

# Hands-on Lab: CSS Basics - Styling Your Web Page



Estimated time: 15 minutes

In this lab, you will take the role of a web developer who has been asked by a primary school to develop a web page about the solar system.

## Objectives

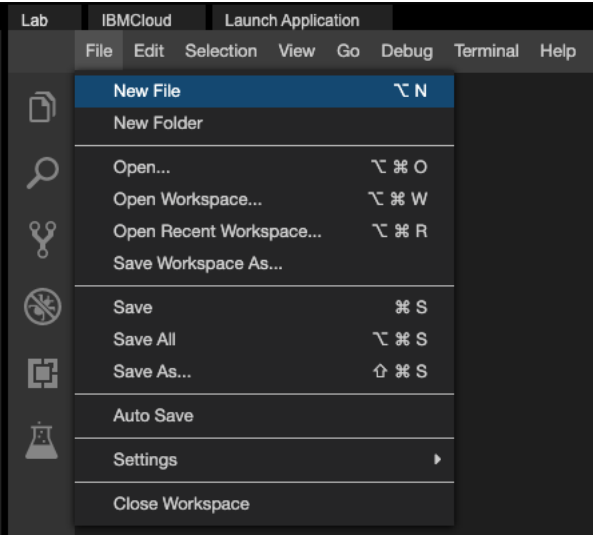
After completing this lab, you will be able to:

1. Create a basic web page
2. Specify the font family and font size for text
3. Use colors to change the appearance of elements
4. Create borders
5. Practice Exercise: Add CSS Styling to an HTML page through links

## 1. Create a Web Page

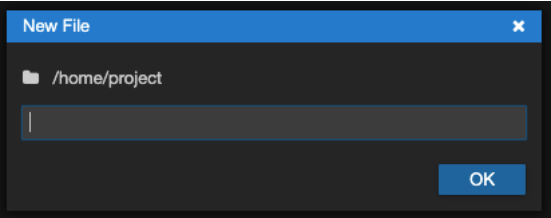
In this exercise, you will create a simple HTML web page about the solar system.

On the window to the right, click **File > New File**.



A **New File** window opens.

Enter solarsystem.html as the file name and click **OK**.



Now we'll add some HTML to the file and then apply CSS styles.

Copy and paste the following code into the file you created and save the page:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Solar System</title>
  </head>
  <body>
    <h1>Solar System</h1>
    
    <p>The solar system consists of the sun and everything that orbits the sun. This includes the eight planets and their moons, the dwarf planet
    </p>
    <p> All the planets and dwarf planets, the rocky asteroids, and the icy bodies in the Kuiper belt move around the Sun in elliptical orbits in
    </p>
    <p><strong><u> Planets in the solar system: </u></strong> </p>
    <table>
      <tr>
        <th>No. </th>
        <th>Planet Name </th>
        <th>Distance from Sun (in million km)</th>
      </tr>
      <tr>
        <td>1 </td>
        <td>Mercury</td>
        <td>57.91 m km</td>
      </tr>
      <tr>
        <td>2 </td>
        <td>Venus</td>
        <td>108.2 m km</td>
      </tr>
      <tr>
        <td>3 </td>
        <td>Earth</td>
        <td>149.6 m km</td>
      </tr>
      <tr>
        <td>4 </td>
        <td>Mars</td>
        <td>227.9 m km</td>
      </tr>
      <tr>
        <td>5 </td>
        <td>Jupiter</td>
        <td>778.5 m km</td>
      </tr>
      <tr>
        <td>6 </td>
        <td>Saturn</td>
        <td>1.434 b km</td>
      </tr>
      <tr>
        <td>7 </td>
        <td>Uranus</td>
        <td>2.871 b km</td>
      </tr>
    </table>
```

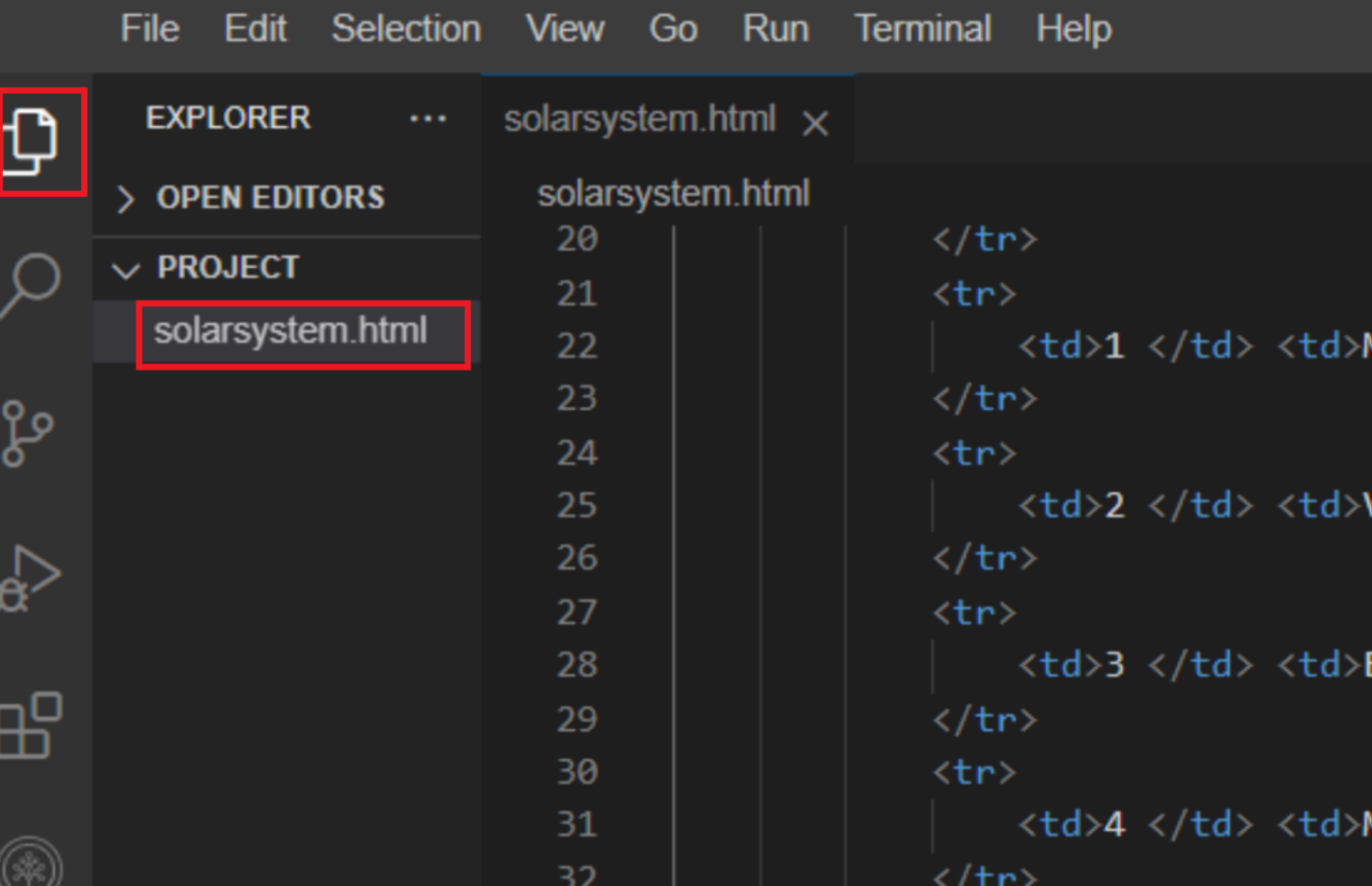
```

