

Chapter - 5 Cascading Style Sheets

2 Marks :-

1. What is CSS ? what are its advantages

Ans:- CSS (cascading style sheets) is a language that applies styles to a HTML documents and its elements to change the look and feel and is usually stored in separate .css style sheets which can be re-used for all the web pages. A website is made of HTML for content plus CSS for appearance

$$\text{HTML} + \text{CSS} = \text{WEBPAGE}$$

(content) (Presentation)

Advantages

(i) CSS save time: We can write CSS once and then reuse same sheet in multiple HTML pages. We can define a style for each HTML element and apply it to as many web pages as we want.

(ii) Pages load faster: If we are using CSS, we do not need to write HTML tag attribute every time, Just write one CSS of tag and apply to all the occurrences of that tag. So less code means faster download times.

(iii) Easy maintenance: To make a global change, simply change the style , and all elements in all the web pages will be updated automatically.

(iv) Consistency: with CSS it's easy to keep a consistent look throughout the website.

2. Explain the basic syntax of CSS with an eg

Ans- The CSS syntax consists of a set of a rules.

These rules have 3 parts: a selector, a property, and a value. To keep in line with the XHTML formating rules all CSS code should be written in lowercase

CSS Syntax

Selector { property : value; }

What HTML tag(s) does
the property apply to
(e.g. "body")

The property
could for eg be
the background
colour ("background-color")

The value of the property
background colour
could be red
("ff0000")

- Selector: Define which HTML tags are going to receive the CSS rules. To change the style of all the paragraphs we can write

p { Property: value; }

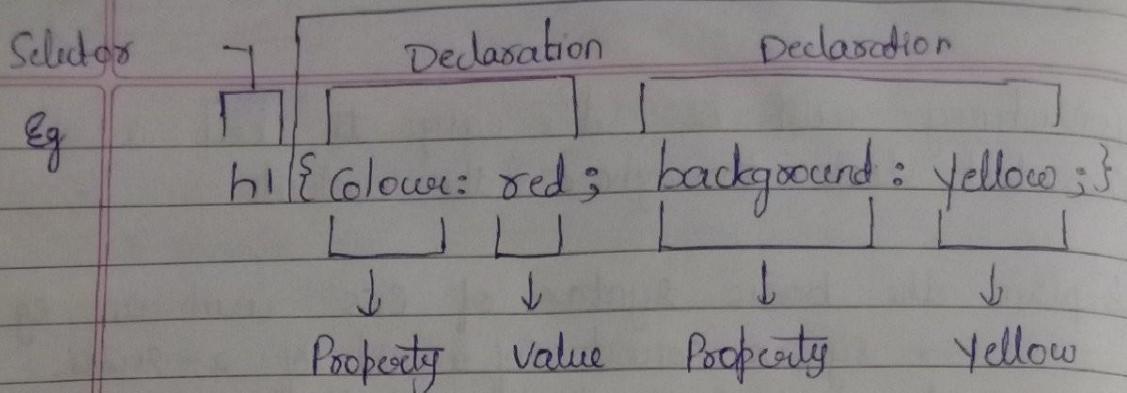
- Property: This is the CSS style we wish to apply. To change the text color of all paragraphs we can write

p { Color: value; }

- value: The value of the property. To make all paragraph text red we can write

p { Color: red; }

Declaration block.



3. What are contextual selectors? Eg

Ans:- We need to apply contextual selectors which only apply a CSS rule if a tag occurs in a certain context. A contextual selector is created by listing the tags in the nested order in which they should appear in the document.

Eg li p {color: red; }
h1 em {background: grey; }

4. What is the difference between id and class selector?

Ans:- class selector

→ Preceded by a dot(.) → Preceded by a hash symbol (#)

→ Targets any element that contain the given classname in its class attribute

→ Any element can have an id attribute, but that attribute's value may be used only once within a single document

→ A class attribute can be assigned to any elements in HTML, and any number of elements can belong to the same class.

5

Explain property value forms (css).

