

Web Programming

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Topics

- **DIV Tag**
- **SPAN Tag**
- **What is HTML5?**
- **Difference between HTML&HTML5**

DIV Tag

- **Division Tag**
 - Used to divide a web page into different contents
- **Properties**
 - Block level tag
 - Generic container
 - Webpage Layout

`<div>` `</div>`

[Example 1](#)

[Example 1.1](#)

SPAN Tag

- **Generic inline container for inline elements**
 - Used for styling
 - Manipulation by JavaScript

** **

[Example 2](#)

What is HTML5?

- **It is the latest version of HTML**
- **Objective**
 - **Semantic Markup**
 - **Separate design from content**
 - **Responsive content**
 - **Reduce overlap**
 - **Support media experience**

Semantic Markup

- It means markup with meaning
 - `<header>`
 - `<nav>`
 - `<section>`
 - `<footer>`
 - `<address>`

Separate design from content

- **Removal of tags used for display purpose**
- **Reasons**
 - **Maintain design in CSS**
 - **Design for multiple devices**

Responsive content

- **Not everyone interacts the web the same way.**
 - Different screen size
 - Different aspect ratio
 - Different user interactions
- **No “hard-code” design and style**

Reduce overlap

- **HTML, CSS, JavaScript overlap with each other**
 - **HTML: Content**
 - **CSS: Design**
 - **JS: Interactivity**

Support media experience

- **Removal of plug-ins**
- **HTML5 support media elements**
 - **<video>**
 - **<audio>**
 - **<canvas>**

Difference between HTML&HTML5

HTML	HTML5
Doctype declaration is long	Doctype declaration is simple
Audio and Video are not part	Audio and Video are integral part
Vector Graphics require third party technologies	Vector graphics are integral part
GeoLocation not possible	GeoLocation is possible
Cookies used for storage	Local storage is provided

Guidelines for using HTML5

- **Avoid deprecated features**
- **Use new features**
- **Learn CSS**
- **Use HTML5 `<!DOCTYPE>`**
- **Don't close null tags**

Unit 2

Section 2.1

Topics

DIV Tag

SPAN Tag

What is HTML5?

