

DCS 3003

WEBSITE DESIGN

HTML

Recap

CSS – The advantages:

CSS saves time

- Write CSS once and then reuse same sheet in multiple HTML pages.

Pages load faster

- Just write one CSS rule of a tag and apply to all the occurrences of that tag. So less code means faster download times.

Easy maintenance

- To make a global change, change the style and all elements in all the web pages will be updated automatically, to standardize the coding style.

Superior styles to HTML

- CSS has a much wider array of attributes than HTML so you can give far better look to your HTML page in comparison of HTML attributes.

Multiple device compatibility

- style sheets allow content to be optimized for more than one type of device such as PDAs and cell phones.

Global web standards

- now HTML attributes are being deprecated and it is being recommended to use CSS.
-

CSS

- 1) HTML tag has **limited attributes**
- 2) CSS can **extend the attributes and features** of HTML Tags

What HTML CAN do

What HTML CAN'T do

Setting borders individually

What HTML CAN do

Help

<enter your name>

What HTML CAN'T do

Putting icon on a button

? Help

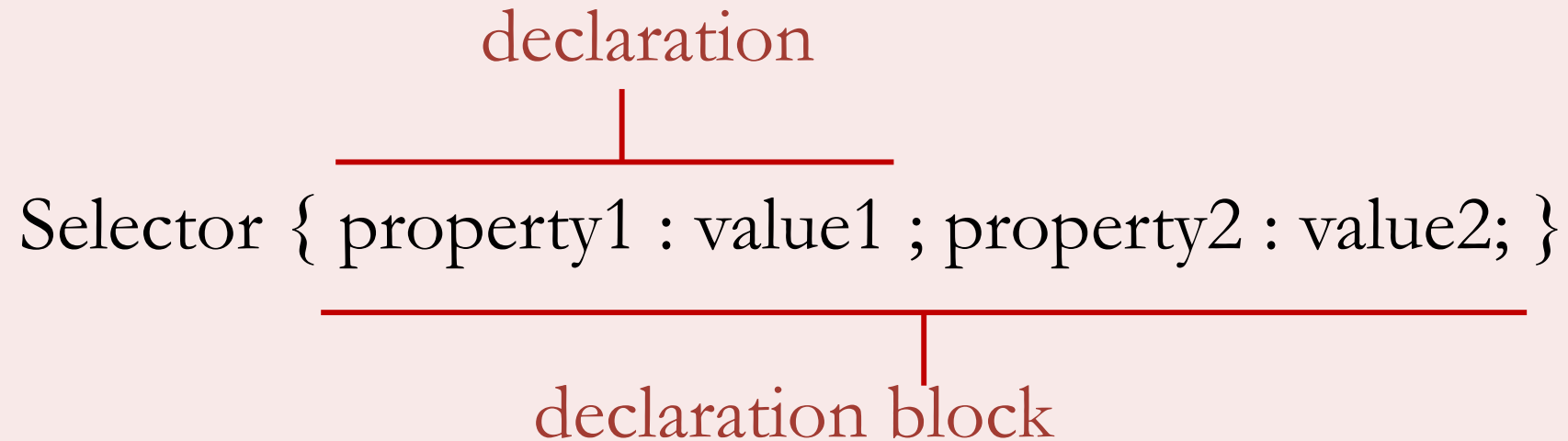
Setting colors, font, etc of form elements

Help

<enter your name>

Syntax

- > a rule consists of a selector, followed by property and value.
- > each pair called declaration or style



The diagram illustrates the syntax of a CSS declaration block. It features a light pink rectangular background. At the top, the word "declaration" is written in a dark red serif font. A vertical red line descends from this word to a horizontal red line. Below this horizontal line, the text "Selector { property1 : value1 ; property2 : value2; }" is written in a black serif font. Another horizontal red line is positioned below the text, and a vertical red line descends from its center to the words "declaration block" written in a dark red serif font at the bottom.