Ans:-

There are seven categories: font, lists, text, margins, color, backgrounds, and border. Every property has a value and value can include some measurements like px, cm, mm, etc.

(i) Number Values:

→ There are two types of number in css:

Integers ("whole" numbers) and real fractional number

These number types serve primarily as the basis for other value types, but, in a few instances, raw numbers can be used as a value for a property.

Eg 10.5, -980.00004 and 5

(ii) Percentage Values:

→ Percentage units are always relative to another value, often the elements font size of the parent element.

Eg P {font-size: 200%}

(iii) Length values:

Css supports many diff ways of measuring the length of an element.

6. Explain span and div tags

Ans:- Both <div> and is used to define parts of web page. The elements shows the inline portion of a document.

A <div> is a block level element and a span is an inline element. The div is used to wrap sections of a document, while span to wrap small portion of text, images, etc.

5 marks

1 what are the diff levels of CSS? Explain each with an eg

Ans:- CSS can be added to web pages at 3 different levels.

- 1) Inline styles
- 2) Internal or document styles
- 3) External styles

1) **Inline styles:** It is possible to create CSS styles that only work for the single tag it is defined for. Single tag CSS is used when the style is used in single place on the entire site.

2) **Internal:** Usually a certain style appears more than once in the web page, and thus we should use the internal technique: adding styles that are defined once for the entire page.

3) **External:** If, however, that certain style is used or more than a single page, we should use the third - and most powerful - technique called external: adding styles that are defined once for the entire site.

Inline styles:

The simplest and most direct way of applying CSS to an element is to write it into the tag itself as a style attribute `style="..."`. CSS style applied this way have the highest priority over another style definitions i.e., they will override existing styles.

Eg In the below code, we have used style attribute for **(bold)** tag. This tells the browser to display "web Programming" in bold and font-size 16 px

```
<b style = "font-size : 16px;"> web programming </b>
```

2) Internal or Document Styles

An internal style sheet should be used when a single document has a unique style. When applying internal CSS we put all CSS rules in the `<head> -> </head>` part of the XHTML document and enclose it with `<style type = "text/css"> --- </style>` tags as shown below

Eg `<head>`

```
<style type = "text/css">  
h1 { color : red; }  
p { color : yellow; }  
body { background-color : black; }  
</style>
```

`</head>`

The above code says that, all h1 heading should be styled with red color, all paragraphs should be styled with yellow color, and body of the doc must be black color. The browser will now read the style definitions, and format the document according to it.

3) External Styles

- The true power of CSS is separating presentation from content. External style sheets are the tools for doing exactly this. An external style sheet is ideal when the style is applied to many pages.

Eg: To include one or more style sheets into the XHTML document we can use the `<link />` element inside the HTML `<head>`

Eg Let's say that the style sheet is named `style.css` and it located in a folder named `style`. The situation can be illustrated like this

www.html.net

 └ default.htm

 └ style

 └ style.css

- The trick is to create a link from the XHTML document (`default.htm`) to the style sheet (`style.css`). Such link can be created with one line of XHTML code as shown below

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

- Type: This is the MIME content type and should always be set to `text/css` for stylesheet.
- rel: This attribute describes the relationship b/w the actual document and one we are linking to. In this case it's always stylesheet.
- href: This is the link to the stylesheet

Eg `<html>`

`<head>`

`<title> my document </title>`

```
<link rel="stylesheet" type="text/css" href="style/style.css" />  
</head>  
<body>  
:  
</body>  
</html>
```

2. Explain different types of selectors with an eg
- Ans - A selector may be user-specified via the `class = " "` or `id = " "` attribute, or it may simply be the XHTML tag name it self.

- (i) Type selector
- (ii) class selector
- (iii) ID selector
- (iv) Descendant selector
- (v) child selector
- (vi) Universal selector
- (vii) Adjacent Sibling selector
- (viii) Attribute selector
- (ix) Pseudo-classes
- (x) Pseudo-elements

(i) Type selectors : The most common and easy to understand selectors are type selectors. Type selectors will select any HTML element on a page that matches the selector, regardless of their position in the document tree.

