TOPIC 3: HTML AND CSS

3.1   Objectives

Up to this point you have learned HTML such as several tags, attributes and you already manage your code by using Git and store it to GitHub. In this topic you will learn:

1) Selector
2) Property and value
3) class and id of HTML tag
4) CSS code block
5) CSS file
6) CSS as attribute in HTML tag

3.2   Introduction to CSS

CSS is stand for Cascade Style Sheet. It describes how HTML elements are to be displayed on screen, paper, or in other media. CSS is very useful; it can control the layout of multiple web pages all at once. For more detail, how the CSS works and why to use it, let's working on an example for a web page as follow:

```html
<html>
<head>
    <title>The CSS</title>
</head>
<body>
    <h1>The Story</h1>

    <p>HTML is stand for HyperText Markup Language. It is a
language use to describe the structure of web pages. The language
is very easy to learn yet it is very important. Its foundation
for any web page.</p>
    <p>CSS on other hand is a language that describe the
appearance of HTML tag. In CSS you could setting the appearance
of HTML tag on the screen in a way that satisfy with your needs.
It's done by assigning correct value to the property of CSS for
HTML tag. </p>
    <p>JavaScript is different from HTML and CSS. It's a
programming language. It's very useful to manage your web page
appearance programmatically. Currently, this programming language
is very important and become the top programming language in the
world.</p>
```

```
</body>
</html>
```

Create a folder called "**html-css**" and save above code into that folder with name **practice-1.html**. The code above has three paragraphs. When you open it in a web browser, it will display as follow:
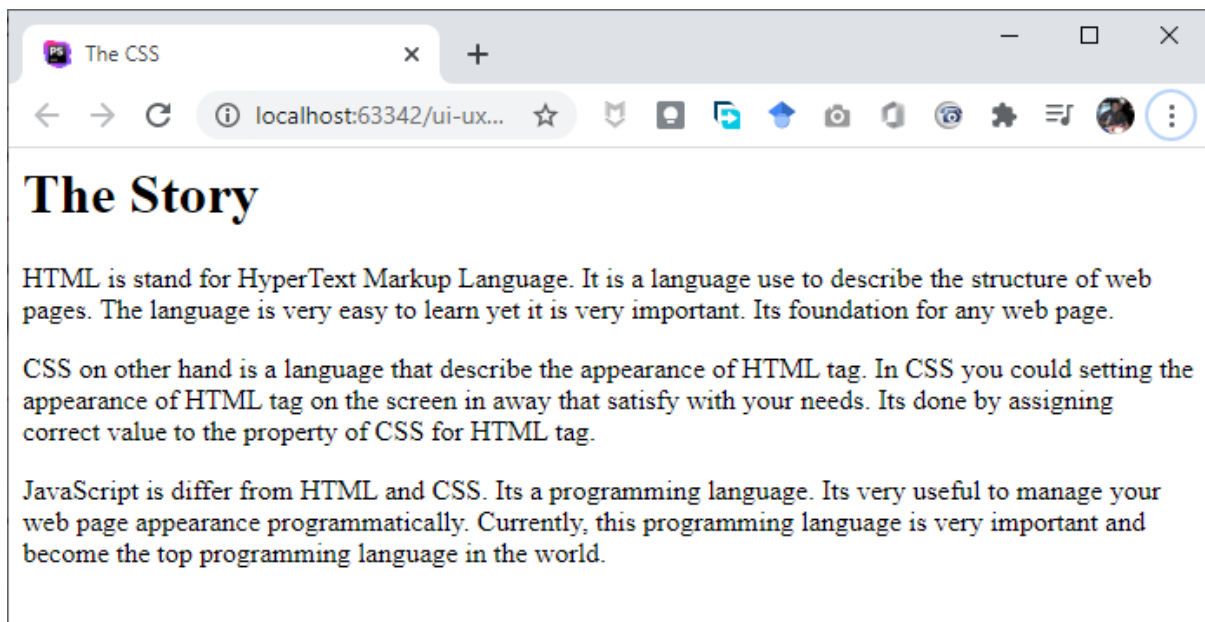

Figure 3.1 Appearance for practice-1.html

In this example, we focus on the paragraph. The text alignment of those paragraphs is not set, so the default alignment is left, right! How if you want the alignment of the paragraph to be another value for example justify? As you have learned previous topic, you can use attribute **align** for each paragraph and you correct. You can do it right now :D. Using attribute align to configure alignment of paragraph is easy, you can do it one by one by yourself, especially if we are working on single small web page. However, how if the web page has tens paragraph and it will continuous increase, it become troublesome, isn't? We may accidently forget to add the attribute, or there are typos make the web page appearance become not consistent. Here the CSS will help your life with it *magic* :D.