Difference between HTML&HTML5

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Topics

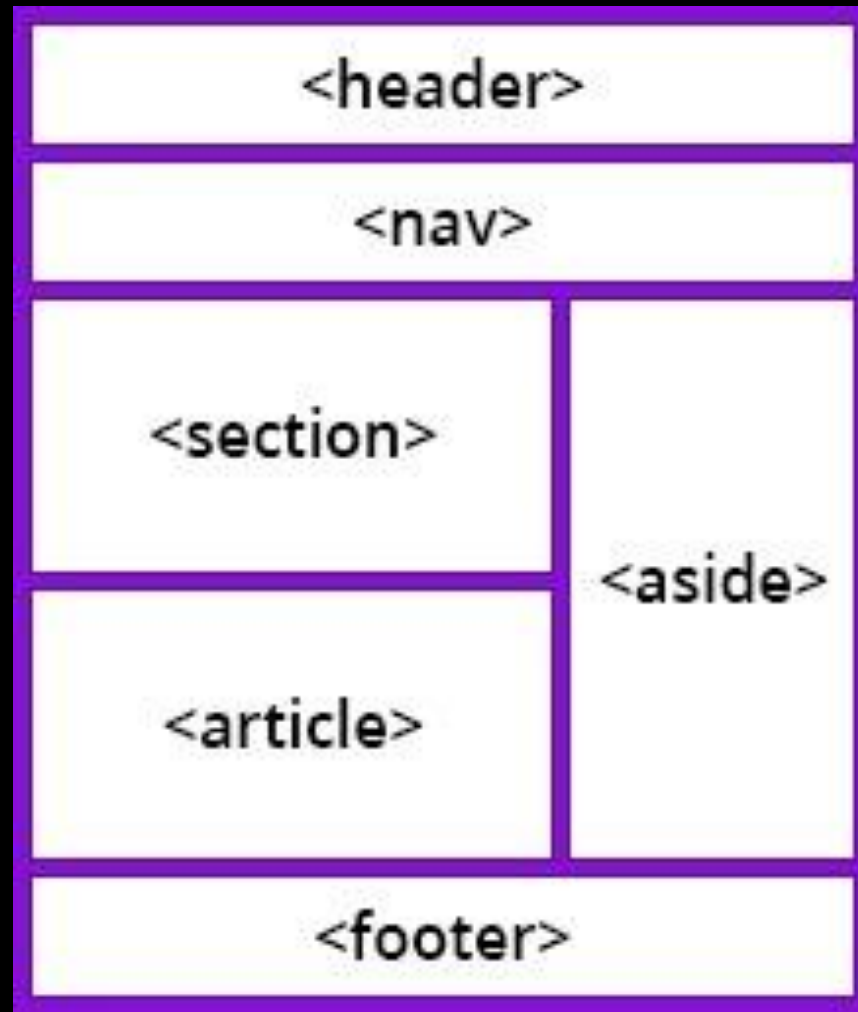
- **New elements in HTML5**

New elements in HTML5

- **Semantic and structural element**
- **Form Elements and Input Types**
- **New Attribute Syntax**
- **New graphic elements**
- **Media elements**

Semantic and structural element

- In HTML no standard name for structural elements
- Semantic elements help search engine



<header>

- Define header for a webpage/Section
- It consists of logo, search form, navigation link, etc...
- It cannot be placed within <footer>

`<header>...</header>`

[Example 3](#)

<footer>

- It is used to define footer of webpage/section.
- It contains author, contact, copyright information

`<footer>...</footer>`

<nav>

- This provide links to other webpage or parts within the webpage
- It may be menus, tables, contents and indexes.

`<nav>...</nav>`

<article>

- **Used to represent an article**
- **Independent from other content**
 - Single article webpage
 - Multiple article webpage
- **Similar to div**

`<article>...</article>`

<section>

- **Used to define sections such as chapters, news items in a webpage**

<section>...</section>

<aside>

- Provide information about the main content
- This content is represented in sidebars

`<aside>...</aside>`

<address>

- It defines contact information of the author
- It can be email address, url, physical address, phone number, etc.

<address>....</address>

Unit 1

Section 2.1

Topics

New elements in HTML5

Semantic and structural element

Header

Footer

Navigation

Article

Section

Aside

Address

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Topics

- **Form Elements and Input Types**
- **New Attribute Syntax**

Form elements

- **HTML <form> is used to collect user input**
- **Elements**
 - **Inputs**
 - **Buttons**

New Elements in HTML5

- **DataList**
- **Output**
- **Meter**
- **Progress**

- **DataList**
 - Predefined options for an input
 - Enables auto-complete feature

```
<datalist id = 'id_value' >
```

```
    <option value='value1' >
```

```
    <option value='value2' >
```

```
</datalist >
```

```
<input type='text' list='id_value' >
```

[Example 9](#)

- **Output Tag**

- Used to display result of a calculation

```
<output name='name' > </output>
```

```
<form oninput='result_calculation' >
```

```
</form
```


- **Meter Tag**
 - Used to represent scalar value or fractional value
 - Also known as gauge
- **<meter attributes...>...</meter>**
- **Attributes**
 - min, max
 - high, low, optimum
 - value

-
- **Progress tag**
 - Used to represent progress of a task

<progress> </progress>

- **Attributes**
 - **max**
 - **value**

Input Types

- **It allows user to enter data**
- **Used within a `<form>` tag**
- **Attributes**
 - **type**
 - **value**
 - **required**
 - **readonly**
 - **placeholder**

New Input Types

- **date**
 - Define a date time picker with calendar
- **time**
 - Used to enter time values
- **datetime-local**
 - Select both date and time