Eg `em {color:blue}`

This rule will select any `` element on the page and color it blue. As we can see from the document all `` element will be coloured blue, regardless of their position in the document tree.

(ii) Class Selector

- While type selectors target every instance of an element, class selector can be used to select any XHTML element that has a class attribute, regardless of their position in the doc tree.

Eg <body>

```
<p class="big"> This is some <em> text </em> </p>
<p> This is some text </p>
<ul>
<li class="big"> List item </li>
<li> list item </li>
<li> List <em> item </em> </li>
</ul>
</body>
```

(iii) ID selector

- ID selector are similar to class selector. They can be used to select any HTML element that has an ID attribute, regardless of their position in the document tree.

Eg #navigation { width: 12em; color: #333; }

```
div#navigation { width: 12em; color: #333; }
```

(iv) Descendant selector

- Descendant selector are used to select elements that are descendants of another elements in the document tree.
- For eg ; we may wish to target a specific element on the page, but not all elements.

A sample document could contain the following code

```
<body>
```

```
<h1> heading <em> here </em> </h1>
```

```
<p> &lt;em> keyword </em> publisher </em> books. </p>
</body>
```

(v) Child selector

- A child selector is used to select an element that is a direct child of another element (parent). Child selector will not select all descendants, only direct children
- For eg, we may wish to target an `` that is a direct child of a `<div>`, but not other `` elements that are descendants of the `<div>`. A sample document could contain the following code

Eg
`<body>`

```
<h1> heading <em> text </em> </h1>
```

```
<div>
```

This is some `` text ``

```
<p> This is a paragraph of <em> text </em> </p>
```

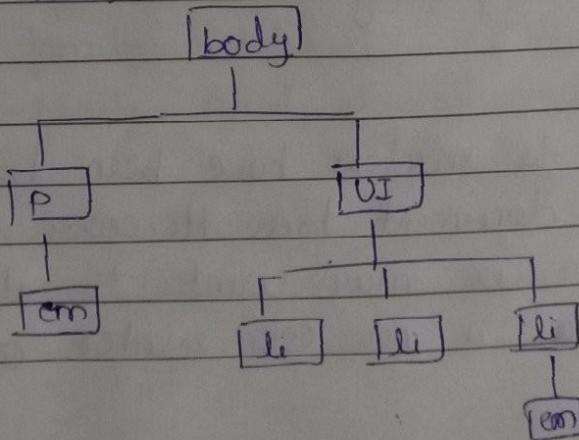
```
</div>
```

```
</body>
```

(vi) Universal selector

- Universal selector are used to select any element. For eg, the rule below will color all XHTML elements on a page blue - regardless of their position in the document tree

```
* {color:blue;}
```



(vii) Adjacent sibling selectors

- Adjacent sibling selector will select the sibling immediately following an element.
- For e.g., we may wish to target an `<h3>` element but only `<h3>` elements the immediately follow a `<h2>` element. This is a commonly used e.g., as it has a real world application. There is often too much space between `<h2>` and `<h3>` elements when they appear immediately after each other.

`</body>`

`<h2> heading 2 text </h2>`

`<h3> heading 3 text </h3>`

`<p> This is text and more text </p>`

`</body>`

(viii) Attribute selector

We know all XHTML elements can have associated properties, called attributes. These attributes generally have values.

`<h1 id = "selection 1">`

``

``

``

`<p class = "maintext">`

`<form style = "padding: 10px">`

(ix) Pseudo-classes

- So far, all the selectors have been based on element within the document tree. However there are times when we may want to style something where there is no CSS selector available,

- like the state of a hyperlink (eg. active or visited)
- :first-child
- :link
- :visited
- :hover
- :lang(n)

(x) Pseudo-elements

Pseudo-elements allows to style information that is not available in the document tree. For instance, using standard selectors there is no way to style the first letter or first line of an element's content.

Eg p: first-line {font-weight: bold;}

p: first-letter {font-size: 200%; font-weight: bold;}

3. Explain font properties with an eg

Ans:- When we design text document, one of the first things we do is specify the font. In CSS, font are specified using font-related properties.