To solve this issue using CSS, we just need to employ following code into our web page.

```css
p {
    text-align: justify;
}
```

Just it? Yes, just it. So, where should we put it? There are two ways to put that CSS: (1) put it directly to HTML, and (2) make separate CSS file and call it in HTML page. Right now, we will put it directly into our HTML and place it inside the <head> tag by using <style> tag as follows:

```html
<html>
<head>
    <title>The CSS</title>
    <style>
        p {
            text-align: justify;
        }
    </style>
</head>
<body>
    <h1>The Story</h1>

    <p>HTML is stand for HyperText Markup Language. It is a language
 use to describe the structure of web pages. The language is very ea
sy to learn yet it is very important. Its foundation for any web pag
e.</p>
    <p>CSS on other hand is a language that describe the appearance
of HTML tag. In CSS you could setting the appearance of HTML tag on
the screen in a way that satisfy with your needs. It's done by assig
ning correct value to the property of CSS for HTML tag. </p>
    <p>JavaScript is differ from HTML and CSS. Its a programming lan
guage. It's very useful to manage your web page appearance programma
tically. Currently, this programming language is very important and
become the top programming language in the world.</p>
</body>
</html>
```

Now, open that file in your browser or refresh it if you have open it, and you will see something like following screenshot. All the paragraph' alignment became justify right now.
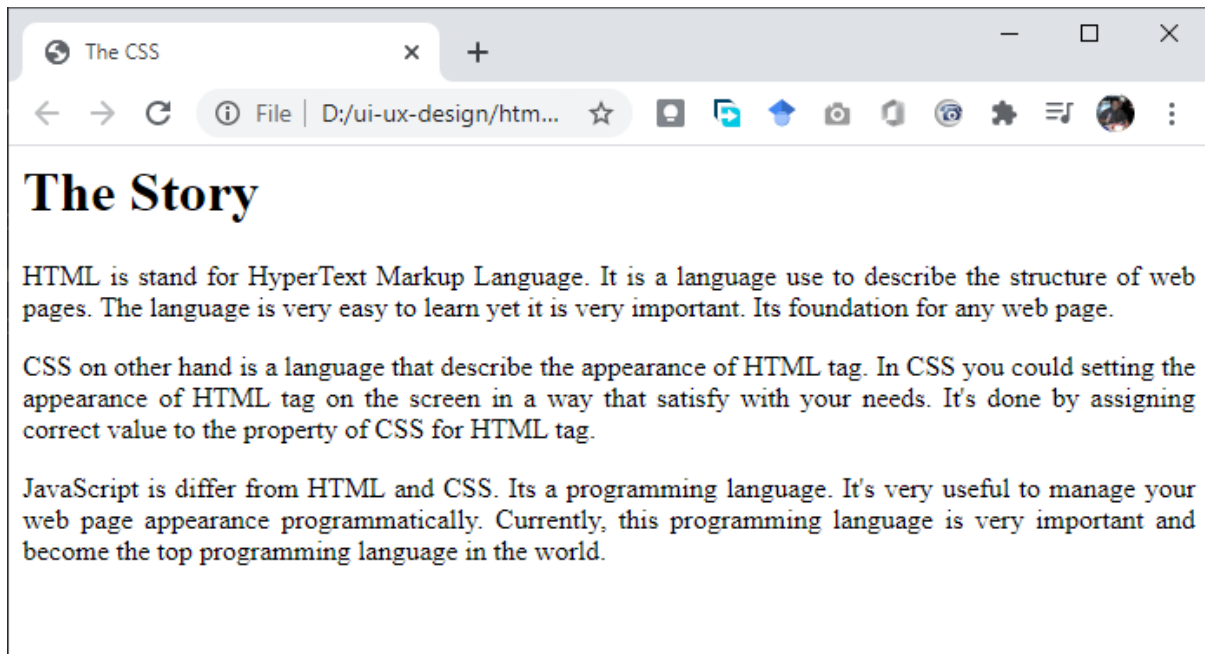
Figure 3.2 Web page with CSS

With the same approach, we also can apply it with the heading (<h1>). I think it is best to set the alignment of that heading to be center. So we can change the CSS as follow:

```
<style>
    p {
        text-align: justify;
    }

    h1 {
        text-align: center;
    }
</style>
```

After you changed the code, you will something like following when you refresh your web browser:

Figure 3.3 CSS for Heading

It's prettier than the original one, right? **Try to add more paragraph and see what happned!**

3.3 Property, Value and Selector

Before we continue our journey, let's discuss what we've done. In the last lesson, we learned very basic CSS yet very fundamental:

1) We created a web page with one (1) heading <h1> and three (3) paragraph (<p>)
2) We select all paragraphs (<p>) and we set the alignment to be justify using CSS
3) We select the heading <h1> and set the alignment to be center using CSS.
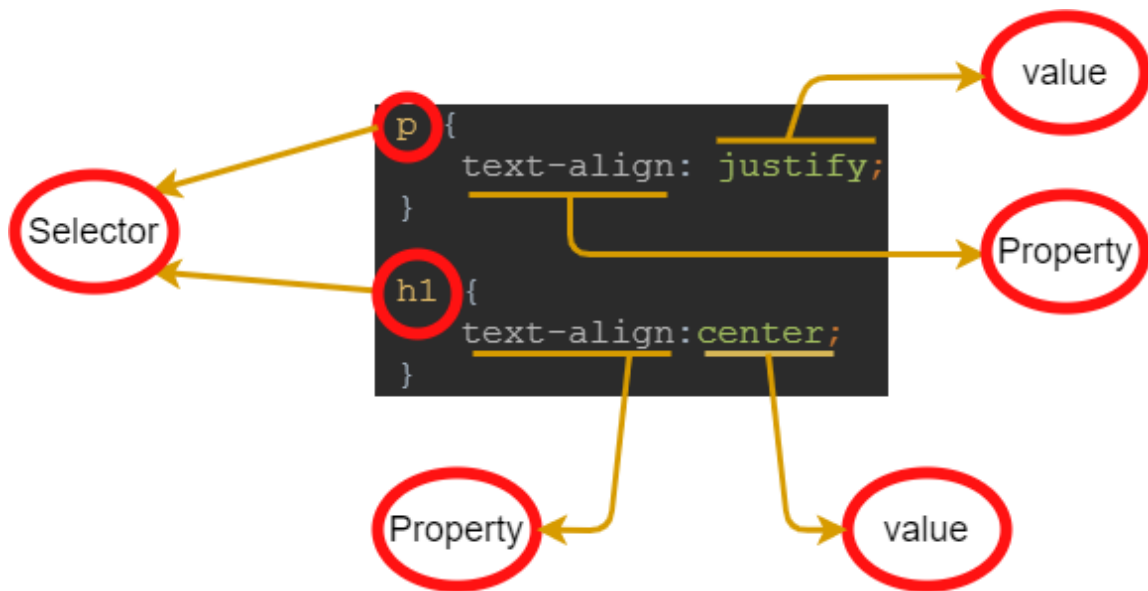
Let's talk about the CSS. The CSS we've as follows:

Figure 3.4 Example for CSS Styling

In CSS we have three terms:

1) **Selector**. Selector is can be a HTML tag or HTML tags that we want to change. It can be any HTML tags, such as p for paragraph <p>, h1 for heading 1 <h1> and so on. It can be a class/classes and/or id of CSS (Will be discuss in the next section).

2) **Property**. Property or sometimes called attribute is a property that belongs to HTML tag and we want to change its value. There are lot of properties belongs to a single tag, text-align is one of them. Other properties describe in **Appendix 1.**

3) **Value**. The value(s) is a value that we assigned to a property. It can be integer, float, or string depend on the property. For example, property text-align could have a value like justify, or center, or right or left; property font-size could have any integer value follow with the unit such as 12pt, 13pt and so on.

Easy, isn't? (1) You just need what HTML tag you want to change, (2) choose the property (s) that you want to change, (3) assigned the new value for each property. So simple. The general format for defining the style of any HTML tags is as follow:

```
selector {
    property: value(s);
}
```

Figure 3.5 Format for declaring CSS

You can replace "**selector**" with any HTML tags, you can replace "**property**" with any property and assigned "**value**" to it. Even you can change many properties. For example, you want to change size and color the paragraph you can change the CSS like this:

```
<style>
    p {
        text-align: justify;
        font-size: 18pt;
        color: blue;
    }

    h1 {
        text-align: center;
    }
</style>
```
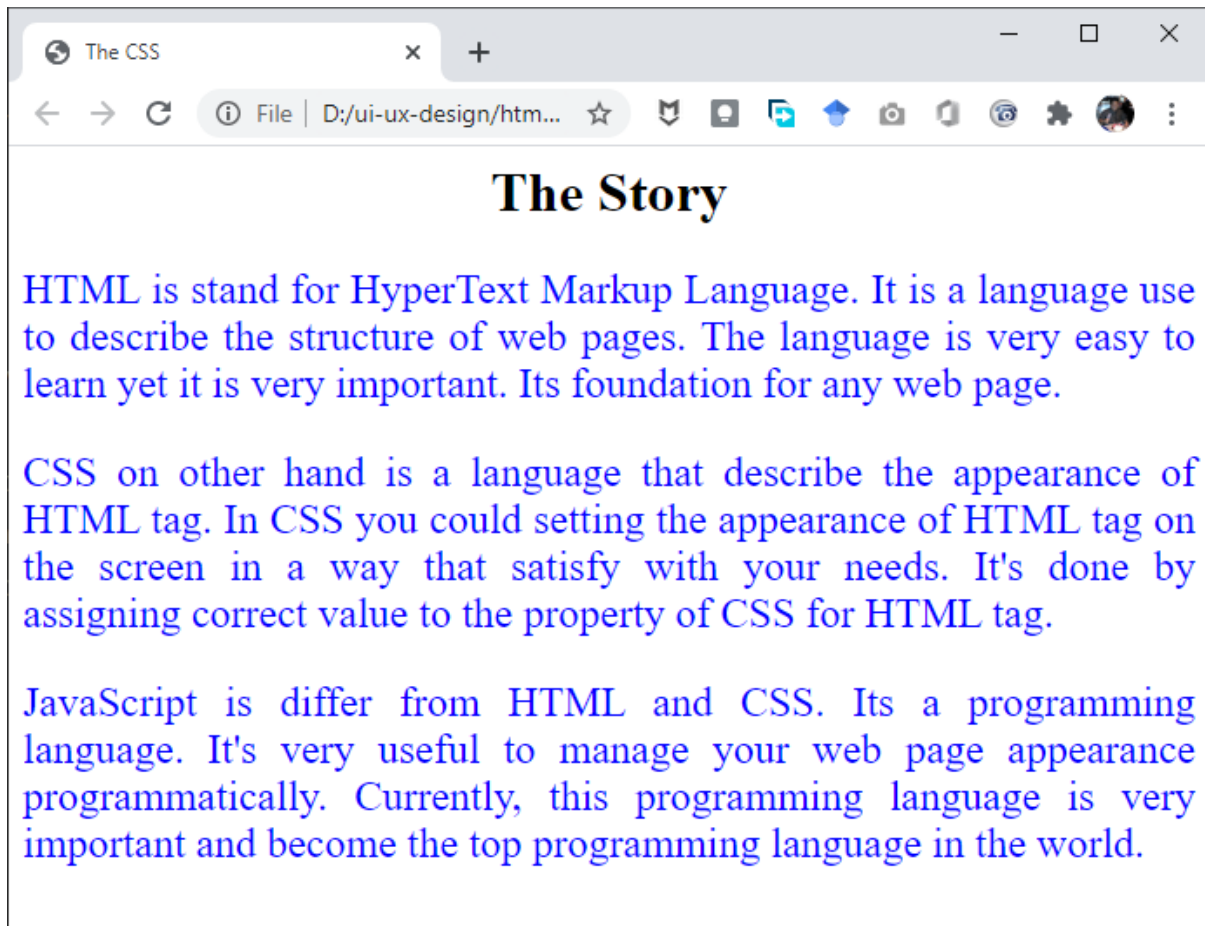
Open it in your browser or refresh if you've open it.