            <td>8</td> <td>Neptune</td> <td>4.495 billion km</td>
        </tr>
    </table>
</body>
</html>
```

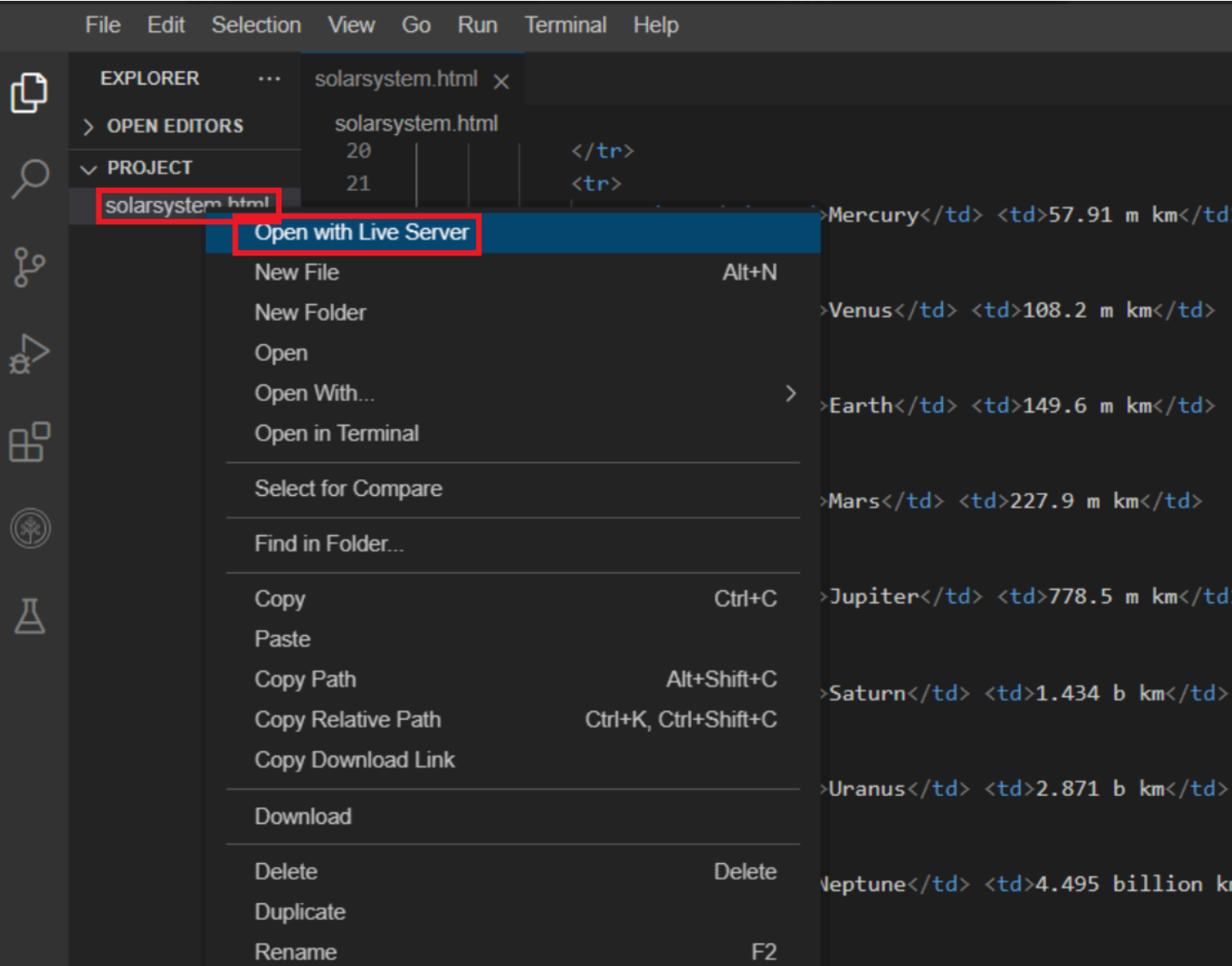
Preview your HTML File

To preview your file, you can use the built-in Live Server extension by following the instructions below.

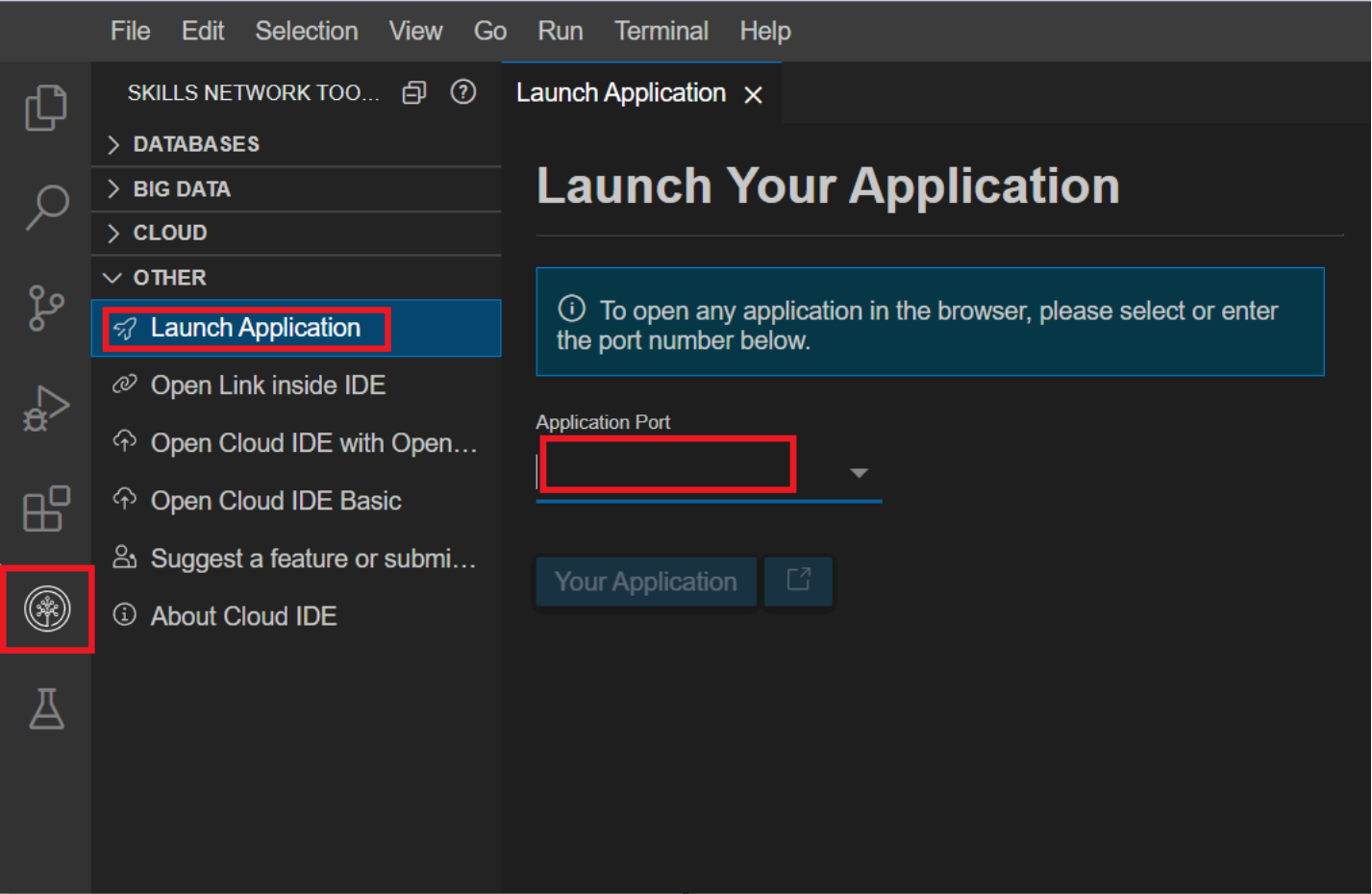
- 1. Open the file explorer and navigate to your file.



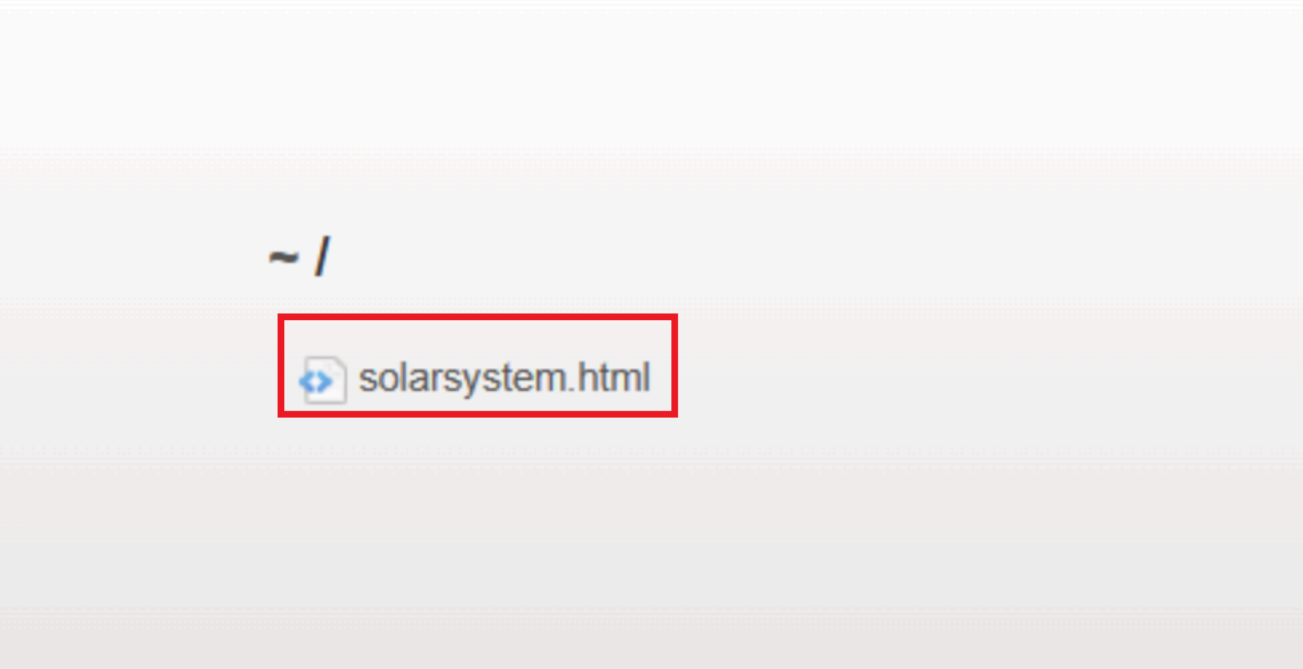
- 2.Right click on your file & click on ‘Open with Live Server’



- 3.This should show a notification mentioning that the server has started on port 5500.
- 4.Click on the Skills Network button on the left, it will open the “Skills Network Toolbox”. Then click the Other then Launch Application. From there you enter the port no. as 5500 and launch.



- 5.Click on the file name to view its preview.



6.Your page should like this:

## Solar System



The solar system consists of the sun and everything that orbits the sun. This includes the eight planets and their moons, the dwarf planets, asteroids, comets and other small objects.

All the planets and dwarf planets, the rocky asteroids, and the icy bodies in the Kuiper belt move around the Sun in elliptical orbits in the same direction that the Sun rotates. This motion is ter or direct, motion.

### Planets in the solar system:

No.	Planet Name	Distance from Sun (in million km)
1	Mercury	57.91
2	Venus	108.2
3	Earth	149.6
4	Mars	227.9
5	Jupiter	778.5
6	Saturn	1434
7	Uranus	2873
8	Neptune	4495

## 2. Specify a font family and font size for text

CSS helps define style, layout, colors, and fonts for your pages. In this exercise, you will set the font family. We’ll also use CSS to change the font characteristics for some elements.

We’ll use the **font-family** and **font-size** properties to change the appearance of the heading.

**Note:** In this lab, you will apply styles using **inline CSS format**. You will add the **style** attribute to the element to change the style.

### Change the heading font

Modify the <h1> tag so that it looks like this:

```
<h1 style="font-family: Cursive">Solar System</h1>
```

Here, *Cursive* is a generic font family. You could also specify a font family such as *Arial* or a group of font family names separated by a comma, such as `font-family: Arial, serif`.

When you have updated the tag, save the file and reload your web page. It should now look like this, assuming you have specified the *Arial, serif* font family:

# Solar System



The solar system consists of the sun and everything that orbits the sun. This includes the eight planets and their moons, the dwarf planets. All the planets and dwarf planets, the rocky asteroids, and the icy bodies in the Kuiper belt move around the Sun in elliptical orbits in the

**Planets in the solar system:**

No.	Planet Name	Distance from Sun (in million km)
1	Mercury	57.91 m km
2	Venus	108.2 m km
3	Earth	149.6 m km
4	Mars	227.9 m km
5	Jupiter	778.5 m km
6	Saturn	1.434 b km
7	Uranus	2.871 b km
8	Neptune	4.495 billion km

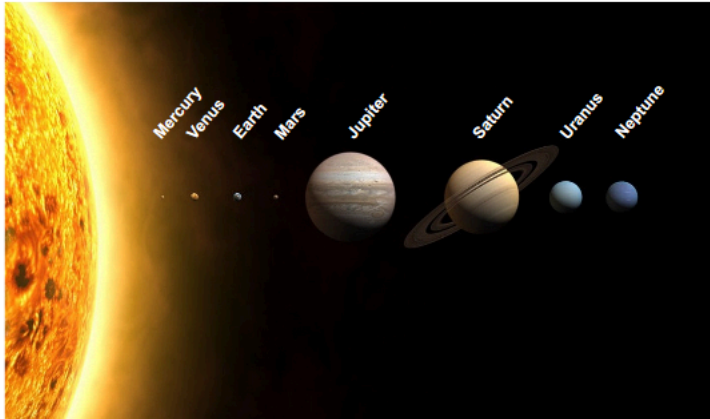
## Change the font size

Add the **font-size** property to the <h1> style so that your code looks like this:

```
<h1 style="font-family: Cursive; font-size: 70px"> Solar System </h1>
```

When you have made the change, save your file. Your page should now look like this:

# Solar System



The solar system consists of the sun and everything that orbits the sun. This includes the eight planets and their moons, the dwarf planets, All the planets and dwarf planets, the rocky asteroids, and the icy bodies in the Kuiper belt move around the Sun in elliptical orbits in the

Planets in the solar system:

No.	Planet Name	Distance from Sun (in million km)
1	Mercury	57.91 m km
2	Venus	108.2 m km
3	Earth	149.6 m km
4	Mars	227.9 m km
5	Jupiter	778.5 m km
6	Saturn	1.434 b km
7	Uranus	2 871 b km

### 3. Change the color of an element

You will now set the background color of the page and update the color of an HTML element. To change the background color, you use the CSS **background-color** property. To change an element’s color, you use the **color** property.

**Change the background color**

To change the background color of the body of the web page, update the <body> tag as in the following code:

```
<body style="background-color:wheat">
```

**Change the font color**

You specify a color for an element using a predefined color name, or by using RGB, HEX, HSL, RGBA, or HSLA values.

The RGB system enables you to specify a color as a combination of the primary colors red, green, and blue. RGB colors range from *rgb(0,0,0)*, which is black, to *rgb(255,255,255)* which is white.

Change the color of your heading using the RGB system, as follows:

```
<h1 style="font-family: Cursive; font-size:70px; color:rgb(139,0,0)">Solar System</h1>
```

When you have updated the code, save the file. The web page should now look like this:

# Solar System



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## Planets in the solar system:

No.	Planet Name	Distance from Sun (in million km)
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## 4. Create borders

Tables created in HTML do not display a border by default. Using CSS, we can apply borders to tables, <div> elements, and other tags.

### Add a table border

We'll add a border to the table in your web page. The border will be solid, black, and two pixels wide.

Update the <table> tag with the following CSS code:

```
<table style="border: 2px solid black">
```

When you have made the changes, save the file. The table in the page should now look like this:

<u>Planets in the solar system:</u>		
No.	Planet Name	Distance from Sun (in million km)
1	Mercury	57.91 m km
2	Venus	108.2 m km
3	Earth	149.6 m km
4	Mars	227.9 m km
5	Jupiter	778.5 m km
6	Saturn	1.434 b km
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Add a border to table headings and table cells


CSS gives you the flexibility to add a style to multiple instances of the same HTML tag. For example, instead of specifying the style for each individual <th> and <td> tag, we can add a style to all of those tags using **internal CSS**. We'll add a <style> tag within the <head> section of our page to specify how we want all <th> and <td> tags to display.

To apply an internal CSS style to your page, replace the <head> section with the code below:

```
<head>
  <title>Solar System</title>
  <style>
    table,th,td {
      border: 2px solid black;
    }
  </style>
</head>
```

When you have made the changes, save the file. The page should now look like this:

# Solar System




The solar system consists of the sun and everything that orbits the sun. This includes the eight planets and their moons, the dwarf planets, asteroids, comets, and meteoroids.

All the planets and dwarf planets, the rocky asteroids, and the icy bodies in the Kuiper belt move around the Sun in elliptical orbits in the same direction.

**Planets in the solar system:**

No.	Planet Name	Distance from Sun (in million km)
1	Mercury	57.91 m km
2	Venus	108.2 m km
3	Earth	149.6 m km
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Highlight the table header

Finally, let's make the table header stand out by specifying a background color for the entire table row. By adding the style to the row, you do not need to update each individual <th> tag within the row.

Add a style to the first <tr> tag in the table (the header row), as follows:

```
<tr style="background-color:yellow">
  <th>No. </th>
  <th>Planet Name </th>
  <th>Distance from Sun </th>
</tr>
```

When you have made the changes, save the file. The page should now look like this:



# Solar System



The solar system consists of the sun and everything that orbits the sun. This includes the eight planets and their moons, the dwarf planets, asteroids, comets, and meteoroids. All the planets and dwarf planets, the rocky asteroids, and the icy bodies in the Kuiper belt move around the Sun in elliptical orbits in the same direction.

**Planets in the solar system:**

No.	Planet Name	Distance from Sun
1	Mercury	57.91 m km
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5	Jupiter	778.5 m km
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## Practice Exercise: Add CSS Styling to an HTML page through links

You should have completed [this](#) lab on using HTML5 strcutural elements for untis conversion. If not, you can do it now.

In this lab, you will add CSS styling to improve its UI.

1. Click on the button below to open `index.html`. If you don't have the file in the lab environment, you will get a prompt asking if you want to create a new one. You can choose to do that and paste the following code in it and save the file.

Open `index.html` in IDE

▼ Click to see the content of `index.html`

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Document</title>
  </head>
  <body>
    <section id="home">
      <header>
        Unit Conversions
      </header>
      <nav>
        <div>
          <a href="#temperature"><button>Temperature</button></a>
          <a href="#weight"><button>Weight</button></a>
          <a href="#distance"><button>Distance</button></a>
        </div>
      </nav>
    </section>
    <div id="all-conversion-sections">
      <section id="temperature">
        <div id="tmp">
          <figure>
            Celsius</label> <br/>
            <input type="number" id="c"> <br/>
            <button id="temperature"> Convert </button> <br/>
            <input type="number" id="f"> <br/>
            <label for="Temperature">Fahrenheit</label>
          </fieldset>
          <aside>
            To convert celsuis to fahrenheit yourself, use this formula replacing the `C` with your temperature in celsuis: (C × 9/5) + 32
          </aside>
        </article>
      </div>
    </section>

    <section id="weight">
      <div id="wgt">
        <figure>
          KG</label> <br/>
```

```
<input type="number"> <br/>
    <button id="weight"> Convert </button> <br/>

    <input type="number"> <br/>
<label for="Weight">Pounds</label>
</fieldset>
<aside>
    To convert kilograms to pounds yourself, use this formula replacing the `kg` with your weight in kilograms: kg x 2.205
</aside>
</article>
</div>
</section>
<section id="distance">
<div id="dst">
    <figure>
        KM</label> <br/>
<input type="number"> <br/>
            <button id="distance"> Convert </button> <br/>
            <input type="number"> <br/>
<label for="Distance">Miles</label>
        </fieldset>
        <aside>
            To convert kilometers to miles yourself, use this formula replacing the `km` with your distance in kilometers: km &divide; 1.609
        </aside>

    </article>
</div>
</section>
</div>
<div id="go-home">
    <a href="#home">
        
</head>
```

• Now that you have linked the style sheet, you can start applying the styles to the html page.

4. Set the margin of all the elements to **10px** on all sides and the background-color to **black**.

5. Style the Home section (having the app name & the nav bar) to have:

- A margin of **-1** to the top.left & right.
- Bottom padding of 1 or 2 cm
- Background color to be a lighter shade of **blue magenta**

6. Style the Header section as follows:

- Font-size as 30 pixels
- Colour to be light purple
- Floating to the left
- Padding of 2 cms to the left

7. The Navigation Bar Container as:

- Floating to the right
- Padding of 1 cm to the right

8. The Navigation Bar Buttons can have static styling as :

- A light gray color
- Background color as dark purple.
- Margin & padding of 10 pixels each. A border radius of 1mm.
- Font size as 20 pixels
- Optional text decoration

9. The Navigation Bar Buttons can have the below on-hover style:

- Color as white
- Bolder font weight
- Background colour as purple
- Optional text decoration