(i) Font Families

A CSS font family is the type of font used for rendering text similar to the font we select in word processor such as Microsoft Word.

Eg h1 {font-family: Arial;}

h2 {font-family: Arial, Verdana, "Trebuchet MS";}

There are 2 categories of font families

① Family name: Eg of a family-name (often known as "Font") can eg be "Arial", "Times New Roman"

② Generic family: Generic families can best be described as groups of family names with uniformed appearance.

(ii) font size

The font-size property specifies the size of the font. The size can be numerical (length or %), or in text(possible value are "xx-large", "large", "medium", "small", "x-small", and "xx-small")

Eg p{font-size: 5px} Font size 5px

p{font-size: 150% ;} FONT size 150%

(iii) font variant

The font-variant property specifies whether the font will be displayed in small caps. Small cap mean that all letters will be displayed in the Capital Case, but the font size is smaller than usual

Eg CSS declaration

p{font-variant: small-caps;} o/p
Initial in small
Caps and Later In
LARGE CAPS

(iv) font styles:

The font-style property affects the posture of the text, that is, whether the letter shapes are vertical (normal) or slanted (italic and oblique)

Eg CSS Declaration

p{font-style: italic;} o/p
This is a paragraph with
font-style = Italic

p{font-style: oblique;} This is paragraph with
font-style = Oblique.

(v) Font Weights

- The font weight property specifies the thickness of the font. Font weight can go from 100 to 900, with 900 being the thickest. One can also specify "bold", "bolder" or "normal"

css declaration

p { font-weight: 100; }

p { font-weight: 900; }

p { font-weight: bold; }

O/P

This is font weight 100

This is font weight 900

This is bold font weight.

(vi) Font Shorthand

- Specifying multiple font properties for each text element could get repetitive and lengthy. So the creators of CSS provided the shorthand font property that compiles all the font-related properties into one rule.
- Using the font short hand property it is possible to cover all the diff font properties into one single rule.
- The value of the font property is a list of values for all the font properties we just looked at, separated by character space.

font-style | font-variant | font-weight | font-size
font-family

Normal way

p {

font-style: italic;

font-weight: bold;

font-size: 30px;

font-family: arial, sans-serif;

{

Font - shorthand way

p {

font: italic bold 30px

arial, sans-serif;

{

4. Explain text properties with eg

Ans:- The CSS text properties allows controlling the spacing, decoration and alignment of the text. Formatting and adding style to text is a key issue for any web designer. In this section we will discuss.

(i) Text indent

- The text indent property specifies how much space to indent before the first line of the text block.

Code

① p {text-indent: 2em;}

O/p

2cm Paragraph 1. The text indent

property indents only the first line of text by specified amount

② p {text-indent: 25%;}

25%

Paragraph 2. The text

indent property indents only the first line of a text by specified amount

③ p {text-indent: 35px;}

-35px

Paragraph 3. The text

indents only the first line of text by a specified amount

(ii) Text align

The text align property specifies how text is justified. Possible values are

Left : Left - justified

Right : Right - justified

Center : Text is centered

Justified : Text is both right and left - justified

Code

O/P

p {text-align: left;} P: The text-align property controls the horizontal alignment of the text within an element

p {text-align: right;} P: The text-align property controls the horizontal alignment of the text within an element.

p {text-align: center;} P: The text-align property controls the horizontal alignment of the text within an element

p {text-align: justify;} P: The text-align property controls the horizontal alignment of the text within an element.

(iii) Text-decoration

- The text-decoration property specifies how text is decorated

underline : adds an underline to the text

overline : adds a line on top of the text

line-through : adds a line through the middle of the text

blink : causes the text blink.