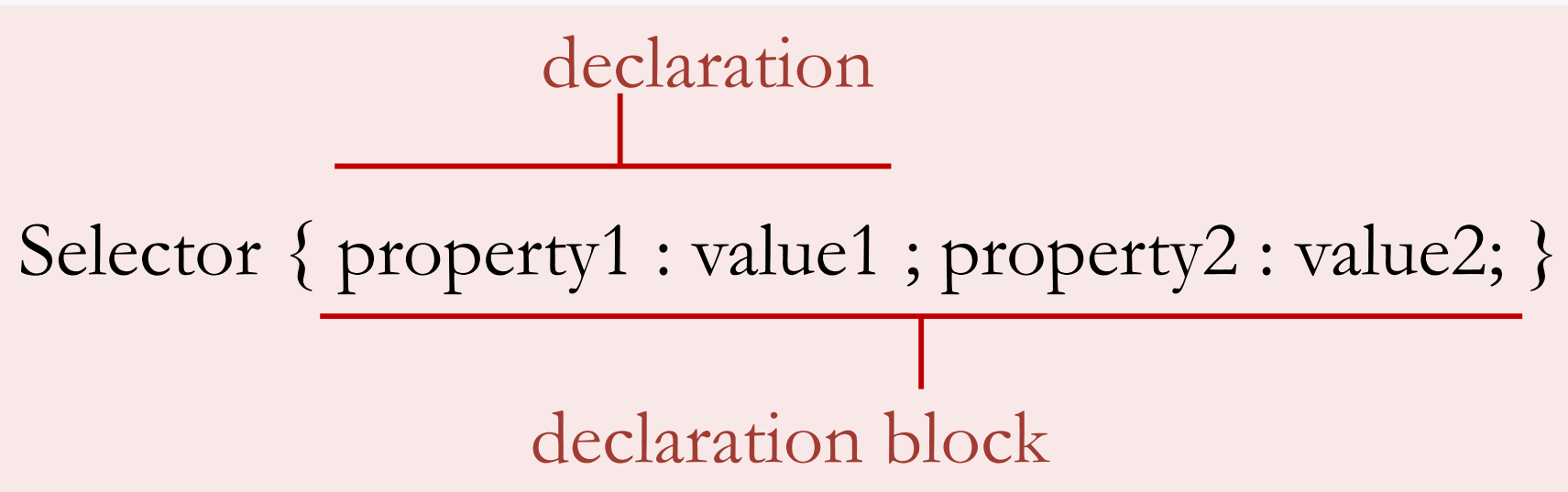
declaration

Selector { property1 : value1 ; property2 : value2; }

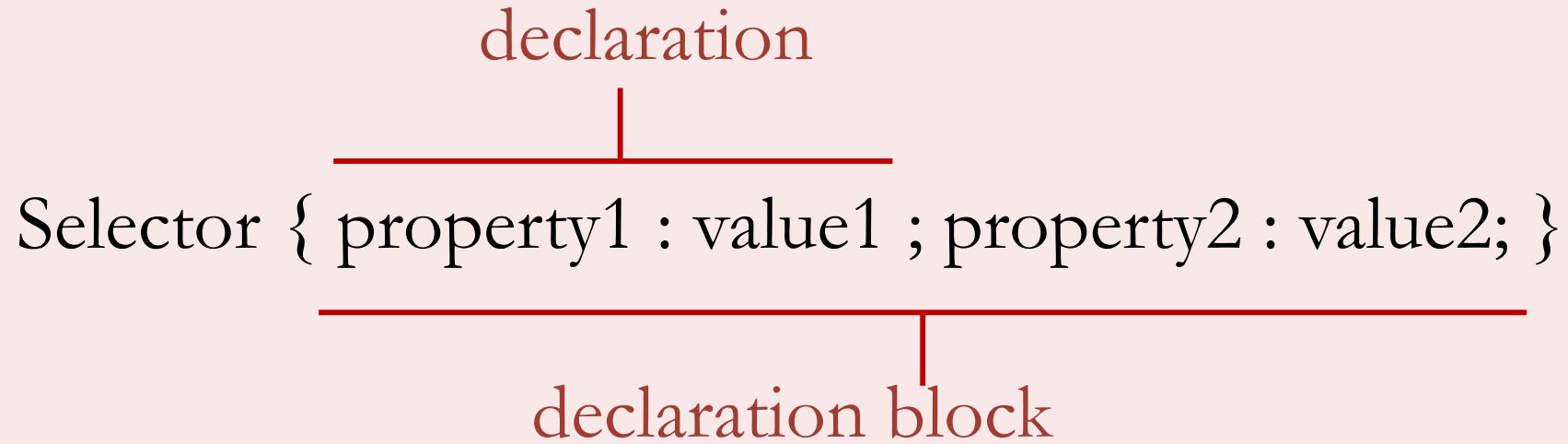
declaration block

Syntax (Ruleset)

- > Each ruleset must be wrapped in curly braces ({ }).
- > each declaration, colon (:) is use to separate the property and value.
- > multiple sets of CSS declarations separate by a semicolon (;)



Syntax - CSS rule set has 3 parts:



The diagram illustrates the syntax of a CSS rule set. It features a light pink rectangular background. In the center, the text "Selector { property1 : value1 ; property2 : value2; }" is displayed. A horizontal red line is positioned above the opening curly brace, with a vertical red line extending upwards from its center to the word "declaration" written in red. Another horizontal red line is positioned below the closing curly brace, with a vertical red line extending downwards from its center to the words "declaration block" written in red.

declaration

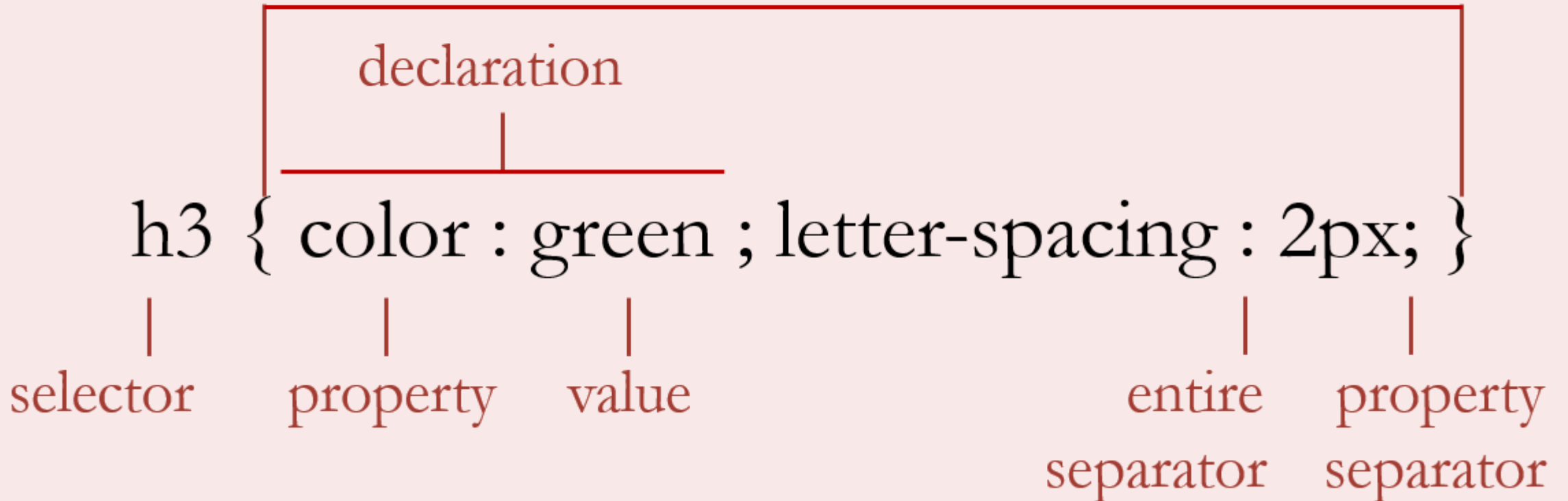
Selector { property1 : value1 ; property2 : value2; }