Figure 3.6 Web page appearance after adding more CSS

Cool isn't? **Try to change the font family of heading 1 <h1> and change the color as well!**

3.4   The selector: Class and Id

Last section has discussed the selector. It can be any HTML tag, right? There are two other selector called *class* and *id*. Why we need them? In last example, we created three paragraphs, and in we define the style for tag <p>, so all paragraphs have the same appearance. And when you add some paragraphs, they have same appearance with other three. The conclusion is all paragraphs in our web page has same appearance.

3.4.1   CSS Class

        Imagine you write a story in a web page with numerous paragraphs and what you want to do is to highlight the first and the last paragraph since it contains the introduction and the conclusion of your story. You want to make them different style compares to the rest of the paragraphs. However, you've defined the style of the paragraph as follow:

```
<style>
    p {
        text-align: justify;
        font-size: 18pt;
        color: blue;
    }

    h1 {
        text-align: center;
    }
</style>
```

Defining the CSS Class

The question is how to make the paragraph have different style? In our case, how to make to create three styles for different paragraphs? The answer is by using or defining CSS classes. How to make it? To make selector using class is easy. We just need to follow the format that we've learned earlier. If HTML tag as a selector for example <p>, you write like above code, right. However, if you want to define a class in CSS, you just write **dot (.)** and **follow by the name of the class** as following format:

```
.CLASS-NAME {
    property: value(s);
}
```

Figure 3.7 Detail format for declaring CSS class

The name of the class can be alphabet without space, and you can combine it with number, hyphen (-) or underscore (_). The example of name of the class are "intro-paragraph", "image-1", "responsive-img", and so on. For example, we define two classes and add it to our style as follow:

```
.intro-paragraph{
    font-weight: bold; /* turn the weight of the text to bold*/
    color: black; /* turn the color of the text to black*/
}
```

```css
.last-paragraph{
    font-style: italic; /* turn the style of the text to italic*/
    color: black; /* turn the color of the text to black*/
}
```

If you open your browser or refresh it, nothing happens. Why? Unlike when you defined style using HTML tag as selector, when you define style inside the CSS class it not automatically changes the appearance of your web page. You must specifically declare the class in HTML tags.

Using CSS class

At this point we've created two classes and we plan to use those classes to change the style of our first and last paragraphs. To use the classes in HTML tag is by defined it by using attribute called *class*. Pay attention to following code:

```html
<html>
<head>
    <title>The CSS</title>
    <style>
        p {
            text-align: justify;
            font-size: 18pt;
            color: blue;
        }

        .intro-paragraph{
            font-weight: bold;
            color: black;
        }

        .last-paragraph{
            font-style:italic;
            color:black;
        }

        h1 {
            text-align:center;
        }
    </style>
</head>
<body>
    <h1>The Story</h1>

    <p class="intro-paragraph">HTML is stand for HyperText Markup
Language. It is a language use to describe the structure of web
pages. The language is very easy to learn yet it is very
important. Its foundation for any web page.</p>
    <p>CSS on other hand is a language that describe the
```

```
appearance of HTML tag. In CSS you could setting the appearance
of HTML tag on the screen in a way that satisfy with your needs.
It's done by assigning correct value to the property of CSS for
HTML tag. </p>
    <p class="last-paragraph">JavaScript is differ from HTML and
CSS. Its a programming language. It's very useful to manage your
web page appearance programmatically. Currently, this programming
language is very important and become the top programming
language in the world.</p>
</body>
</html>
```