-
- **email**
 - Allow user to enter email id.
 - **number**
 - User can enter only numeric values. It has min , max and step attribute
 - **range**
 - Used to enter number between specific range

- **search**
 - Text field that can be used for searching
- **tel**
 - Used to get telephone number
- **color**
 - Allow user to select a color from color picker

New Attribute Syntax

- HTML5 allows four different syntaxes for attributes

Type	Attributes
Empty	readonly, required, disabled
Unquoted	value = value1
Double-quoted	value = "value1"
Single-quoted	value = 'value1'

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Section 2.1

Topics

Form elements and Input Types

New Attribute Syntax

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Topics

- **New graphic elements**

New graphic elements

- In HTML5 we can draw graphics using HTML elements
- No need to depend on third-party components
- Two graphics elements
 - Canvas
 - Scalable Vector Graphics(SVG)

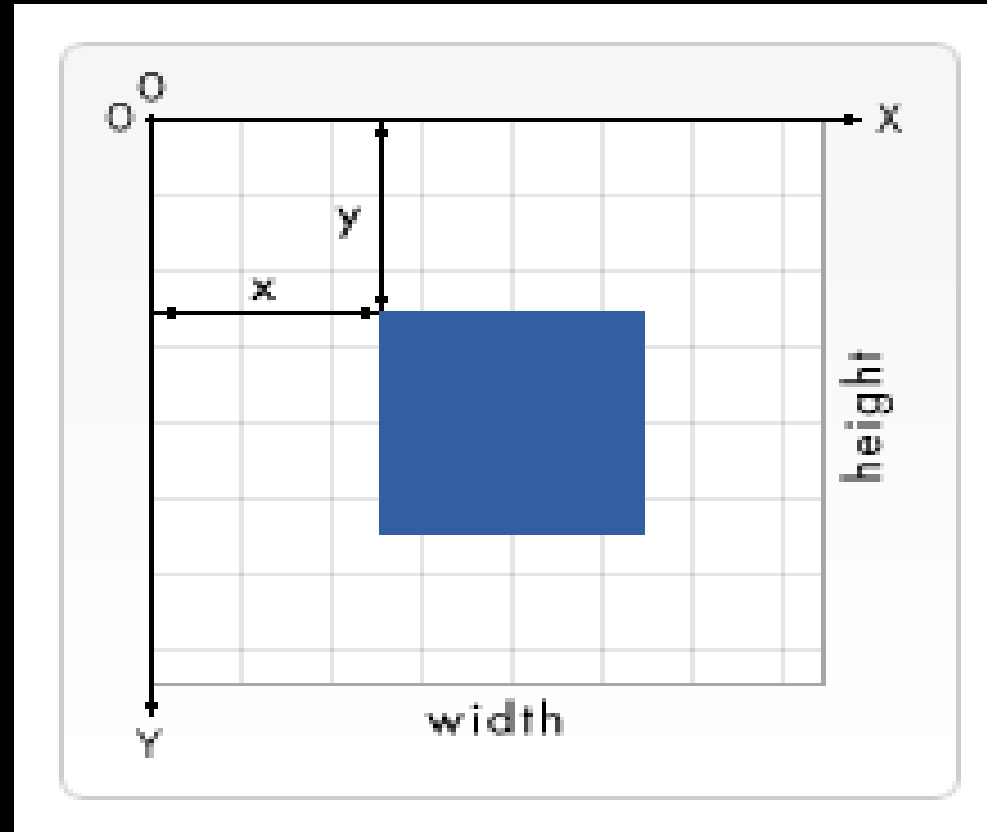
Canvas

- **It is a container for graphics**
- **Javascript is used to draw graphics**
- **Instruct browser to draw shapes without any plugin**

<canvas attri>...</canvas>

- **Attributes**
 - **id**
 - **width**
 - **height**

Grid



Basics

- **Get the canvas element**

```
var canvasname = document.getElementById('...');
```

- **Get the context of the element**

```
var ctx = canvasname.getContext('2D');
```