declaration block

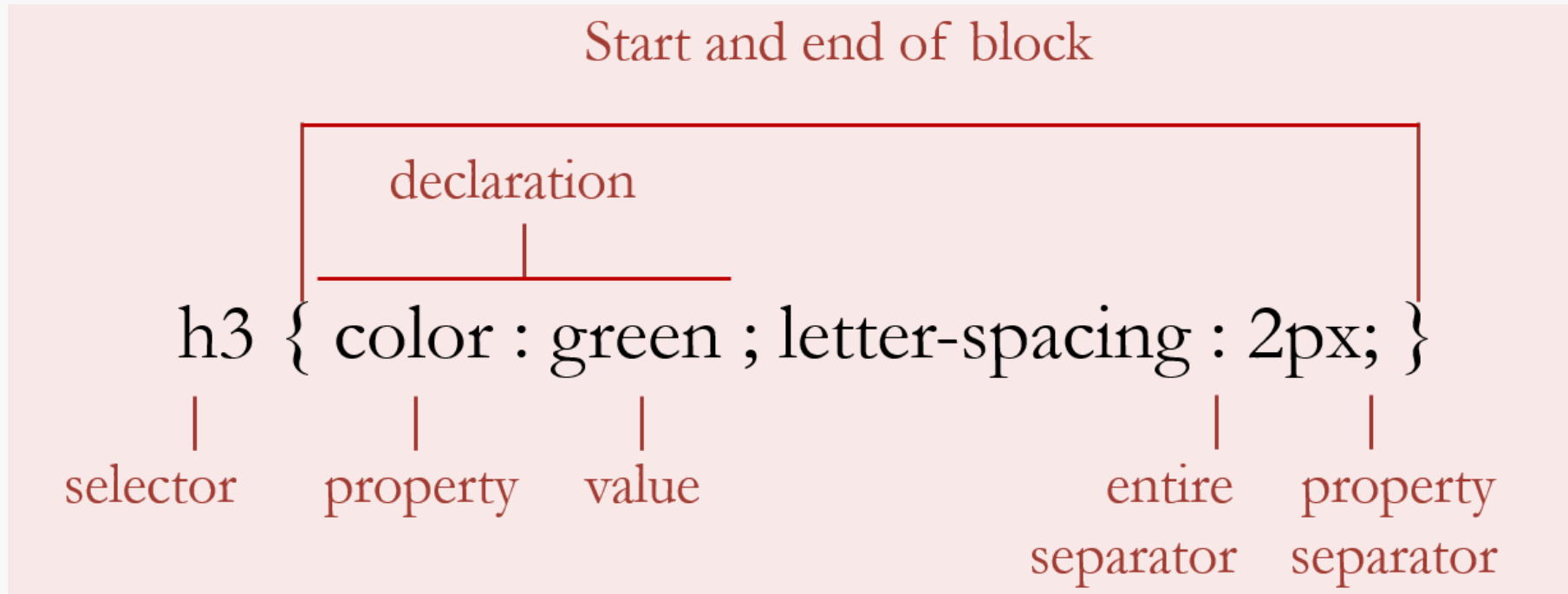
1. Selector
2. Property
3. Value

Syntax - CSS rule set has 3 parts: **Example**

Start and end of block

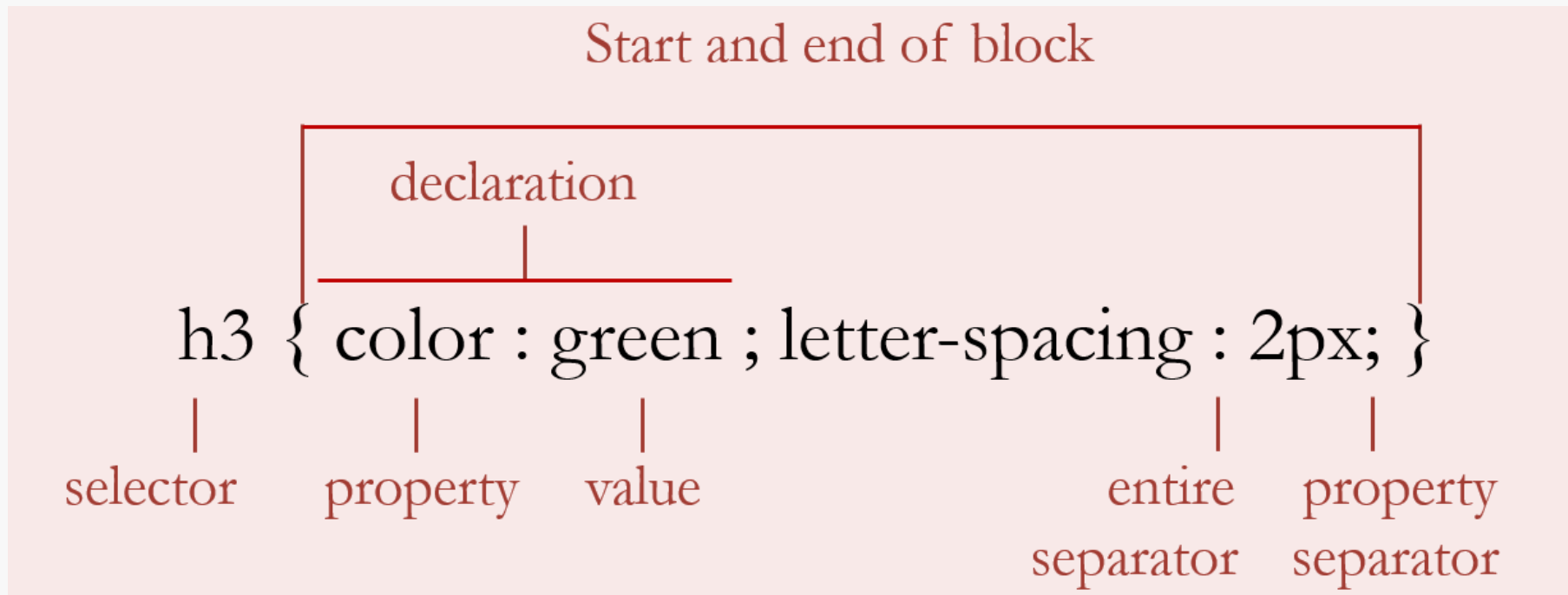


Syntax - CSS rule set has 3 parts:



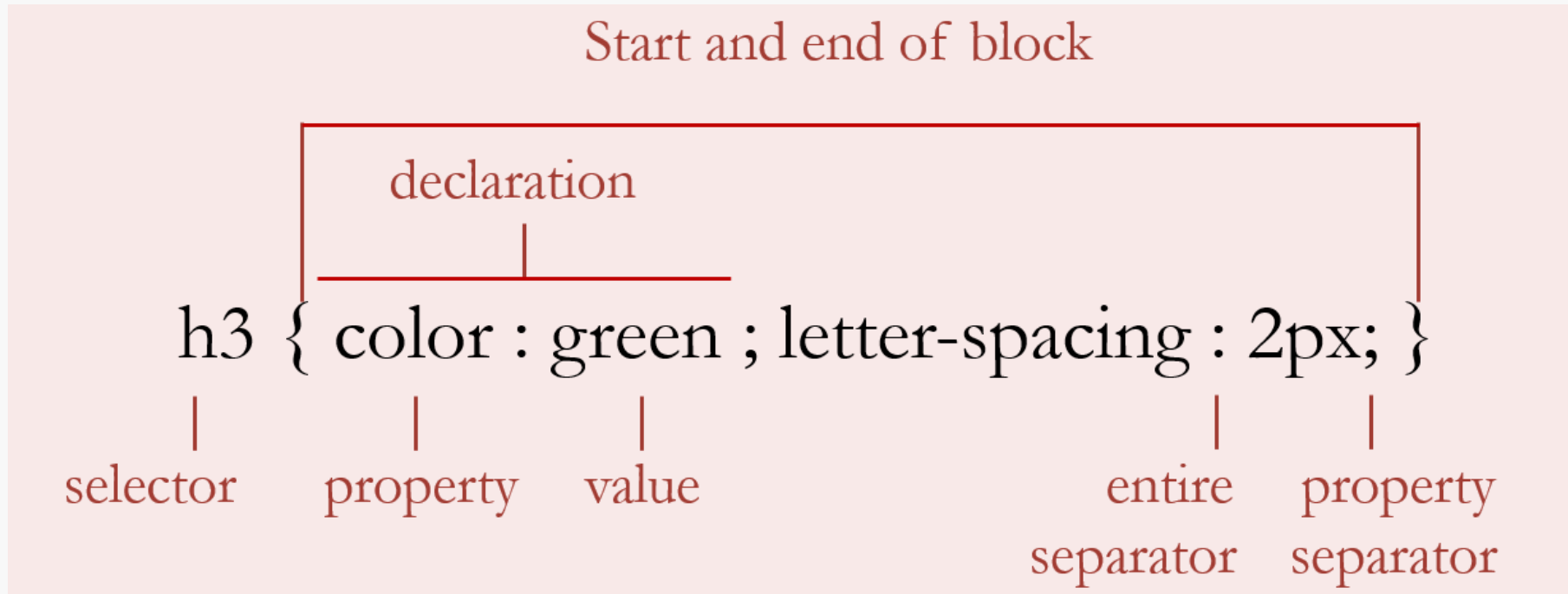
Selector - A selector is an HTML tag at which a style will be applied. This could be any tag like `<h1>` or `<p>` etc.

Syntax - CSS rule set has 3 parts:



Property - A property is a type of attribute of HTML tag. Put simply, all the HTML attributes are converted into CSS properties. They could be color, border etc.

Syntax - CSS rule set has 3 parts:



Value - Values are assigned to properties. For example, color property can have value either green or #FFFFFFF etc.

CSS — Selector Types

- 1) Tag/Element
- 2) Identification (id)
- 3) Class
- 4) Tag-specific
- 5) Grouping
- 6) Contextual
- 7) Pseudo-class

CSS — Selector Types - Tag/Element

- Using name of element/tag
- To redefine the default value of tags

Example:

Define

```
p {color:red;}  /*makes all p tags red*/
```

```
h1 {font-size: 20px;} /*makes all text set by h1 tag to be 20 pixel in size*/
```

Apply

```
<h1> <p> This is a red text with 20 pixel in size</p></h1>
```

CSS — Selector Types - Identification (id)

- To define styles, the selector names use prefix # character
- To apply the styles, set the ID attribute with the name

Example:

Define

```
#red {color:red;}
```

Apply

```
<b id="red"> This is a red bold text </b>
```

CSS — Selector Types - Class

- To define styles, the selector names use prefix . (dot) character
- To apply the styles, set the CLASS attribute with the name

Example:

Define

```
.green {color:#00FF00; font-weight:bold;}
```

Apply

```
<font class="green"> I like green color</font>
```

CSS — Selector Types - Tag-Specific

- Style can only be applied to elements which defined it.
- Selector name: tag_name.style_name

Example:

Define

```
font.redbold {color:red; font-weight:bold;}
```

Apply

```
<font class="redbold"> This is a red bold text</font>
```

```
<b class="redbold"> redbold style has no effect here</b>
```


CSS — Selector Types - Grouping

- Define the same styles to a group of tags.