Code

O/P

p {text-decoration: underline;} I've got laser eyes,

p {text-decoration: overline;}

I've got laser eyes,

p {text-decoration: through;}

I've got ~~laser eyes~~

(iv) Text-transformation

- The text-transform property controls how upper and lower cases are displayed. Possible values are

Capitalize: capitalizes the first letter in a word
uppercase: makes the entire word uppercase
lowercase: makes the entire word lowercase
none: no transform is performed

Code O/P

p{text-transform:none} AND I know what you're thinking.

p{text-transform:capitalize} AND I know what you're thinking

p{text-transform:lowercase} and I know what you're thinking

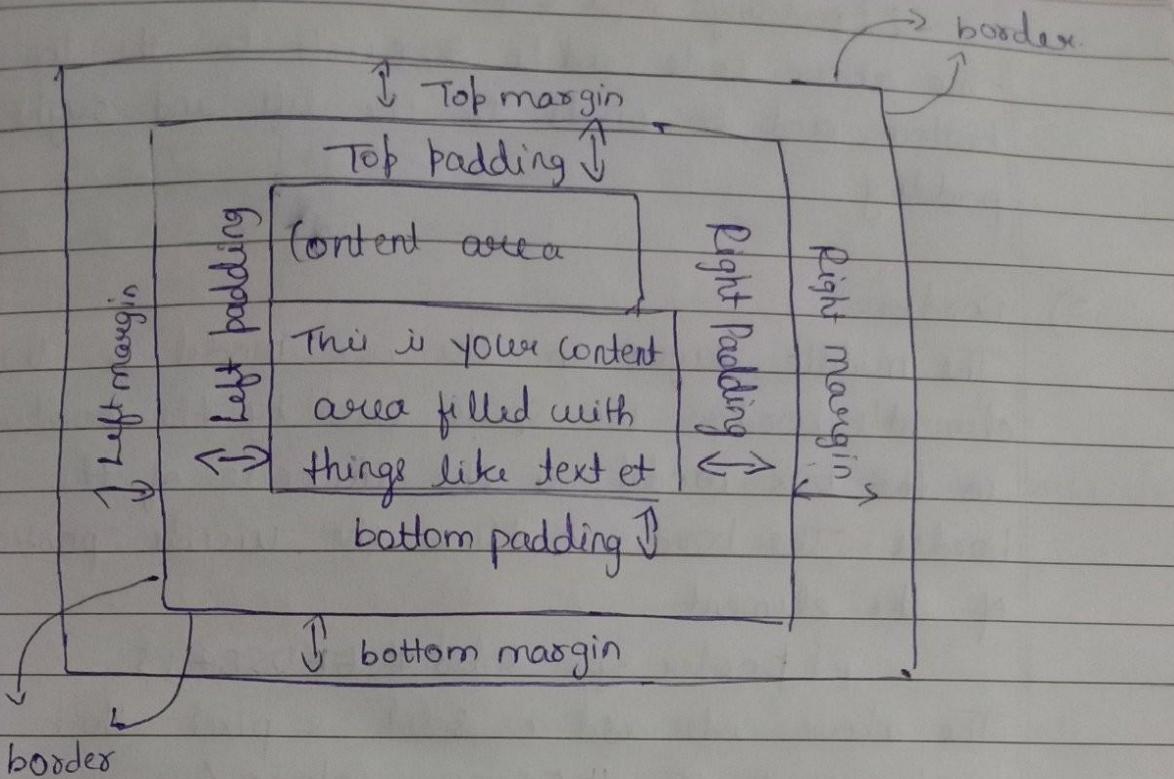
p{text-transform:uppercase} AND I KNOW WHAT YOU'RE THINKING.

5. Explain CSS Box model with eg

Ans:-

The best web sites will have great professional due to perfect placement and display of photos, ads, or text block with subtitle border or other. These 'special effects' were nothing more than the creative use of border, margin and padding. To understand how to apply border, margin or padding.

The term "box model" is often used by people when talking about CSS-based layouts and design. The box model is a term used when referring to the rectangular boxes placed around every element in the web page. It is one of the most basic concepts every web designer should know.



1) Content Area: The innermost part of the box is the XHTML element itself or content, such as `<div>`, `<p>`, `<h1>`, `` etc. The CSS width and height property defines the width and height of this element.