Drawing in Canvas

- **Line Drawing**
- **Rectangle**
- **Arc**
- **Text**

Line Drawing

- **beginPath()**
 - Used to start a path
- **moveTo(x,y)**
 - Move the path to the given point on the canvas

-
- **lineTo(x,y)**
 - Draw a line to the given point from the current point
 - **closePath()**
 - Used to create a path from the current point back to starting point

- **lineWidth**
 - Used to specify width of the line
`context.lineWidth = width;`
- **strokeStyle**
 - Used to set the color, gradient or pattern for the stroke
`context.strokeStyle = color;`
- **stroke()**
 - Used to draw the path defined by
`moveTo` and `lineTo`
 - Default color for stroke is black

- **fillStyle**

- Used to set the color, gradient or pattern for the stroke

```
context.fillStyle= color;
```

- **fill()**

- Used to fill the current drawing path
- Default color is Black

[Example 16](#)

Shapes - Rectangle

- **fillRect(x, y, width, height)**
 - Draw a filled rectangle
- **strokeRect(x, y, width, height)**
 - Draw a rectangular outline
- **clearRect(x, y, width, height)**
 - Clear the rectangular area and make it transparent

[Example 17](#)

Shapes-Arc

- `arc(x, y, radius, startAngle, endAngle, anticlock)`
 - Used to create arc or circle

$$\text{radians} = (\text{Math.PI}/180)*\text{degrees}$$

Text and Font

- **fillText(text, x, y)**
 - Create a text with fill style
- **strokeText(text, x, y)**
 - Create a text with only outline

-
- **font**
 - Used to assign a font
 - **textAlign**
 - Provides the alignment of the text
 - **textBaseline**
 - Provides the baseline alignment settings

Unit 2

Section 2.1

Topics

New graphic elements

Canvas

Basics

Line Drawing

Rectangle

Arc

Text and Font

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Topics

- **New graphic elements**
 - SVG
- **Media elements**

Scalable Vector Graphics (SVG)

- It is an XML-based markup language
- Used to describe 2D Vector Graphics
- Image can be scaled without losing quality

<svg attribute>...</svg>

SVG elements

- **Line**
- **Rectangle**
- **Circle**
- **Text**

SVG Line

- **`<line attributes> </line>`**
- **Attributes**
 - Starting point (x1,y1)
 - Ending point (x2,y2)
 - Line Color (stroke)
 - Line Width (stroke-width)

[Example 20](#)

Rectangle Drawing

- **`<rect attributes> </rect>`**
- **Attributes**
 - Top left corner (x,y)
 - Width and height (width, height)
 - Round corner(rx, ry)
 - Line style (style)

[Example 21](#)

Circle Drawing

- `<circle attributes> </circle>`
- **Attributes**
 - Center co-ordinates(*cx, cy*)
 - Radius (*r*)
 - Line Color (*stroke*)
 - Line Width (*stroke-width*)
 - Fill Color(*fill*)

[Example 22](#)

Text

- **<text attributes> Display Text</text>**
- **Attributes**
 - **Co-ordinate (x,y)**
 - **Shift distance (dx,dy)**
 - **Size of Font (font-size)**
 - **Display Filled Text (fill)**
 - **Display Stroked Text (stroke)**

[Example 23](#)

SVG vs Canvas

SVG	Canvas
Vector Based	Raster Based
Modified through script and CSS	Modified only through script
Good Text Rendering	Poor text rendering
Better scalability	Poor scalability

Media elements

- In HTML5 audio and video elements are termed as media elements
- HTML5 allows direct embedding of media elements without use of any plug-in
- Audio
- Video

Audio

```
<audio controls>  
  <source src="" type="" >  
</audio>
```

- **Type**
 - audio/mp3
 - audio/ogg
 - audio/wav

[Example 24](#)

Video

```
<video width="" height="" controls>  
  <source src="" type="">  
</video>
```