And if you open your browser or refresh it you will see like following screenshot:
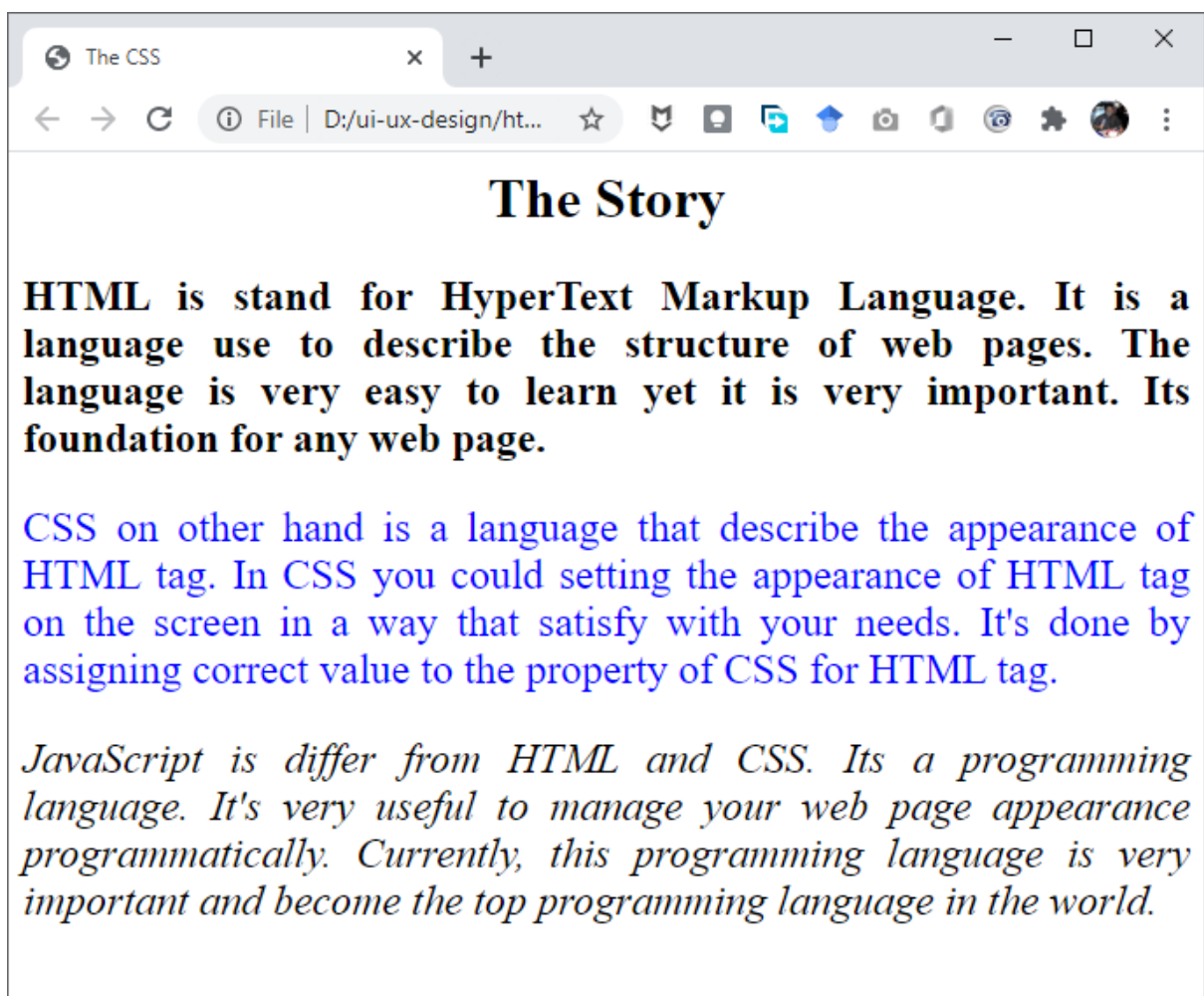

Figure 3.8 Appearance for paragraph with different style

Almost HTML tags have attribute called class, so when you define a class, you can assign that class to HTML tag by employing attribute class. Pay attention for following format:

```
<HTML-TAG class="class-1 class-2 class-n">
    ...
    ...
</HTML-TAG>
```

If see that format, you see the class for HTML tag could be more than one. Yes, it's true. You could assign multiple class to a HTML tag. Why we want to do that? And what happen if we assigned multiple classes to the HTML tag?