▼ Click to see the content of style.css

```
/* sets the margin of all the element to 10px on all sides and the background-color to black */
body{
    margin: 10px;
    background-color: black;
}
/* Home section  which has the app name and nav bar. The styling is applied by id */
#home {
    background-color: #483355;
    padding-bottom: 1cm;
    margin-left:-1cm;
    margin-right:-1cm;
    margin-top:-1cm;
    padding-top: 2cm;
    padding-bottom: 2cm;
}
/* Application name inside the home section. The styling is applied by tag name */
header {
    font-size: 30px;
    color: rgb(240, 234, 245);
    float: left;
    padding-left: 2cm;
}
/* Navigation Bar Container*/
.topdiv {
    float: right;
    padding-right: 1cm;
}

/* Navigation Bar Buttons */
.topmenu {
    color: lightgray;
    background-color: #483355;
    margin: 10px;
    padding: 10px;
    font-size: 20px;
    text-decoration:none;
    border-radius: 1mm;
}

.topmenu:hover {
    color: white;
    font-weight: bolder;
    background-color: #382742;
    text-decoration: underline;
}
```

10. The 3 conversion sections of the calculator will now be styled:

- a. All the sections should have the below styling:
- Items are aligned vertically and positioned at the center.
  - Grid-based layout
- b. The figure tag can be styled as follows:
- Float to the left
  - Alignment (justification) can be automatic
  - Width as 200 pixels
- c. The image tag can have a width of 200 pixels.
- d. The figcaption tag should:
- Have a black color
  - Font size as 17 pixels
  - Text aligned to the centre
- e. The conversion buttons can have static styling as:
- Font size of 20px
  - A transparent border with border-radius as 40px and the content fitting the page width
  - Background-color as light green
  - Left and right padding as 15px each
- f. The conversion button should have on-hover styling of changing the mouse appearance from an arrow to a **pointer**

▼ Click to see the content of style.css

```
/* Container for all the three conversion calculator sections */
#all-conversion-sections{
    display: grid;
    justify-content: center;
}
figure {
    float:left;
    justify-self: auto;
    width:200px
}
img {
    width: 200px;
}
figcaption {
    color:black;
    font-size: 17px;
    text-align: center;
}
button{
    font-size: 20px;
    border: transparent;
    width: fit-content;
    background-color: rgb(173, 218, 173);
    border-radius: 40px;
    padding-right: 15px;
    padding-left: 15px;
}
button:hover {
    cursor: pointer;
}
```

11. The calculator panel will now be styled:

- a. The elements in bold b class will have:
- Border top style as solid & border top width as 20px, border radius as 10px
  - Background-color as white, Width as 600px, height as 400px
  - Top and bottom margins as 25 pixels
  - Flexible box display
- b. The temperature class can have the top border color as **green**.
- c. The weight class can have top border colour as **coral**.
- d. The distance class can have top border colour as **cyan**.
- e. The legend tag can have font-size as 30px with a **bolder** font-weight.
- f. The panel can have an overall left margin of 50px.

▼ Click to see the content of style.css

```
/* The calculator panel */
.b{
  border-top-style: solid;
  background-color: white;
  border-top-width: 20px;
  width: 600px;
  height: 400px;
  border-radius: 10px;
  margin-bottom: 25px;
  margin-top: 25px;
  display: flex;
}
.temperature{
  border-top-color: green;
}
.weight{
  border-top-color: coral;
}
.distance{
  border-top-color: cyan;
}
legend {
  font-size: 30px;
  font-weight: bolder;
}
```

12. The floating home button will now be styled.

- a. The button icon can:
- Have width and height as 40px each
  - Items aligned and justified to the center
  - Border radius as 100% and background colour as **cyan**
  - Flexible box display
  - The icon should be fixed and not move with scrolling. It can be at the extreme left and 40 pixels from the bottom of the page
- b. The image for the icon button can have a width of 30 px.

13. The footer tag can have:

- The background colour as **light pink** & top margin as 20px.

14. Save the changes made so far.

▼ Click to see the completed code for style.css

```
/* sets the margin of all the element to 10px on all sides and the background-color to black */
body{
  margin: 10px;
  background-color: black;
}
/* Home section which has the app name and nav bar. The styling is applied by id */
#home {
  background-color: #483355;
  padding-bottom: 1cm;
  margin-left:-1cm;
  margin-right:-1cm;
  margin-top:-1cm;
  padding-top: 2cm;
  padding-bottom: 2cm;
}
/* Application name inside the home section. The styling is applied by tag name */
header {
  font-size: 30px;
  color: rgb(240, 234, 245);
  float: left;
  padding-left: 2cm;
}
/* Navigation Bar Container*/
.topdiv {
  float: right;
  padding-right: 1cm;
}

/* Navigation Bar Buttons */
.topmenu {
  color: lightgray;
  background-color: #483355;
  margin: 10px;
  padding: 10px;
```

```
font-size: 20px;
text-decoration:none;
border-radius: 1mm;
}

.topmenu:hover {
color: white;
font-weight: bolder;
background-color: #382742;
text-decoration: underline;
}

/* Container for all the three conversion calculator sections */
#all-conversion-sections{
display: grid;
justify-content: center;
}
figure {
float:left;
justify-self: auto;
width:200px
}
img {
width: 200px;
}
figcaption {
color:black;
font-size: 17px;
text-align: center;
}
button{
font-size: 20px;
border: transparent;
width: fit-content;
background-color: rgb(173, 218, 173);
border-radius: 40px;
padding-right: 15px;
padding-left: 15px;
}
button:hover {
cursor: pointer;
}
/* The calculator panel */
.b{
border-top-style: solid;
background-color: white;
border-top-width: 20px;
width: 600px;
height: 400px;
border-radius: 10px;
margin-bottom: 25px;
margin-top: 25px;
display: flex;
}
.temperature{
border-top-color: green;
}
.weight{
border-top-color: coral;
}
.distance{
border-top-color: cyan;
}
legend {
font-size: 30px;
font-weight: bolder;
}
/* Floating icon for the home button */
.iconbutton{
width:40px;
height:40px;
border-radius: 100%;
background-color: rgb(225, 235, 235);
display: flex;
align-items: center;
justify-content: center;
position: fixed;
bottom:40px;
left:0;
}
.iconbutton img {
width:30px
}

footer {
background-color:rgb(240, 234, 245);
margin-top: 20px;
}
```