- **Type**
 - video/mp4
 - video/ogg
 - video/WebM

[Example 25](#)

Unit 2

Section 2.1

Topics

New graphic elements
Scalable Vector Graphics

Media Elements

Audio

Video

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Topics

- **Advanced HTML5**
 - **Links**
 - **List**

Links

- **It is a connection from one web source to another**
- **It starts at the source and points to the destination**
- **Anchor tag is used in HTML for links**

Anchor Tag

`Text Link`

- href: It is used to specify the destination address of the link
- Text Link: visible part of the link
- **Link Properties**
 - Unvisited link: underlined and blue
 - Visited link : underlined and purple
 - Active link: underlined and red

[Example 26](#)

Link Types

- **Internal Link (Relative URL)**
 - This link points to the resource on the same website
- **External Link (Absolute URL)**
 - This link points to the resource on external website

Target Attribute

- **Specify the location to open the linked resource**
- **Target attribute values**
 - **_self**
 - **_blank**
 - **_top**
 - **_parent**

[Example 28](#)

Links within Elements

- **HTML links can be given to HTML tags**
- **Some important Tags**
 - **Image Link**
 - **Button Link**

Lists

- **List is a short piece of information written on each line**
- **Types of List**
 - **Unordered List**
 - **Ordered List**
 - **Definition List**

Unordered List

`.....`

- **List items**
 - `...`
- **Default shape is small black circles**

[Example 30](#)

Ordered List

```
<ol type="">.....</ol>
```

- List items
 - ...
- List is numbered automatically
- Default starts at 1

[Example 31](#)

-
- **It has Additional Type attribute**
 - **Type Attribute values**
 - 1
 - A
 - a
 - l
 - i

Description List

- In this for each list item a description is given
- `<dl>...</dl>`
- List Item: `<dt>...</dt>`
- Item Definition: `<dd>...</dd>`

Nested List

- List can be nested by giving one list within another list

```
<ol>  
  <li></li>  
  <ol>  
    <li></li>  
  <ol>  
</ol>
```

Unit 2

Section 2.1

Topics

Advanced HTML5

Links

Lists

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Topics

- **Advanced HTML5**
 - **Tables**
 - **Frames**

Table

- In a table data is arranged in rows and columns

```
<table>  
  <tr>  
    <td>...</td>  
    <td>...</td>  
  </tr>  
</table>
```

-
- **Special header tag**

<th>...</th>

- **Used to display header information**
- **Display text in bold and centered by default**

-
- **colspan:** It is used to combine more than one cell to make a single column
 - **rowspan:** It is used to combine more than one cell to make a single row

thead, tbody andtfoot

- **<thead>**: used to group header content
- **<tbody>**: used to group body content
- **<tfoot>**: used to group footer content

[Example 37](#)

Frame tag

- **It is used to divide a web browser into multiple sections**
- **Each section can load different page**
- **frameset tag is used to create frames**
- **When using frames no body tag is used**

```
<frameset rows="" cols="">...</frameset>
```

- Within frameset tag `<frame>` tag is used

```
<frame name="" src=""/>
```

```
<noframes>...</noframes>
```

Frame within another frame

```
<frameset rows="" cols="" >
```

```
  <frameset rows="" cols="" >
```

```
    .
```

```
    .
```

```
  </frameset >
```

```
    .
```

```
    .
```

```
</frameset >
```

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Section 2.1

Topics

Advanced HTML5

Tables

Frames

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Topics

- **Advanced HTML5**
 - **Form**
 - **Input Tag**

Form

- Forms are used for collecting data from users
- It is sent to the server for processing

<form *attribute*>

.

.

