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CSS

Complete Notes

* Introduction To CSS:-

HTML is just an skeletal layout of a website. We need CSS to design a website, add style to it and make it look beautiful.

* What is CSS:-

CSS stands for Cascading Style Sheets.

CSS is optional but it converts an off looking HTML page into a beautiful and responsive website.

* Installing Vs Code:-

We will use Microsoft Visual Studio code as a tool to edit our code. It is very powerful and per.

* Why Learn CSS:-

CSS is a very demanded skill in the world of web development. If you are successfully able to master CSS, you can customize your website as per your liking.

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Your first Line of CSS:-

Create a .css file inside your directly and add it to / your html . add the following line to your CSS .
body {

background-color : red ;
}

This will make your page background as red .

Chapter :01

(12) What is DOM?

Dom stands for document object model when a page is loaded, the browser creates a Dom page which is constructed as a tree of objects.

(13) Id and Class Attribute

When an html element is given an id, it serves as a unique identifier for that element.

on the other hand, when an html element is given a class, it now belongs to that class.

More than one elements can belong to a single class but every element must have a unique id (if assigned).

We can add multiple classes to an element like this.

unique id
`<div id="first" class="C1.C2.C3">
 ...
</div>`

multiple classes followed by spaces

(3) Three ways to add Css to Html.

There are 3 ways to add Css to html.

- * <style> tag → Adding <style> ---</style> to Html.
- * InlineCss → Adding Css using style attribute.
- * External Css → Adding a stylesheet (css) to Html using <link> tag.

(4) Css Selectors:-

* Css Selectors:-

A Css Selector is used to select an html elements for styling.

selector

body {

Color : red; → Property : Value

background : pink; → Declaration.

* Element Selector:-

It is used to select an element based off the tagname.

1. Syntax:

```
h2 {
```

```
    color: blue;
```

```
}
```

* id Selector :-

It is used to select an element with a given id.

Syntax:

```
# is used to target <#first>
```

by id.

```
color: black;
```

```
}
```

* Class Selector :-

It is used to select an element with a given class.

Syntax:

```
.red {
```

```
background: red;
```

```
}
```

* Group Selector :-

We can group selectors like this.

Syntax:

```
h1, h2, h3, div {
```

color: blue; → h1, h2, h3 and div

}

will be

* Universal Selector:-

Can be used as a universal selector
to select all the elements.

Syntax:

*

margin: 0;

padding: 0;

}

We can use element class as a selector
like this:

Syntax:

P.red {

color: red; → all Paragraphs of

}

will get color of
red.

* An inline style will override external and
internal styles.

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Comments in Css

Comments in css is text which is not
parsed and thus ignored.

Syntax:

Chapter: 02

Colors and Background

Css rules are simple key-value pairs with a skeleton we can write css rules to change color and set backgrounds.

The Color Property:-

The Css color property can be used to set the text color inside an element.

Syntax:

PS

{ color: red; } → Text color will be changed to red.

Similarly we can set color for different elements.

Types of Color Values:-

Following are the most commonly used color values in Css.

(1) RGB :-

Specify color using red, green, blue

values eg : $\text{rgb}(200, 98, 70)$

(2) HEX Code :~ Specify the color using hex code
eg $\# \text{FF7180}$.

(3) HSL :~ Specify the color using hsl values
eg: $\text{hsl}(8, 90\%, 63\%)$.
hsl stand for hue, saturation, lightness.

The value of the color or background color is provided as any one of these values.

Note :~

We also have an RGB and HSLA values for color but they are rarely used by beginners (a) Stand for Alpha.

The Background Property

The background-color Property Specifies the background color of a container.

Syntax:
.brown {

a) background-image Property

used to set an image as the background
syntax:

body {

background-image: url(" ");
}

The image is by default repeated in
second direction.

(2) background-repeat Property:

Can be any of:

repeat-x → repeat in horizontal direction

repeat-y → repeat in vertical direction

no-repeat → image not repeat.

(3) background-size Property:

Can be following:-

cover → fits and no empty space remains

contain → fits and image is fully visible

auto → display in original size

width → Set width and height will be set automatically

{width & height} → set width and height.

Note: Always check the browser does go direct a given CSS property. Remember, Practice will make you perfect.

