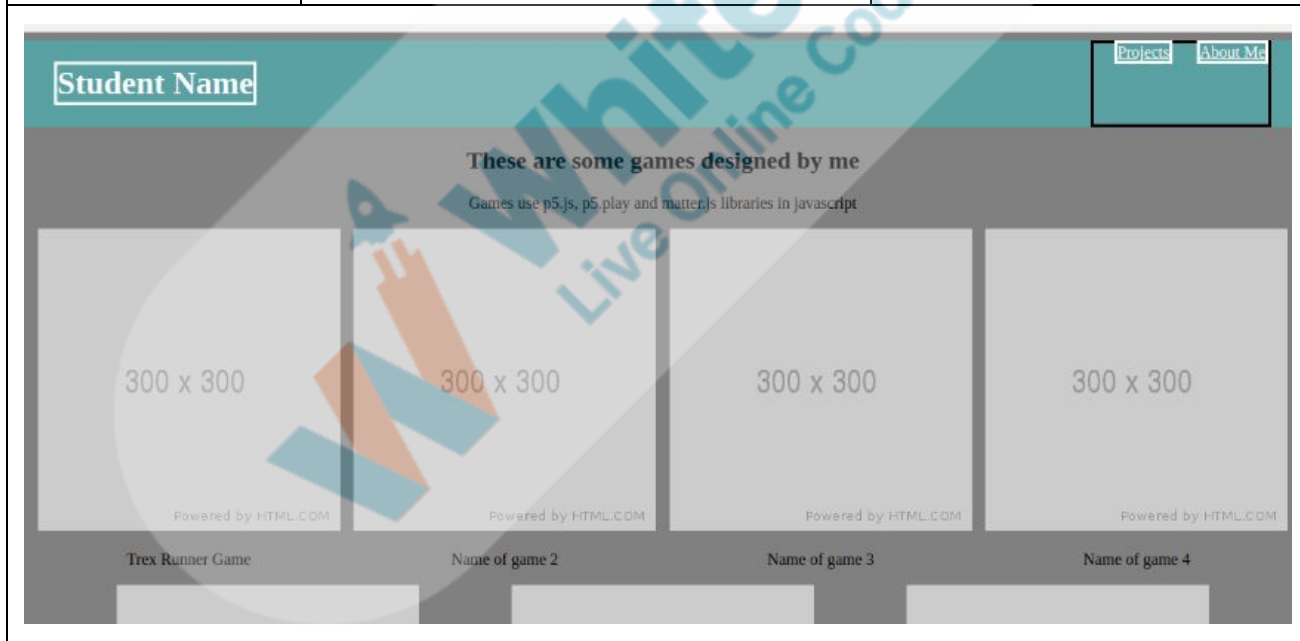
```

# style.css x  index.html
# style.css > .menu
42 |   color: white;
43 | }
44 |
45 | a:visited{
46 |   color: white;
47 | }
48 |
49 | .menu{
50 |   margin-right: 30px;
51 | }

```



	<p>What if we want the two links - Projects and About Me - to be spaced a little apart?</p> <p>Which css selector we will be adding the margin to?</p> <p>If we add the margin to the ".menu li" , only the li elements inside the menu class will take the style. All other links will remain unchanged.</p>	<p>ESR: We can add some margin-left to the link elements.</p> <p>ESR: we will be adding the css element to the element.</p>
	<p>Teacher helps the student with the code.</p>	<p>The student writes the code to add margin-left to the li elements inside the menu.</p> <p>He/She runs the code to check the output.</p>




```
# style.css x index.html
# style.css > .menu a
42 | color: white;
43 | }
44 |
45 | a:visited{
46 |   color: white;
47 | }
48 |
49 | .menu{
50 |   margin-right: 30px;
51 | }
52 |
53 | .menu a{
54 |   margin-left: 20px;
55 | }
```

Let's try writing code for displaying text on the top of the image first.

We want the text to be centred in the div containing the image.

The <p> and the tags are contained inside item div class.

We want to position elements inside item div class in relative position to it. For example: We want the text to be centred relative to this div and not the entire page.

We will add the property "position: relative" in the item class.

We will also add the property "position: absolute" in the <p> tag inside item.

We want to align the text inside <p> 50% from the top and 50 % from the

Student writes the code and checks the output.

left. We can use these properties to style the text.

```
# style.css > ...
35 }
36
37 body{
38   background-color: #808080;
39 }
40
41 a:link{
42   color: white;
43 }
44
45 a:visited{
46   color: white;
47 }
48
49 .menu{
50   margin-right: 30px;
51 }
52
53 .menu a{
54   margin-left: 20px;
55 }
56
57 .item{
58   position: relative;
59 }
60
61 .item p{
62   position: absolute;
63   top: 50%;
64   left: 50%;
65 }
66
```




You will notice that the text is not aligned exactly at the centre of the image - this is because the text STARTS from the centre but the width and height of the text is not taken into account.