Example:

Define

```
h1,h2,h3 {background-color: blue;}  
/*sets the background color of all h1,h2,and h3 elements to blue */
```

Apply

```
<h1> This is heading type1 with blue background color</h1>  
<h2> This is heading type2 with blue background color</h2>  
<h3> This is heading type3 with blue background color</h3>
```

CSS — Example:

Grouping selectors

```
h1,h2,h3 {  
    color: cyan;  
    padding: 15px;  
    background: silver;  
}
```

CSS — Example:

Grouping selectors

```
p,li,h1 {  
    color: cyan;  
    padding: 15px;  
    background: silver;  
}
```

CSS — Selector Types - Contextual

- Applies to descendent tags.

Define

Example: `p b {color:red; text-decoration: underline;}`

Apply

``CSS has no effect here``

`<p>`CSS has no effect here`</p>`

`<p>`

``CSS has effect here. This is a red underlined text``

`</p>`

CSS — Selector Types - Pseudo-class

- CSS pseudo-classes are used to add styles to selectors, but only when those selectors meet certain conditions.
- A pseudo class is expressed by adding a **colon (:)** after a selector.

Example:

a:link -> specifies the unvisited links

a:hover -> specifies the link as mouse cursor is hovering on it

a:active -> specifies the link as it is being clicked

a:visited -> specifies the link after being clicked

CSS — Selector Types - Pseudo-class

- CSS pseudo-classes are used to add styles to selectors, but only when those selectors meet certain conditions.
- A pseudo class is expressed by adding a **colon** (:) after a selector

Example: **Define**

```
a:link {font-weight: bold;} /* makes unvisited links bold */  
a:hover {text-transform: uppercase;} /* makes links uppercase as mouse  
cursor is hovering on*/
```

```
a:active {color: red;} /* makes links red as they are clicked */
```

```
a:visited {text-decoration: underline;} /* makes visited links underlined*/
```

CSS — **Example:**

Type 1 →

```
selector {  
    property1: value1;  
    property2: value2;  
    property3: value3  
    /* last semicolon is optional */  
}
```

Type 2 →

```
selector {property1: value1; property2: value2; property3: value3}
```

CSS — **Example:**

Type 1 →

```
h1 {  
  color: cyan;  
  padding: 15px;  
  background: silver;  
}
```

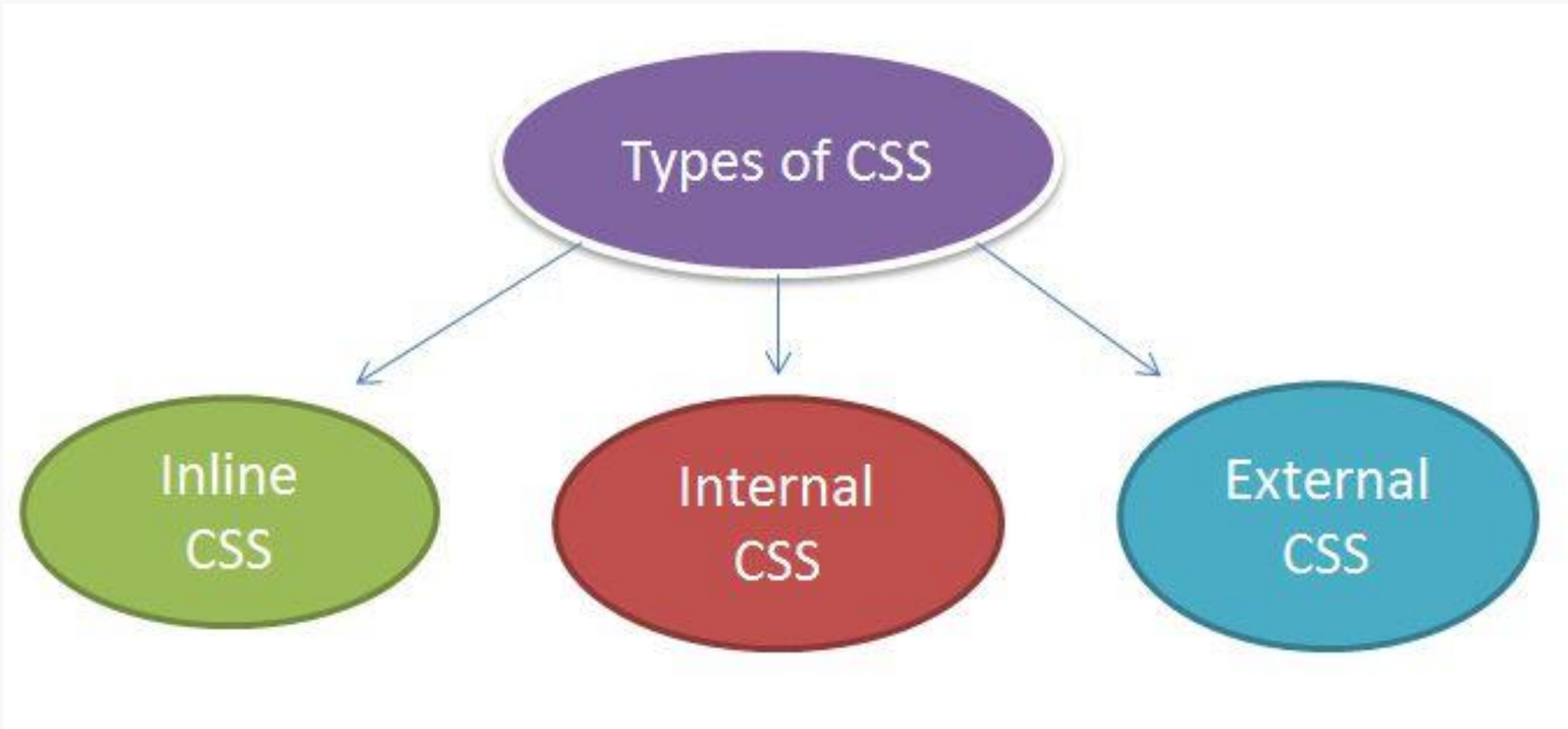
Type 2 →

```
h1 { color: cyan; padding: 15px; background: silver; }
```


CSS

Introduction (cont.)