(4) background-position Property:

Sets the starting of a background image.

Syntax:

div {

background-position: left top;

(5) background-attachment Property:

Defines a Scrollable/non-Scrollable characters of a background image.

Syntax:

div {

background-attachment: fixed

(6) background Shorthand.

A single Property to set multiple background Properties.

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Syntax:

```
div {  
background: red url( ) no repeat;  
fixed right top;  
}
```

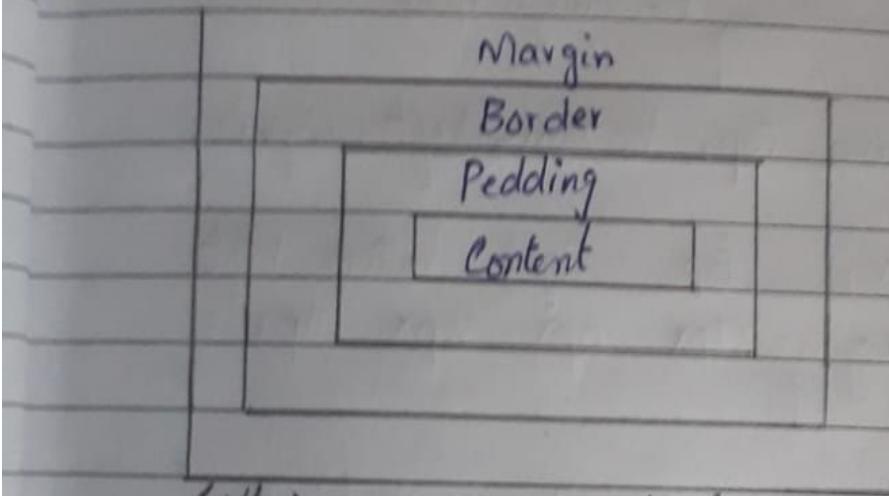
- * red → color
- * url() → image
- * nonerepeat → repeat
- * fixed → attachment
- * right top → Position.

One of the Properties can be missing given
the others are in order.

Chapter 03

CSS Box Model

The CSS box model looks at all the HTML elements as boxes.



Setting width and height:-

We can set width and height in CSS as follows.

Syntax:

#box {

 height: 70px;

 width: 70px;

}

Setting Margin and Padding:-

we can set margin and Padding as follows:

Syntax:

.box{

margin: 3px;

padding: 4px;

}

values have top, bottom, left, right.

.box{ top right bottom left

margin: 7px 0px 2px 11px;

.box{ top bottom right left.

margin: 7px 3px;

we can set the individual margin / Padding like this.

margin-top: 70px;

margin-bottom: 3px;

margin-left: 8px;

margin-right: 9px;

} Some goes with
Padding.

Setting : Border:-

we can set the border as follows.

.bx {

border-width: 2px;

border-style: solid;

border-color: red;

}

or just set border: 2px solid red;
(Shorthand).

Border Radius:-

we can set border radius to create rounded borders.

Syntax :

div {

border-radius: 7px;

}

- * border-top-radius * border-left-radius
- * border-right-radius * border-bottom-radius.

Margin Collapse:-

When two margins from different elements overlap, the equivalent margin is the greater of the two. This is called margin collapse.

Box Sizing

Determines what out of Padding and border is included in elements width and height.

can be Content-box - or border-box.

* Content-box:-

Include only content in width/height.

* border-box:-

The Content width and height include Content + Padding + border.

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Syntax :-

div {

 box-sizing : border-box ;
}

Chapter:04

Fonts and Display

- Display Property:

The CSS display property is used to determine element is treated as a block/inline elements and the layout used for its children.

flex / grid:

- Display: inline:

Takes only the space required by the element. No linebreak before and after. Setting width/height not allowed. And also margin and padding.

- Display: block:

Takes full space available in width and leaves a newline before and after the element.

- Display: inline-block:-

Similar to inline but setting height, width, margin and padding is allowed. Elements can sit next to each other.

- Display: none vs visibility: hidden

width with display:none, the element is removed from the document flow. Its space is not blocked.

with visibility: hidden, the element is hidden ^{but} its space is reserved.

Text Properties:-

- text-align Property:-

used to set the horizontal alignment of a text.