There is a simple transformation using which we can translate the text to start so that the entire text is centred.

Guide the student to use the transform property to translate the text. Allow the student to experiment with “transform” property.

The student writes the code to check the output.

```
# style.css > .item p
35 }
36
37 body{
38   background-color: #000000;
39 }
40
41 a:link{
42   color: white;
43 }
44
45 a:visited{
46   color: white;
47 }
48
49 .menu{
50   margin-right: 30px;
51 }
52
53 .menu a{
54   margin-left: 20px;
55 }
56
57 .item{
58   position: relative;
59 }
60
61 .item p{
62   position: absolute;
63   top: 50%;
64   left: 50%;
65   transform: translate(-50%, -50%);
66 }
```

			<p>But we do not want the text to be always displayed. We want it only when we hover over the image.</p> <p>Visibility is controlled by 'opacity' property.</p> <p>We can change the opacity of the text to 0.</p> <p>However, when we hover, we want the opacity to become 1.</p> <p>We use <code>':hover'</code> selector over the item to style the <code><p></code> element when the mouse is hovered over the item div class.</p> <p>Guide the student to write the code for this.</p>		<p>The student writes the code and checks the output by hovering over the item class div.</p>
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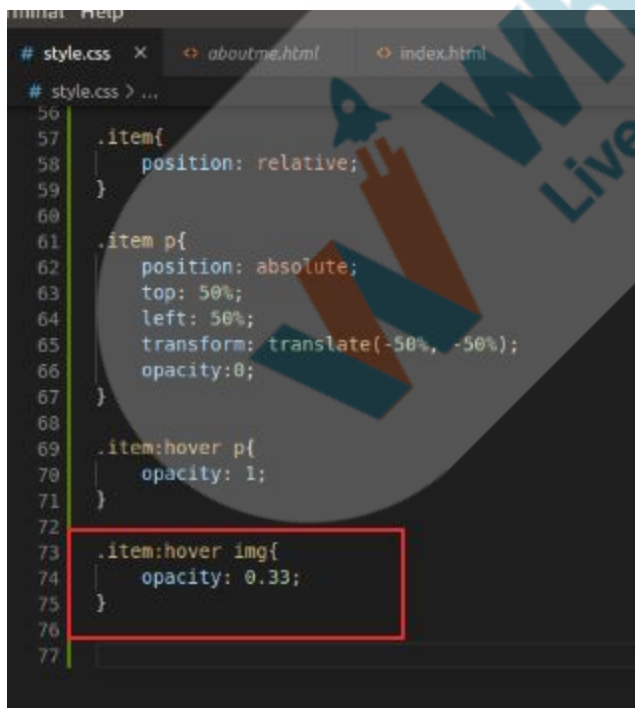
```

# style.css x aboutme.html index.html
# style.css > .item p
41 a:link{
42   color: white;
43 }
44
45 a:visited{
46   color: white;
47 }
48
49 .menu{
50   margin-right: 30px;
51 }
52
53 .menu a{
54   margin-left: 20px;
55 }
56
57 .item{
58   position: relative;
59 }
60
61 .item p{
62   position: absolute;
63   top: 50%;
64   left: 50%;
65   transform: translate(-50%, -50%);
66   opacity: 0;
67 }
68
69 .item:hover p{
70   opacity: 1;
71 }
72