CSS



CSS

There are three types of CSS which are given below:

- 1) **Inline CSS**
- 2) **Internal or Embedded CSS**
- 3) **External CSS**

CSS - 3 types of CSS :

Types of CSS	Description
Inline CSS	Use the style attribute inside HTML elements
Internal or Embedded CSS	Use a <style> element in the <head> section
External CSS	Use a <link> element to link to an external CSS file

CSS – Example

h3 With TYPES OF CSS

Inline CSS

```
<h3 style= "color:green "  
heading with inline</h3>
```

Used for single HTML Element.

Internal CSS

```
<head>  
  <style>  
    h3 {color: green;}  
  </style>  
</head>
```

Used for single page.

External CSS

```
<head>  
  <link rel= "stylesheet" href="heading.css">  
</head>
```

Used for many page.

Use the style attribute inside HTML elements

Use a <style> element in the <head> section

Use a <link> element to link to an external CSS file

CSS - Inline CSS

- Inline CSS **contains the CSS property in the body section**
- Inline CSS attached with element is known as inline CSS.
- This kind of style is specified within an HTML tag using the **style** attribute.

CSS - Inline CSS

- One of the way to apply styles.
- Not an efficient way to write -> redundancy code.
- Uniquely applied on each element.

CSS - Inline CSS

Example:

```
<body style="background-color:oldlace; padding:25px;">
```

```
<p style="background-color:blue;  
color:red;  
font-family:arial;  
font-size:200%;  
text-align:right;">
```

HTML – Activity 2 (Extra)

```
<p style="background-color:blue;">My first paragraph.</p>
```

```
<p style="color:red;">My first paragraph.</p>
```

```
<p style="font-family:arial;">My first paragraph.</p>
```

```
<p style="font-size:200%;">My first paragraph.</p>
```

```
<p style="text-align:center;">My first paragraph.</p>
```



```
<p style="background-color:blue; color:red; font-family:arial;  
font-size:200%; text-align:center;">My first paragraph.</p>
```

HTML – **Activity 7c *****

```
<body bgcolor="grey" text="white" align="center">
```

```
<p style="background-color:blue;  
color:red;  
font-family:arial;  
font-size:200%;  
text-align:right;">
```


CSS - Internal or Embedded CSS

- This can be used when a single HTML document must be styled uniquely.
- The CSS rule set should be within the HTML file in the **<head>** section, **<style>** tag.
- The CSS is embedded within the HTML file.

CSS - Internal or Embedded CSS

- No redundancy code
- Uniquely applied on a single document.

CSS - Internal or Embedded CSS - Example

```
<html>
```

```
  <head>
```

```
    <title>Internal CSS</title>
```

```
    <style>
```

```
      .main {  
        text-align:center;  
        color:#009900;  
      }
```

```
      .font1 {  
        font-style:bold;  
        font-size:20px;  
      }
```

```
    </style>
```

```
  </head>
```

```
  <body>
```

```
    <div class = "main">
```

```
      <div class =" font1">Welcome  
to My Website</div>
```

```
    </div>
```

```
  </body>
```

```
</html>
```

CSS - External CSS

- External CSS contains **separate** CSS file which contains only style property with the help of tag attributes (For example class, id, heading).
- CSS property written in a separate file with **.css** extension and should be linked to the HTML document using link tag.
- This means that for each element, style can be set only once and that will be applied across web pages.

CSS - External CSS

- Apply styles in `<link>` tag.
- No redundancy code.
- Uniquely applied to each document (web pages).

CSS - External CSS

Example:

The HTML file that is making use of the created external style sheet:

- 1) link tag is used to link the external style sheet with the html webpage.
- 2) href attribute is used to specify the location of the external style sheet file.

CSS - External CSS

Example:

The file contains CSS property and save as **.css** extension, **centralized.css**

```
body { background-color:powderblue; }
```

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

```
ABC { color:#009900; font-size:50px; font-weight:bold; }
```

```
#font1 { font-style:bold; font-size:20px; }
```

CSS - External CSS

Example:

```
<html>
  <head>
    <link rel="stylesheet" href="centralized.css">
  </head>

  <body>
    <div class = "main">
      <div class ="ABC">Welcome</div>
      <div id ="font">
        Welcome to My Website
      </div>
    </div>
  </body>
</html>
```

CSS - External CSS

Example:

centralized.css

```
body { background-  
color:powderblue; }
```

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

```
div.ABC { color:#009900; font-  
size:50px; font-weight:bold; }
```

```
div.font1 { font-style:bold; font-  
size:20px; }
```

activity.html

```
<html>  
  <head>  
    <link rel="stylesheet" href="centralized.css">  
  </head>  
  
  <body>  
    <div class = "main">  
      <div class ="ABC">Welcome</div>  
      <div class ="font1">  
        Welcome to My Website  
      </div>  
    </div>  
  </body>  
</html>
```

CSS - What Does "Cascading" Mean?