Syntax:

div {

text-align: center;
}

- text-decoration:-

used to decorate lines the text.
can be overline, line-through, underline, none.

- text-transform Property:-

used to specify uppercase and lowercase
and capitalized letters in a text.

Syntax:

P {

 text-transform: uppercase;
}

- line-height:-

used to specify the space between lines.

Syntax:

div {

 line-height: 10px;
}

- Word-Spacing:-

used to create space in words.

Syntax:
P{

word-spacing: ;
}

- letter Spacing

used to create space in letters.

Syntax:

P{

letter-spacing: ; }

Fonts

Font plays a very important role in the look and feel of a website.

- Font-Family

Font family specifies the font of a text. Can hold multiple values as a "fallback" system.

P{

font-family: "Times new Roman", monospace;
}

Always do this to ensure the correct font of your choice is rendered.

- Web Safe Fonts :-

These are fonts universally installed across browsers.

- How to add Google Font:-

In order to use custom google fonts, go to google fonts then select a style and finally paste it to the style.css of your page.

- Other Font Properties:-

Some of the other font properties are listed below:

Font-size:- sets the size of the font.

Font-style:- sets the font style.

Font-variant:- sets the text is displayed in small-caps.

- font-weight:- sets the weight of the font

- Generic Families:-

Broad class of similar fonts eg. serif,

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Sans-Serif just like when we say fruit, it can be any fruit.
When we say serif it can be any serif font.

Font-family → Specific

Generic family → Generic

Chapter : 05

Size , Position, lists :-

There are more units for describing size other than 'px'.

There are rem, cm, vw, vh, Percentages etc.

- What's wrong with pixels?

Pixels (Px) are relative to the viewing device: for a device with size 1920x1080, 1px is 1 unit out of 1080/1920.

- Relative lengths :-

These units are relative to the other length Property following are some of the most commonly used relative lengths.

- em → unit relative to the parent font size.
em means my parent element's font size.
- rem → unit relative to the root font size (`<html>` tag).

- vw → unit relative to 1% viewport width.
- vh → unit relative to 1% viewport height.
- % → unit relative to the Parent element.

min/max-height/width Property

Css has a min-height, max-height, min-width and max-width Property.

If the Content is Smaller Than the minimum height, minimum height will be applied.

Similar is the case with other related Properties.

Position Properties :-

used to manipulate the location of an element following are the possible values:

- Static:- The default Position top/bottom/left/right/z-index has no effect.
- Relative:- The top/bottom/left/right/z-index will now work otherwise the element is in the flow of document like static.
- Absolute:- The Element is removed from the flow and is relatively positioned to its first non-static ancestor top/bottom etc works.
- fixed:- Just like absolute except the element is positioned relative to the browser window.
- Sticky:- The Element is positioned based on user's scroll position.

List-Style

The list-style Property is a shorthand for type, position and image.

Syntax:

```
ul {
```

```
list-style: square inside;
```

```
    null();
```

```
}
```

- Square : list-style-type.
- Inside : list-style-position.
- null() : list-style-image.

list-style-type values:-

circle

, square

upper-roman

, lower-alpha.

list-style-position values:-

outside

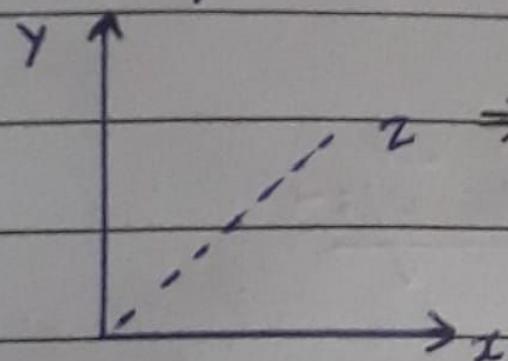
, inside

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Z-index Property

The z-index property specifies the stack order of an element.

It defines which layer will be above which in case of overlapping elements.



\rightarrow z is the third dimension.

Chapter: 06

Flexbox

Before we look into the CSS flexbox, we will look into float and clear properties.

- Float Property:-

Float Property is simple. It just places the element towards left/right/hole.

Syntax:

P { float : left ; }

inherit

- Clear Property:-

used to clear the float. It specifies what elements can float beside a given element.