It is common way to assigned multiple classes to the HTML tags, and you will find the applications in the next topics, and especially when you are working on CSS Framework such as bootstrap and foundation. When you assigned multiple classes to a HTML tags, the style for the HTML tags will be combination of all the classes. For example, in previous lesson we've created class called "**intro-paragraph**" and "**last-paragraph**" and we applied it to the first and last paragraph for **practice-1.html** and the result like Figure 3.8. If we assign multiple classes into a HTML tag like following code, we will see the combination of style for all the classes (last-paragraph and intro-paragraph) as describe in Figure 3.9.

```
<html>
<head>
    <title>The CSS</title>
    <style>
        p {
            text-align: justify;
            font-size: 18pt;
            color: blue;
        }

        .intro-paragraph{
            font-weight: bold;
            color: black;
        }

        .last-paragraph{
            font-style:italic;
            color:black;
        }

        h1 {
            text-align:center;
```

```
        }
    </style>
</head>
<body>
    <h1>The Story</h1>

    <p class="intro-paragraph">HTML is stand for HyperText Markup
Language. It is a language use to describe the structure of web
pages. The language is very easy to learn yet it is very
important. Its foundation for any web page.</p>
    <p class="intro-paragraph last-paragraph">>CSS on other hand
is a language that describe the appearance of HTML tag. In CSS
you could setting the appearance of HTML tag on the screen in a
way that satisfy with your needs. It's done by assigning correct
value to the property of CSS for HTML tag. </p>
    <p class="last-paragraph">JavaScript is differ from HTML and
CSS. Its a programming language. It's very useful to manage your
web page appearance programmatically. Currently, this programming
language is very important and become the top programming
language in the world.</p>
</body>
</html>
```
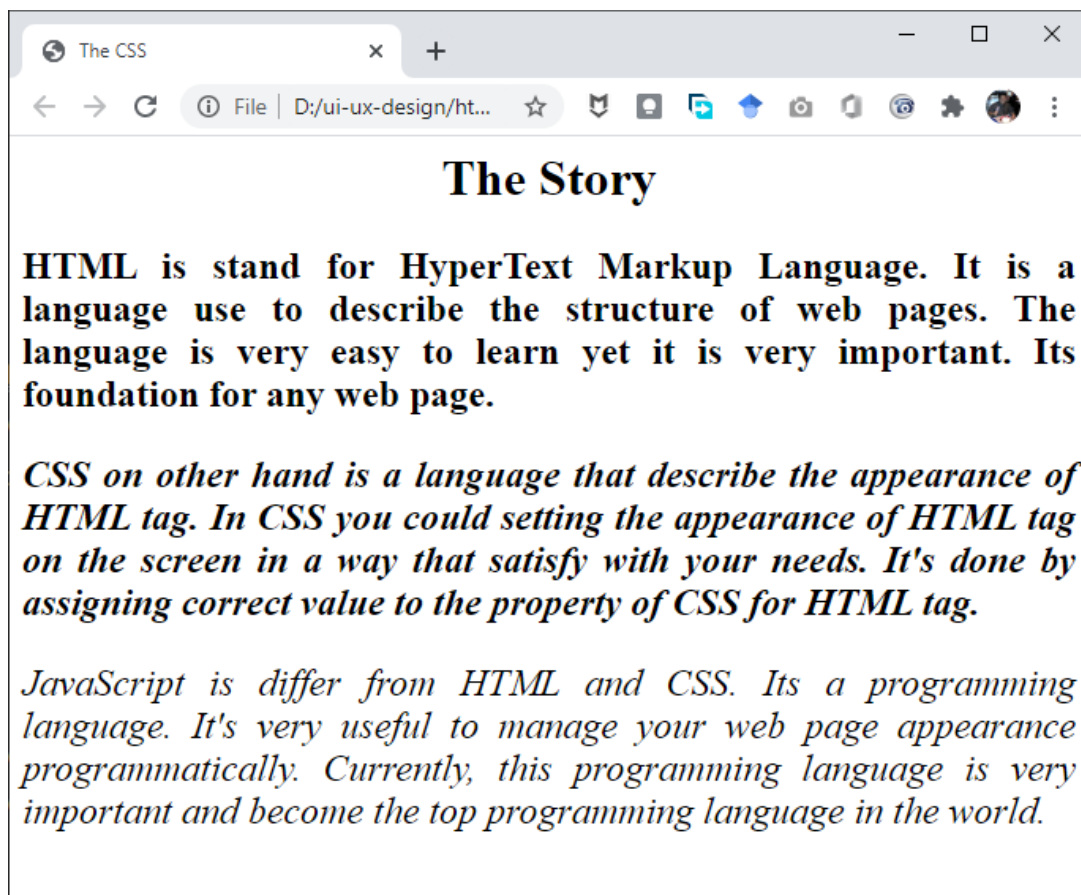

Figure 3.9 Paragraph 2 has two CSS class and the style become combination of the first paragraph and the last paragraph.

At this point, you've learned lot of thing about CSS such as how to create it and how to use it. *The CSS class is very important. It is encapsulated or wrapping the style that we want to apply to HTML tag.* The CSS framework such as bootstrap or foundation are consisting many ready components in form of classes that you can use to design your web page.

3.4.2 CSS Id

What is CSS id? What makes it different with CSS class? How to make it? And how to use it?

Those four questions may be inside your head right now. And you should know and understand it. CSS id is like CSS class is a way to wrap or encapsulate the style you want to apply to HTML tags, but it should be used only in one HTML tag in a web page. Meaning, unlike CSS class that you can assigned it to many HTML tags and you can used many CSS class in HTML tag, CSS id can only assigned to one HTML tag and a HTML tag allowed to have one CSS-id only. That the CSS-id and that the different with CSS-class. Very limited, right. **What the usage?**

Because the limited usage, it is mainly use to "mark" the area (part) of the web page. For example, the CSS-id mainly use to mark the header-part, content-part, sidebar-part, navigation-part, and footer-part of a web page. **Why?** Let's think! **Is it possible to have more than one header in your page?** The answer is no. **Is it possible to have more than one footer in your page?** The answer also no. It is also true for content-part, sidebar-part, and navigation-part.

After you "mark" the part of the web page, the next step is to declare the style for CSS-id. Here, usually we just give the basic style for those area or part of that web page. For example, in the content-part, we may define the basic or standard font such font family, font size, and so on. In the CSS-id, we usually working on web layout such as the width, the margin, the padding and so on.

At this point, are you figure out what the main different between CSS-class and CSS-id?