15. Set the values in index.html as below:

- a. Set the value of the class attribute of the div inside inside the nav tag to **topdiv**.
- b. Set the value of the class attribute of the buttons inside the nav bar to **topmenu**.
- c. Set the value of the class attribute of the section with id temperatue to **b temperature**. You are setting one generic style b and a specific style temperature.
- d. Set the value of the class attribute of the section with id weight to **b weight**. You are setting one generic style b and a specific style weight.
- e. Set the value of the class attribute of the section with id distance to **b distance**. You are setting one generic style b and a specific style distance.
- f. Set the value of the class attribute of the div with id go-home to **iconbutton**.

16. Once you have added all the styling to the index.html, save your changes.

▼ Click here to see the completed code for index.html

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Document</title>
    <link rel="stylesheet" href="style.css">
  </head>
  <body>
```

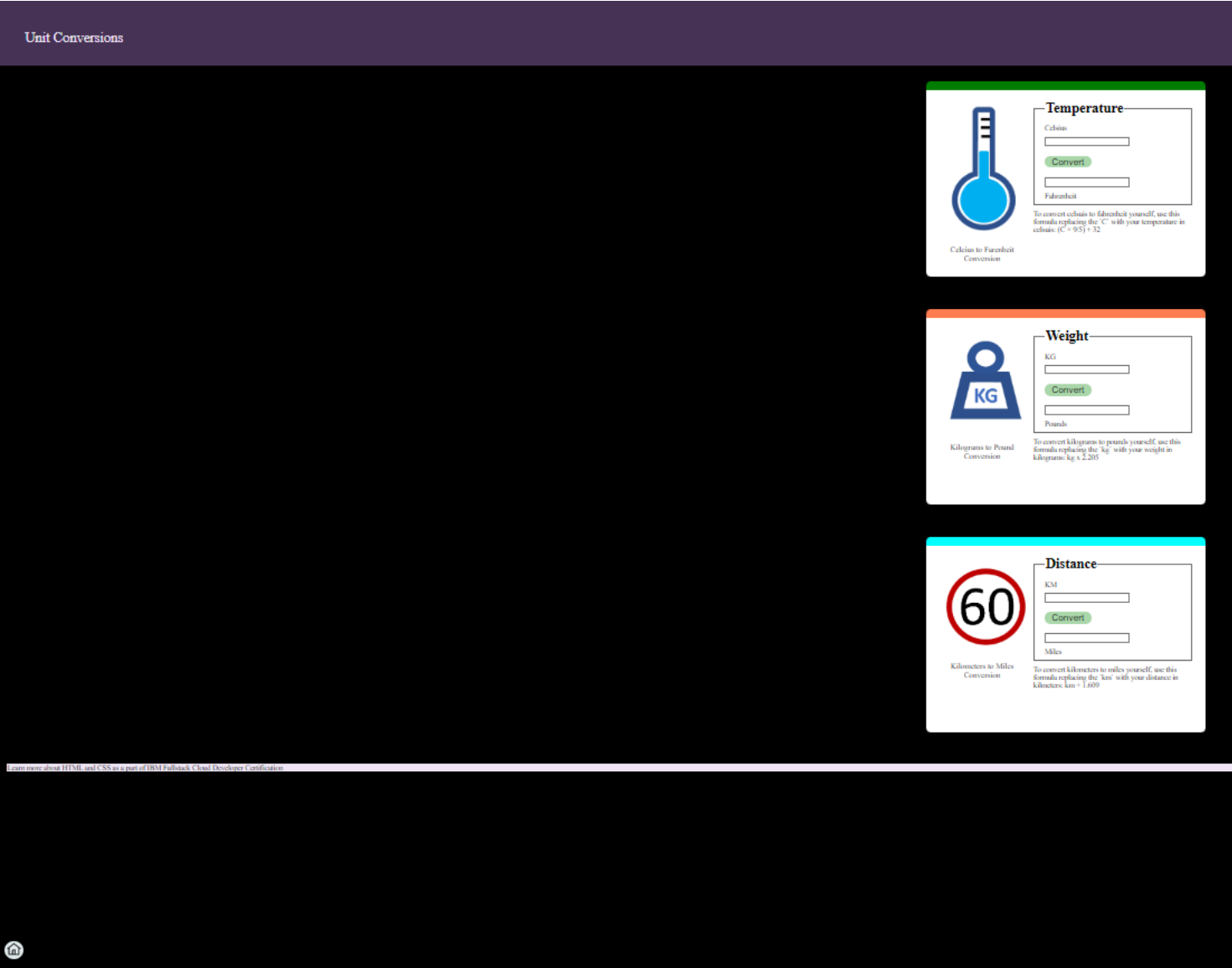
```
<section id="home">
  <header>
    Unit Conversions
  </header>
  <nav>
    <div class="topdiv">
      <a href="#temperature"><button class="topmenu">Temperature</button></a>
      <a href="#weight"><button class="topmenu">Weight</button></a>
      <a href="#distance"><button class="topmenu">Distance</button></a>
    </div>
  </nav>
</section>
<div style="clear:both;"></div>

<div id="all-conversion-sections">
  <section id="temperature" class="b temperature">
    <div id="tmp">
      <figure>
        Celsius</label> <br/>
          <input type="number" id="c"> <br/>
          <button id="temperature"> Convert </button> <br/>
          <input type="number" id="f"> <br/>
          <label for="Temperature">Fahrenheit</label>
        </fieldset>
        <aside>
          To convert celsuis to fahrenheit yourself, use this formula replacing the `C` with your temperature in celsuis: (C × 9/5) + 32
        </aside>
      </article>
    </div>
  </section>
  <div style="clear:both;"></div>