```



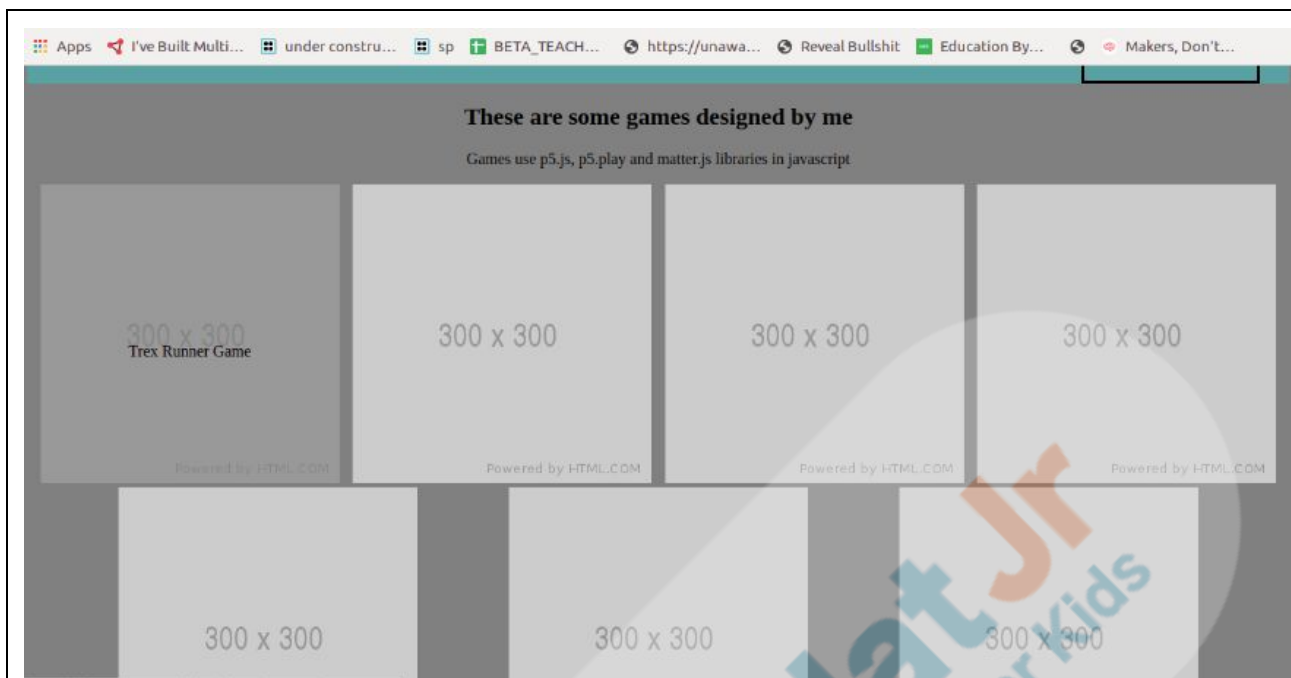
	<p>What is happening here? Can you explain in your own words?</p>	<p>ESR:</p> <p>When the mouse is not hovered over the item div class, the item has a different style, but when we hover the mouse over the item, the style of the text changes.</p> <p>We used ":hover" to tell the computer what style to render when the mouse is hovered over the item.</p>
	<p>Awesome! Now can you also reduce the opacity of the image to one-third when the mouse is hovered over the item.</p>	<p>The student writes the code to change the opacity of the image.</p> <p>He/She runs the code and checks the output.</p>



```

# style.css > ...
56
57 .item{
58   position: relative;
59 }
60
61 .item p{
62   position: absolute;
63   top: 50%;
64   left: 50%;
65   transform: translate(-50%, -50%);
66   opacity: 0;
67 }
68
69 .item: hover p{
70   opacity: 1;
71 }
72
73 .item: hover img{
74   opacity: 0.33;
75 }
76
77

```



	<p>Great job! Let's create a new github repository called "my portfolio".</p> <p>You can push the code to this github repository and host it online. You can keep updating the page as you create more projects.</p> <p>You already know how to do this.</p>	<p>Student creates a new github repository, pushes the code there and hosts it.</p>
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Teacher Guides Student to Stop Screen Share

<p>FEEDBACK</p> <ul style="list-style-type: none"> • Encourage the student to make reflection notes in the markdown format. • Complement the student for her/his effort in the class. • Encourage the student to apply correct margin and padding effects in About Me page and experiment with advanced CSS effects. 		
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<p>Step 4: Wrap-Up (5 min)</p>	<p>You now know how to style the different elements in a page using css. You can now style other elements in your page depending on your own style.</p>	<p>ESR: varied</p>
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	<p>For example: The style of the name of the game when a mouse hovers over the image can have different font, size, color weight etc.</p> <p>You know how to style it. What else would you like to change in the style of this page?</p>	
	<p>So, now you know html, css and javascript.</p> <p>It's easy for us to now get started with React Native using which we will be creating mobile apps in the upcoming classes.</p> <p>You get a “hats off”.</p> <p>In fact, we are going to start with React Native right from next class!!</p>	<p>Make sure you have given at least 2 Hats Off during the class for:</p> <div> <div>Creatively Solved Activities +10</div> <div>Great Question +10</div> <div>Strong Concentration +10</div> </div>
	<p>Congratulations! You have achieved a new milestone.</p> <p>In your capstone challenge, you will have to implement the CSS properties and concepts learnt in classes so far to create the Origami website.</p>	
Project Overview	<p>Origami Website Design Part 4</p> <p>Goal of the Project:</p> <p>Today, you learnt advanced CSS.</p> <p>You will be implementing these properties and concepts in the origami website.</p>	<p>Students engage with the teacher over the project.</p>

	<p>Story:</p> <p>Honey has an origami studio. Now she is creating a website to explain step-by-step how origami is made.</p> <p>The website is almost ready!. Now let's make it perfect by using advanced CSS properties.</p> <p>I am very excited to see your project solution and I know you both will do really well.</p> <p>Bye Bye!</p>	
<div>Teacher Clicks</div> <div>✕ End Class</div>		
Additional Activities	Help the student add more styling to his/her page - both the portfolio page and the about me page.	The student writes code to add more styling to their portfolio website.

Activity	Activity Name	Links
Teacher Activity 1	Code from last class	https://github.com/whitehatjr/StudentPortfolio1.0
Teacher Activity 2	Reference link	https://github.com/whitehatjr/Portfolio2.0
Student Activity 1	Code from last class	https://github.com/whitehatjr/StudentPortfolio1.0

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