To create style in CSS-id you could use following format:

```
#CLASS-ID {
    property: value(s);
}
```

Figure 3.10 Format for declaring style in CSS-id

The format almost same with CSS-class, right. The only different is you using crash "#" symbol instead of dot (.). The name of class-id is alphabet without space, but you can combine it with hyphen(-), underscore (_) and/or numeric, for example "header", "footer", "content", "main-navigation", "side-bar" and so on. Meanwhile, to use the CSS-id in HTML tag is by assigned it to attribute called "id", such following format:

```
<HTML-TAG id="the-id">
    ...
    ...
</HTML-TAG>
```

Figure 3.11 Format for assigning id to HTML tag

We will be working on CSS-id more detail with example, in the next section or topic to create a web template (full web page).

3.5   CSS File

In previous section, we've learned and write CSS, and you did a great job 😊. However, we only working on single web page. Means that if we create another web page, we've to create it again from the start, No.. 🙁. Can we just copy it and paste it, when we create another web page? The Answer is NO, you cannot. Technically yes, but don't do it. Why? Because it is not good practice. Imagine you copy-paste your CSS whenever you create a new web page. If there are changes, you must visit all the web page one by one and edit it one by one. If there are mistake it is hard to track and may let some your web page have different appearance.

The better and the recommended way when you are working on with CSS is by make the special file called CSS file. In this file, you write your CSS and save it into file with extension .css, for example we name it by **my-style.css**. After that, in every HTML page, you just call it by using following tag:

```
<link rel="stylesheet" href="./my-style.css">
```

What the "./" means? It is mean that the CSS file is in same directory with the web page. (1) Place the above code inside <head> tag. (2) Cut and paste CSS from practice-1.html into my-style.css. (3)Remove tag <style>. After that, the practice-1.html will be like this:

```
<html>
<head>
    <title>The CSS</title>
    <link rel="stylesheet" href="./my-style.css">
</head>
<body>
    <h1>The Story</h1>

    <p class="intro-paragraph">HTML is stand for HyperText Markup
Language. It is a language use to describe the structure of web
pages. The language is very easy to learn yet it is very
important. Its foundation for any web page.</p>
    <p class="intro-paragraph last-paragraph">CSS on other hand
is a language that describe the appearance of HTML tag. In CSS
you could setting the appearance of HTML tag on the screen in a
way that satisfy with your needs. It's done by assigning correct
value to the property of CSS for HTML tag. </p>
    <p class="last-paragraph">JavaScript is differ from HTML and
CSS. Its a programming language. It's very useful to manage your
web page appearance programmatically. Currently, this programming
language is very important and become the top programming
language in the world.</p>
</body>
</html>
```

Shorter, right. Meanwhile, the my-style.css is like this:

```
p {
    text-align: justify;
    font-size: 18pt;
    color: blue;
}

.intro-paragraph{
    font-weight: bold;
```
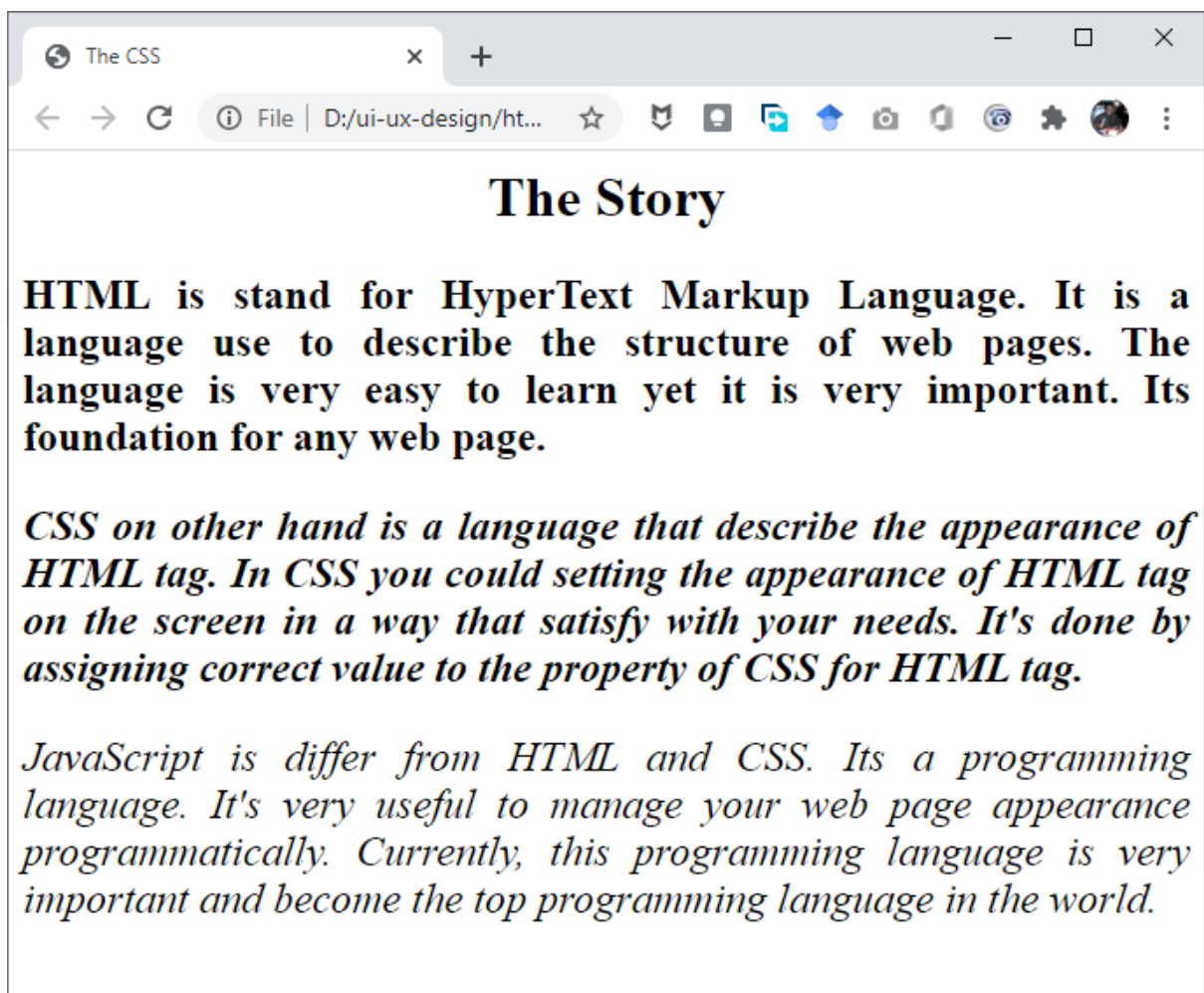
```
    color: black;
}

.last-paragraph{
    font-style:italic;
    color:black;
}

h1 {
    text-align:center;
}
```