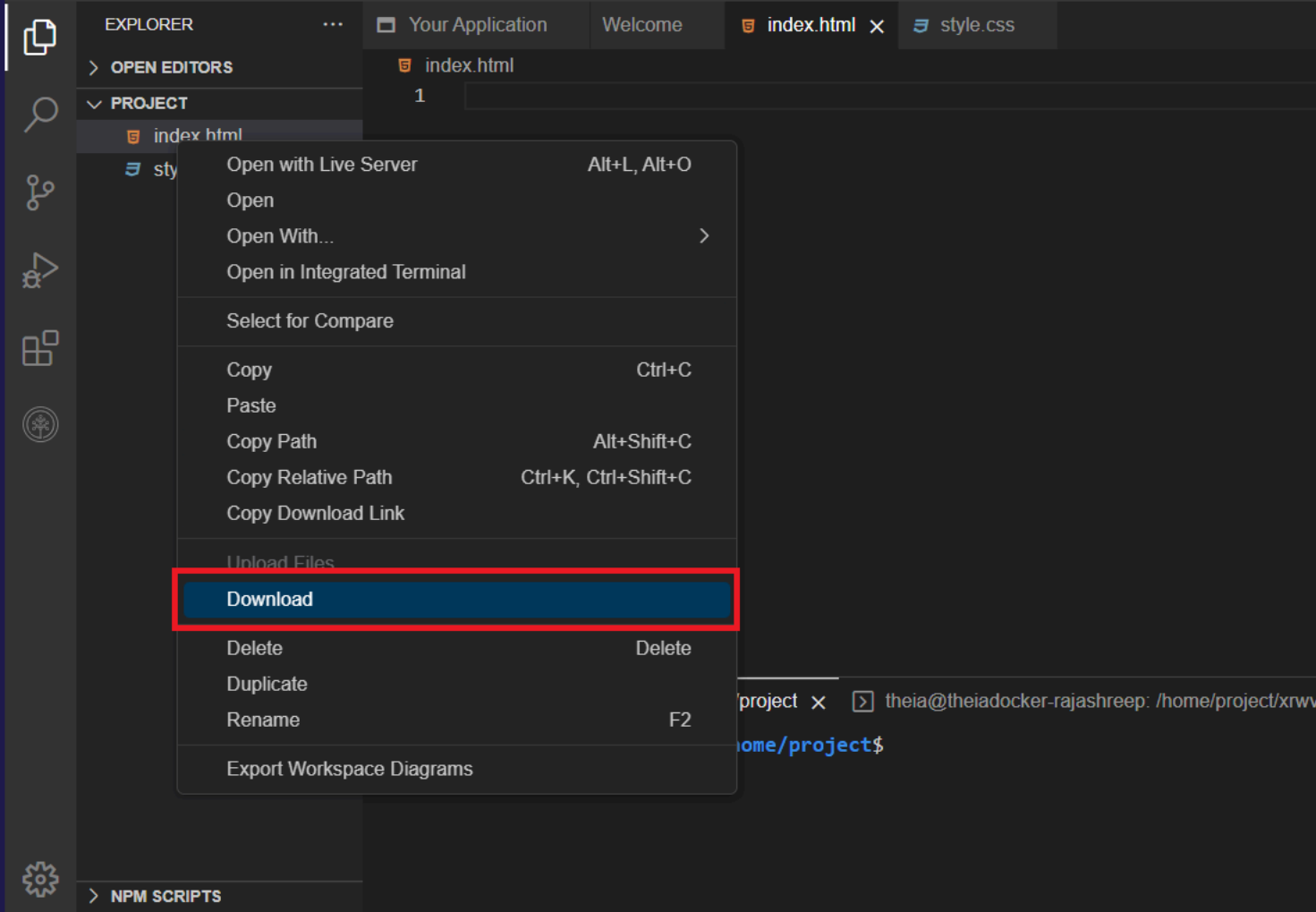
  <section id="weight" class="b weight">
    <div id="wgt">
      <figure>
        KG</label> <br/>
          <input type="number"> <br/>
          <button id="weight"> Convert </button> <br/>

          <input type="number"> <br/>
          <label for="Weight">Pounds</label>
        </fieldset>
        <aside>
          To convert kilograms to pounds yourself, use this formula replacing the `kg` with your weight in kilograms: kg x 2.205
        </aside>
      </article>
    </div>
  </section>
  <div style="clear:both;"></div>
  <section id="distance" class="b distance">
    <div id="dst">
      <figure>
        KM</label> <br/>
          <input type="number"> <br/>
          <button id="distance"> Convert </button> <br/>
          <input type="number"> <br/>
          <label for="Distance">Miles</label>
        </fieldset>
        <aside>
          To convert kilometers to miles yourself, use this formula replacing the `km` with your distance in kilometers: km &divide; 1.609
        </aside>
      </article>
    </div>
  </section>
  <div style="clear:both;"></div>
  <div id="go-home" class="iconbutton">
    <a href="#home">
      <img src="https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-CD0101EN-SkillsNetwork/labs/Theia%20La
    </a>
  </div>
  <footer>Learn more about HTML and CSS as a part of IBM Fullstack Cloud Developer Certification</footer>
</body>
</html>
```

17. Save index.html file and then view it with Live Server. The page would render as given below.



Note: You will be using the same index.html and style.css in the upcoming week's hands-on lab: Validating a JavaScript form. Therefore, please ensure to download both files by right-clicking and selecting the download option as highlighted in the below screenshot.



## Summary

Congratulations!!! You have now learned how to update the styles for a web page using both inline and internal CSS. You have also done a Practice exercise wherein you have applied CSS styling to the Hands-on Lab: Unit Conversion using HTML5 Structural Elements and beautified it.

Don't stop there – we encourage you to create a web page lab about your country and try applying and updating styles using CSS.

## Tutorial details

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