CSS Flexbox

Aims at providing a better way to layout, align and distribute.

Space among items in a container.

Syntax:

Container {

display: flex;

}

- Flex direction Property:-

Defines the direction towards which items are laid can be row, row-reverse, column, column-reverse. default.

- Flex Properties for Parent (flex Container)

Flex-wrap : Can be wrap, nowrap, wrap-reverse, wrap-items.

- justify-content: Defines alignment along main-axis.
- align-items: Defines alignment along cross-axis.
- align-content:

(Flex items)

- order:
Specify the order item inside the container.
- align-self:
Specifies the alignment for the selected item inside the flexible container.
- flex-grow:
Specify how much a flex item will grow relative to the rest flex item.
- flex-shrink:
Specify how much a flex item will shrink relative to the rest of the flex items.

Chapter: 07

Grid, Media Queries

A css grid can be initialized using:
syntax:

div {

display: grid;

}

All direct children automatically becomes grid items.

- grid-column-gap:

used to adjust the space between the columns of a css grid.

- grid-row-gap:

used to adjust the space between the rows of a css grid.

- grid-gap:

Shorthand Property for grid-row-gap and grid-column-gap.

Syntax:

• container {

 display: grid;

 grid-gap: 40px 100px;

 } row col

Note: for a single value of grid-gap both row and column gaps can be set in one value.

Grid Container Properties:-

- grid-template-columns:-

can be used to

Specify the width of columns.

Syntax:

• container {

 display: grid;

 grid-template-columns: 80px 120px auto;

}

- grid-template-rows:-

can be used to

Specify the height of each row.

- Justify-Content → is used to align the whole grid inside the container.
- align-Content → is used to vertically align the whole grid inside the container.

Grid Item Properties:-

- grid-column → Defines how many columns an item will span.

Syntax :-
P {

grid-column: 1/5;
}

- grid-row → Defines how many rows an item will span.

We can make an item to start an column 1 and span 3 columns like this:

Syntax :

P {

grid-column: 1/span3;
}

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Media Queries

used to apply css only when a certain condition is true.

Syntax:

```
@media only screen and (max-width:  
800px) {  
    body {  
        background:- red;  
    }  
}
```

Chapter : 08

Transforms, Transitions and Animation

Transform:-

Transforms are used to rotate, move, skew, or scale elements. They are used to create a 3-D effect.

used to apply a 2D and 3D transformation to an element.

- Transform-origin →

Allows to change the position of transformed elements.

2D transforms → can change x and y axis

3D transforms → can change z axis as well.

- Css 2D transform methods.

You can use the following 2-D transforms in CSS:

Date: _____

translate() : Skew() :
rotate() matrix()
ScaleX() Scale()
ScaleY()

- CSS 3D transform methods

rotateX() rotateY()
rotateZ()

Transitions

used to change property values smoothly over a given duration.

used to add transition in css .

- transition-property → The Property you want to transition .
- transition-duration → Time for which you want transition to apply .
- transition-timing-function → How you want the property to transition .
- transition-delay → Specifies the delay for the transition .

All these property can be set using a single Shorthand Property

Syntax :

transition : width 3s ease-in 2s;
 ↓ ↑ ↓
 property duration delay
 timing-function

Date:

Transition multiple Properties :-

We can transition multiple properties as follows.

transition : opacity 1s ease-out,
transform 2s ease-in;

You can skip transition delay here!

Animations:-

used to animate CSS properties with more control we can use @keyframes rule to change the from a given style to a new style.

Syntax :-

```
@keyframes Ayesha {  
    from { }  
    to { }  
}
```

- Properties to add Animation :-
- Animation - name → name of the animation.
- Animation - duration → how long does the animation run?
- Animation - timing - function → Determine Speed curve of the animation.
- Animation - delay :- Delay for the start of an animation.
- Animation - iteration - count → number of times an animation should run.

- Animated-direction → Specifies the direction of the animation.
- Animation Shorthand →

All the animation properties from 1 - 6 can be applied like this:

① ② ③ ④ ⑤
 animation: ayesha 6s linear 1s infinite;
 ⑥
 reverse;

using percentage value states with animation:-

we can use % values to indicate what should happen when a certain percent of animation completed.