Code

css code

`P {width: 100px; height: 50px;}`

XHTML code

`<p> This is content area </p>`

O/P

List style Image

This is content area

[50px]

[100 px]

2) Padding: Next we have the padding property, which is the first layer we would encounter going outwards from the actual element covered in the previous point. The padding defines the space b/w the content area of the box and the border.

P{padding: 30px 20px 30px 20px;}

The above code adds 30 pixels to the top and bottom, and 20 pixels to the left and right padding.

3) Border:

The middle layer in the box model is the element's border. The space used by the border in the box model is the thickness of the border. The border outlines the visible portion of the element.

- P{border: 5px solid #EF05B4;}

The above code add a solid 5 pixel thick border with the #EF05B4 color*/

4) Margin:

Then we have the margin, which is the space just outside the border. The margin is completely invisible. It has no background color; and will not contain any elements behind it.

P{margin: 30px;}

```
<?xml version = "1.0" encoding = "ISO-8859-1"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
Transitional//EN">
```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.
dtd">
```

```
<html xmlns = "http://www.w3.org/1999/xhtml">
```

```
<head>
```

```
<title> Box model Example </title>
```

```
<style type = "text/css">
```

```
#box {
```

width: 350px;

border-color : red;

border-style : dashed;

}

<|style>

</ head>

<body>

<p> This text is outside the box area </p>

<p id = "box"> This is a text inside the box area </p>

</body>

</ html>

6. Explain the list and Background colour with eg

Ans:- List properties

i) List style type.

- We can see the list-style-type property to select the type of marker that appears before each list item. The general syntax is

Syntax List-style-type

values: none | disc | circle | square | decimal |

decimal-leading-zero | lower-alpha |

upper-alpha | lower-latin | upper-latin |

lower-roman | upper-roman | lower-greek |

Default: disc

Applies to: ul, ol and li

2) List style images

- If we are not happy with the preset css list styles we can use our own images as list marker by setting the list-style-image property. The general syntax is

List-style-image

values: <URL> | none | inherit

Default: none

Applies to: ul, ol and li (or elements whose display value is list-item)

3) List style position

With list-style-position property we can place the list marker either outside of the list item (default) or inside

Code

```
ol {list-style-position: inside;}  
ul {list-style-position: outside;}
```

O/P

list style image

- Item 1 → Outside
- Item 2 → Inside

1. Item 1

2. Item 2 →

Inside

* Background images

CSS is very powerful and useful when it comes to background images. With CSS, we can position a background image whenever we like.

- The background-image property is used to add a background image to an element. Its primary job is to provide the location of the image file. The value of background-image is a sort of val-holder that contains the URL of the image.

The URL is relative to the (x)HTML document that the image is going into, not the style sheet document

Eg body {background-image: url("map.png");}

To set the background image for whole page

Eg p {background-image: url("star.png");}

To set the background image for particular paragraph in a page

```
<?xml version = "1.0" encoding = "ISO-8859-1"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
<http://www.w3.org/TR/xhtml/DTD/xhtml1-transitional.dtd">
<html xmlns = "http://www.w3.org/1999/xhtml">
<head>
<title>Background Image Example </title>
<style type = "text/css">
<body {background-image: url("map.png");}
</style>
</head>
<body>
<p>Hello, this is background image demo </p>
</body>
</html>
```

(ii) Background repeat

- we can clearly see the famous 0/0 image repeat in entire page. This is the default behaviour. We can change this behaviour using background-repeat property.

The background-repeat property specifies whether a background image repeats itself. The default is "repeat", which means repeating the image in both the x and y direction.

body {

background-image: url("map.png");

background-repeat: no repeat;

}

p {

background-image: url("map.png");

background-repeat: repeat;

}

Background repeats in both direction.

(iii) Background position

- The background-position property specifies the position of the background. The values can be
- A combination of [top, center, bottom] and [left, center, right]
- Two percentage values: The first value indicates the horizontal percentage, and the second value indicates the vertical percentage
- Two position values: The first value is the absolute horizontal position, the second value is the vertical position.