Open web browser or refresh it, and you will see exactly same appearance, but look at your HTML code, it more cleaner and sorter, and you have CSS file that you can use it whenever you create another web page.

3.6   Style Attribute

You have seen two different way to write the CSS. Writing CSS in CSS file is the recommend one, because easy to maintain, make your HTML code cleaner and it can be

reused. In some condition, for some reasons and it is not recommended, you can write CSS directly in HTML tags by using attribute style, like following format:

```
<HTML-TAG style="property:value; property:value;">
    . . .
    . . .
</HTML-TAG>
```

Figure 3.12 Write CSS using in style attribute

3.7   Conclusion

In this topic we've learn CSS and how to work with it. We've learned how write the CSS either by using <style> tag, in CSS file and in HTML attribute. We know all the advantages and disadvantages. More importantly we know selector and we know how to use it to select and change the appearance of HTML tags. We know them and use them properly.

3.8   Assignment

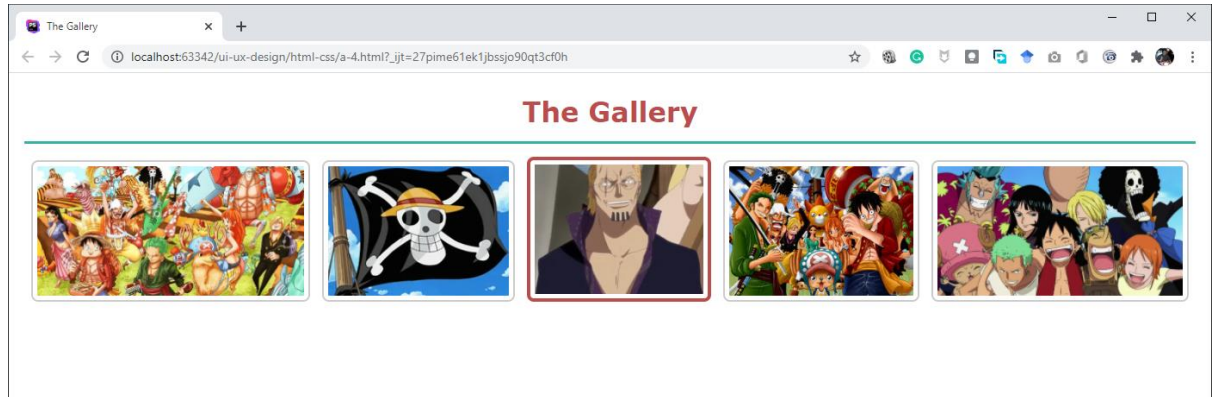Write your answer for each number into document and upload the PDF version.

1.) Read and follow this topic.
2.) Update your repository with commit → git commit -am "HTML and CSS"
3.) Make a web page that contain following table:

THE LIST OF PROPHETS

NUMBER	NAME	SENT TO
20	Ilyas, As	Samaria
21	Yunus, As	The people of Younis
22	Zakariya, As	Jerusalem
23	Yahya, As	Jerusalem
24	Isa, As	The Children of Israel
25	Muhammad, SAW	Universe

a) Set the CSS so that heading to be center and capital and the font family to Cambria.

b) Make CSS that make the table border and compact like above code, the cell padding become 5px, change the font family, and HTML heading become capital and bold.

4.) Create a web page that contains several images, the web page appearance in web browser like following:

a) Feel free to choose your favourite images.
b) The heading color: #bb4d4d, center, have bottom border, have a padding and margin
c) Each image by default have a border, the border has radius, it has padding and margin.
d) One image, the middle one has ticker border with different color
e) The images position are in the center.