- @ keyframes Ayesha {

 0% { width: 20px; }

 50% { width: 80px; }

 100% { width: 200px; }

}

Images Extra

Properties:-

width : fit-content ;

width : fit-content(200px) ;

width : max-content ;

width : min-content ;

filter : grayscale(100%) ;

filter : blur(5px) ;

filter : brightness(180%) ;

filter : contrast(10%) ;

filter : invert(10%) ;

filter : saturate(100%) ;

filter : hue-rotate(100%) ;

Css Pseudo-classes

This is a class describing particular state of a selected html elements
Some important Pseudo-classes are hover , visited , Active , link etc.

Syntax :

P :hover {

color: blue;

use your types hover, active, link,
visited.

CSS Cursors

This property is generally used with the hover property. we can add how the mouse cursor responds when we hover it on the elements to make the element stand out:

Property with values:-

cursor: pointer;

alias;

auto;

all-scroll;

col-resize;

crosshair;

default;

copy;

move;

e-resize;

n-resize;

CSS Combinators

Selectors

It explains the relation between multiple or single Selector.

- Descendent Selector :-

It Select all the elements To Present inside another Specified HTML element.

Syntax:-

```
div P {
```

```
    color : Pink ;
```

```
}
```

- Child Selector :-

It selects only the first generation descender of a Specified element.

Syntax:

```
div>P {
```

```
    color : wheat ;
```

```
}
```

• Adjacent Sibling Selector

As the name suggests this selector only selects the adjacent element to the specified element.

Syntax:

div + P {

color: Blue;

}

• General Sibling Selector :-

Unlike the adjacent selector, this one going to select all the `<P>` tags present after `<div>`.

Syntax:

div ~ P {

color: wheat;

}

Over Flow

Property ~

overflow Property Controls what happens to content that is too big to fit into an area.

overflow → visible
hidden
scroll
auto

overflow-x →

overflow-y →

Math Functions

The CSS Math functions allow mathematical expressions to be used as property values.

calc() , max() , min().

calc width: calc(50% , 300px);

width: max(50% , 300px);

width: min(50% , 300px);

Border-Image Property

The border-image Property allows you to specify an image to be used as the border around an element.

Properties names:-

border-image - source

border-image - slice

border-image - width

border-image - outset

border-image - repeat

Syntax:

border-image : url() 30 round;

Inherit Value:-

The inherit keyword specifies that a Property Should inherit its value from its Parent element:

Syntax:

color : inherit;

Background Color Gradients

CSS provides the styling of background colour with gradients. You can blend as many colours to create gradient.

- Linear Gradient:-

The gradient goes from top to bottom, and from left to right.

- Syntax:-

background-image : linear-gradient
(100deg, blue, orange, red);

background-image : conic-gradient
(blue, orange, red);

background-image : radial-gradient
(blue, orange, red);

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CSS Shadow-box

The box-shadow Property attaches one or more shadows of an element.

- Syntax:

box-shadow: h-offset v-offset blur spread
color;

box-shadow: 10px 10px 10px #8888;
(inset used in this Property)

CSS Text-Shadow

The text-shadow Property add shadow to text.

- Syntax:

text-shadow: horizontal vertical color;

text-shadow: 2px 4px red;

text-shadow: 2px 2px 4px blue;

text-shadow: 0 0 3px pink;

Websites and Libraries :-

- CSS Gradient

use to generate background color.

- Gradient Maker

use to generate code of any color.

- Font Awesome

use to get icons :-

- Google Fonts

use to styling text/fonts.

- Animate.Css

It is use to add animation of any text, images and icons.

- Gradient Magic

use to generate code color.

- Vi Gradients

use to generate color.

- Adobe Fonts:-

use to high-quality font/text.

- Font Squire:-

use to font/text.

- Hover.Css:-

use to hover in any content.

- Lottie Files

use to animated images.

CSS · Test Preparation

1. CSS Quiz of W3School.
2. CSS Exercises of W3School.
3. CSS Quizes of GeeksforGeeks.
4. CSS Quizzes.
5. CSS Quize of W3docs.
6. CSS Quize of Codestraker.
7. CSS Quize of web-dev.