-> We use the term "cascading" because there is an established order of priority to resolve formatting conflicts:

1. Inline style (highest priority)
2. Internal style sheet (second priority)
3. External style sheet (third priority)
4. Web browser default (only if not defined elsewhere)

CSS - What Does "Cascading" Mean?

- 1) For any conflicts detected, it will use this priority system to determine which format to display on the page.
- 2) In the prior example, the heading text would display in the color specified by the inline style, which outranks all the others.
- 3) If multiple, conflicting styles are defined in the same style sheet, only the final one will be applied.

CSS - External CSS

Example:

centralized.css

```
body { background-  
color:powderblue; }
```

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

```
ABC { color:#009900; font-  
size:50px; font-weight:bold; }
```

```
#font1 { font-style:bold; font-  
size:20px; }
```

activity.html

```
<html>  
  <head>  
    <link rel="stylesheet" href="centralized.css">  
  </head>
```

```
<body style="background-color:yellow;">
```

```
  <div class = "main">  
    <div class ="ABC">Welcome</div>  
    <div id ="font">  
      Welcome to My Website  
    </div>  
  </div>
```

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

HTML

References

HTML References

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HTML 5

Tag	Info	V	Attributes*
<!-- -->	comment	4 / 5	none
<!DOCTYPE>	document type	4 / 5	none
<a>	hyperlink	4 / 5	href hreflang media ping rel target type
<abbr>	abbreviation	4 / 5	global attributes**
<acronym>	acronym	4	-
<address>	address element	4 / 5	global attributes**
<applet>	applet	4	-
<area>	area inside an image map	4 / 5	alt coords href hreflang media ping rel shape target type
<article>	article	5	global attributes**
<aside>	outside the main flow of the narrative	5	global attributes**
<audio>	sound content	5	autobuffer autoplay controls loop src
	bold text	4 / 5	global attributes**
<base>	base URL for all the page links	4 / 5	href target
<basefont>	Base font for the document	4	-
<bb>	invoked user agent com-	5	type

Tag	Info	V	Attributes*
<embed>	external interactive content or plugin	5	height src type width
<fieldset>	fieldset	4 / 5	disabled form name
<figure>	group of media content, and their caption	5	global attributes**
	text font, size, and color	4	-
<footer>	footer for a section or page	5	global attributes**
<form>	form	4 / 5	action data replace accept accept-charset enctype method target
<frame>	sub window	4	-
<frameset>	set of frames	4	-
<h1> to <h6>	header 1 to header 6	4 / 5	global attributes**
<head>	information about the document	4 / 5	none
<header>	header for a section or page	5	global attributes**
<hgroup>	heading section	5	global attributes**
<hr>	horizontal rule	4 / 5	global attributes**
<html>	html document	4 / 5	manifest

Tag	Info	V	Attributes*
	ordered list	4 / 5	start reversed
<optgroup>	option group	4 / 5	disabled label
<option>	option in a drop-down list	4 / 5	disabled label selected value
<output>	some types of output	5	form
<p>	paragraph	4 / 5	global attributes**
<param>	parameter for an object	4 / 5	name value
<pre>	preformatted text	4 / 5	global attributes**
<progress>	progress of a task of any kind	5	max value
<q>	short quotation	4 / 5	cite
<ruby>	ruby annotations	5	global attributes**
<rp>	provide parentheses around a ruby text	5	global attributes**
<rt>	ruby text component	5	global attributes**
<s>	strikethrough text	4	-
<samp>	sample computer code	4 / 5	global attributes**
<script>	script	4 / 5	async type defer src charset

CSS

References

CSS References

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Cascading Style Sheets (CSS 3)

BACKGROUND		BORDER		BOX MODEL	
background	<i>background-image background-position background-size background-repeat background-attachment background-origin background-clip background-color</i>	border-top	<i>border-top-width border-style border-color</i>	float	left right none
background-attachment	scroll fixed	border-top-color	<i>border-color</i>	height	auto <i>length</i> %
background-break	bounding-box each-box continuous	border-top-style	<i>border-style</i>	max-height	none <i>length</i> %
background-clip	<i>length</i> % border-box padding-box content-box no-clip	border-top-width	thin medium thick <i>length</i>	max-width	none <i>length</i> %
background-color	<i>color</i> transparent	border-width	thin medium thick <i>length</i>	min-height	none inherit <i>length</i> %
background-image	<i>url</i> none	border-radius	<i>border-top-right-radius border-bottom-right-radius border-bottom-left-radius border-top-left-radius</i>	min-width	none inherit <i>length</i> %
background-origin	border-box padding-box content-box	border-top-right-radius	<i>length</i>	width	auto % <i>length</i>
background-position	top left top center top right center left center center center right bottom left bottom center bottom right <i>x-% y-% x-px y-px</i>	border-bottom-right-radius	<i>length</i>	margin	<i>margin-top margin-right margin-bottom margin-left</i>
		border-bottom-left-radius	<i>length</i>	margin-bottom	auto <i>length</i> %
		border-top-left-radius	<i>length</i>		
		box-shadow	<i>inset [length, length, length, length <color>] none</i>		
		border-style	none hidden dotted dashed solid double groove ridge inset outset		

CSS

How Does **Internal or Embedded
CSS Work in HTML?**

HTML – Activity 15h

Before <table>

Personal details:

First Name:

Last Name:

Gender: ☐ Male ☐ Female

Choose your favorite subjects:

- ☐ DCS4103
- ☐ DCS3003
- ☐ MST1003
- ☐ MST2003

Address:

Date of birth:

Login password:

After <table>

Personal details:

First Name:	<input type="text"/>
Last Name:	<input type="text"/>
Gender:	<input type="radio"/> Male <input type="radio"/> Female
Choose your favorite subjects:	<input type="checkbox"/> DCS4103 <input type="checkbox"/> DCS3003 <input type="checkbox"/> MST1003 <input type="checkbox"/> MST2003
Date of birth:	<input type="text" value="dd/mm/yyyy"/>
Login password:	<input type="password"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

HTML – Activity 15h - <table>

```
activity15h - Notepad
File Edit Format View Help
<html><head><title>Form - Text Input</title></head>
<body topmargin=50><center><form>
<p style="background-color:powderblue;color:#696969;
font-family:verdana;font-size:160%;text-align:center;
width:fit-content;">
<br>Personal details:<br><br>
<table><tr>
<td width='40%'>First Name: </td>
<td><input type=text name=fname></td>
</tr><tr>
<td>Last Name: </td>
<td><input type=text name=lname> </td>
</tr><tr>
<td>Gender: </td>
<td>
<input type = radio name = gender value = Male> Male
<input type = radio name = gender value = Female> Female
</td>
</tr><tr>
<td>Choose your favorite subjects:</td>
```

```
activity15h - Notepad
File Edit Format View Help
<td>
<input type=checkbox name=fav_sub value=DCS4103>DCS4103
<input type=checkbox name=fav_sub value=DCS3003>DCS3003
<input type=checkbox name=fav_sub value=MST1003>MST1003
<input type=checkbox name=fav_sub value=MST2003>MST2003
</td>
</tr><tr>
<td>Date of birth:</td>
<td><input type=date name=dob></td>
</tr><tr>
<td>Login password:</td>
<td><input type=password name=loginpass></td>
</tr>
</table>
<br>
<input type=submit value=Submit>
<input type=reset value=Reset>
</td></tr>
<br><br>
</form></center></body></html>
```

HTML – Activity 15i

Internal or Embedded CSS

Before CSS


Personal details:

First Name:

Last Name:

Gender: ☐ Male ☐ Female


Choose your favorite subjects: ☐ DCS4103 ☐ DCS3003 ☐ MST1003 ☐ MST2003

Date of birth: 

Login password:

After CSS

Personal details:

First Name:	<input type="text"/>
Last Name:	<input type="text"/>
Gender:	<input type="radio"/> Male <input type="radio"/> Female
Choose your favorite subjects:	<input type="checkbox"/> DCS4103 <input type="checkbox"/> DCS3003 <input type="checkbox"/> MST1003 <input type="checkbox"/> MST2003
Date of birth:	<input type="text" value="dd/mm/yyyy"/> 
Login password:	<input type="password"/>

CSS - Internal or Embedded CSS – activity15i.html

```
*activity15i - Notepad
File Edit Format View Help
<html><head><title>Form - Text Input</tit
<style>
table{
font-family: Times New Roman;
background-color: powderblue;
font-size: 16pt;
}
caption {
text-align:center;
font-weight: bold;
font-size: 20pt;
height:50px;
}
th, td {
padding: 15px;
height:20%;
}
td.title {
font-weight: bold;
font-size: large;
background-color: #687886;
color: #fff;
}
</style></head>

activity15i - Notepad
File Edit Format View Help
<body topmargin=50>
<center>
<form>
<table>
<caption>Personal details:</caption>
<tr>
<td width='40%' class='title'>First Name:
</td>
<td><input type=text name=fname></td>
</tr>
<tr>
<td class='title'>Last Name: </td>
<td><input type=text name=lname></td>
</tr>
<tr>
<td class='title'>Gender: </td>
<td>
<input type = radio name = gender value =
<input type = radio name = gender value =
</td>
</tr>
<tr>
<td class='title'>Date of birth: </td>
<td><input type=date name=dob></td>
</tr>
<tr>
<td class='title'>Login password:</td>
<td><input type=password name=loginpass>
</td>
</tr>
</table>
<br><br>
<input type=submit value=Submit>
<input type=reset value=Reset>
</td></tr><br><br>
</form></center>
</body></html>
```

CSS

How Does **External CSS
Work in HTML?**

HTML – Activity 15j

External CSS

Before CSS


Personal details:

First Name:

Last Name:

Gender: ☐ Male ☐ Female


Choose your favorite subjects: ☐ DCS4103 ☐ DCS3003 ☐ MST1003 ☐ MST2003

Date of birth: 

Login password:


After CSS

Personal details:

First Name:	<input type="text"/>
Last Name:	<input type="text"/>
Gender:	<input type="radio"/> Male <input type="radio"/> Female
Choose your favorite subjects:	<input type="checkbox"/> DCS4103 <input type="checkbox"/> DCS3003 <input type="checkbox"/> MST1003 <input type="checkbox"/> MST2003
Date of birth:	<input type="text" value="dd/mm/yyyy"/> 
Login password:	<input type="password"/>

CSS - External CSS

activity15.css



```
activity15 - Notepad
File Edit Format View Help
table {
font-family: Times New Roman;
font-size: 16pt;
}

caption {
text-align: center;
font-weight: bold;
font-size: 20pt;
height: 50px;
}

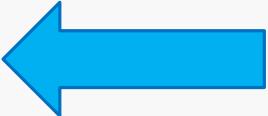
th, td {
padding: 15px;
height: 20%;
font-size: 16pt;
background-color: powderblue;
}

td.title {
font-weight: bold;
font-size: large;
background-color: #687886;
color: #fff;
}
```

activity15j.html

```
<html><head><title>Form - Text Input</title>
```

```
<link rel="stylesheet" type="text/css"
href="activity15.css">
```



```
</head>
```

```
<body topmargin=50>
```

```
<center><form>
```

```
<table>
```

```
<caption>Personal details:</caption>
```

```
<tr>
```

```
<td width='40%' class='title'>
```

```
First Name:
```

```
</td>
```

```
<td>
```

```
<input type=text name=fname>
```

```
</td>
```