</form>

- **Attributes**

- name/id
- method
- action
- autocomplete

<form action="URL" method="POST/GET">

Form elements

</form>

Input element

- It is used to create interactive controls for forms
- It collects user data for processing

`<input type="" id="" name="" attri>`

Attribute

- readonly
- disabled

Input Element Types

- **Text Box**
- **Label**
- **Textarea**
- **Radio Button**
- **Checkbox**
- **Select : Pull down list**
- **Submit**
- **Reset**

Text Box

- Used to get a single line value from the user

```
<input type="text" id="" name="" value="" >
```

- Default width is 20 characters

Label

- It is used to specify an label for an `<input>` element

`<label for="">text value</label>`

- **for**
 - It is used to specify id of the `<input>` element

- **Two ways of usage**
 - **Set id attribute in <input> element and specify its name in the for attribute inside <label> tag**
 - **<input> tag can be used within the <label> element**

[Example 40](#)

[Example 41](#)

Textarea

- Multi-line text input control
- Size is defined by rows and cols attribute

```
<textarea rows="" cols="" name="" id="" >
```

.

```
</textarea >
```


Radio Button

- It allows the user to select exactly one option from a list of given options
- Label is necessary for each radio button

```
<input type="radio" name="" value="" >
```

Checkbox

- Allows user to select one or more options among the given choices
- Label is necessary for each checkbox
`<input type="checkbox" name="" >`

Select Tag

- It is used to create a drop-down list
- It contains `<options>` tag

```
<select>
```

```
  <option value="">...</option>
```

```
  <option value="">...</option>
```

```
</select>
```

Submit and Reset

- **Browser renders them as buttons**
- **Submit is used to send the data entered by the user to the server**
- **Reset is used to clear the data in the form**

```
<input type="submit" value="" >
```

```
<input type="reset" value="" >
```

Unit 2

Section 2.1

Topics

Advanced HTML5

Form

Input

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Topics

- **Advanced HTML5**
 - **IFRAME**
 - **Target Attribute Values**
 - **Attributes for Select and Textarea**

IFRAME

- It is an inline frame for embedding third-party content

```
<iframe src="URL"></iframe>
```

- Additional Attributes
 - width
 - height

-
- **Target a link to iframe**
 - An iframe can be used as the target frame for a link
 - The target attribute of the link must refer to the name attribute of the iframe

Target Attribute Values

- **Target attribute**
 - **_self**
 - **_top**
 - **_parent**
 - **_blank**

Attributes for Select

- There are some additional important attributes that are used in select tag they are
 - multiple
 - size
 - readonly

Attributes for Textarea

- **Important Attributes**
 - spellcheck
 - placeholder

colgroup

- Used to specify properties for a group of columns within a table

```
<colgroup>
```

```
  <col span="" style="">
```

```
  <col>
```

```
</colgroup>
```

Additional HTML5 Concepts

- **HTML Comments**
- **HTML Symbols & Emojis**

HTML Comments

- To add comment in HTML page the following tag is used

Opening Comment: <!--

Closing Comment: -->

HTML Symbols and Emojis

- **Symbols that are not present on the keyboard can be added in HTML**
 - **Mathematical Symbols**
 - **Important Symbols**
 - **Currency Symbols**
 - **Arrow Symbols**
- **Emoji icons are used to share emotions**

Unit 2

Section 2.1

Topics

Advanced HTML5

IFRAME

Target Attribute Values

Attributes for Select and Textarea

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Topics

- **CSS**
 - **Introduction**
 - **Features**
 - **Style sheet basics**
 - **Types of style sheets**

Introduction

- In late 90's web site creation was tedious.
- Concept of "separating structure and presentation"
- In 1996 Cascaded Style Sheets was developed by W3C

Features

- **Faster webpage load**
- **Less code in each page**
- **Website look is consistent**
- **Easy design updating**
- **Easy site maintenance**

Style Sheet Basics

- **CSS contains style rules**
- **Rules are interpreted by browser**
- **Applied to corresponding elements**
- **Style rule is made of three parts**

selector { property: value }

- **Selector**
 - **HTML tag selector**
 - **Universal selector**
 - **Grouping selector**
 - **Child selector**

-
- **Property**
 - It is a type of HTML attribute
 - **Value**
 - Value to be assigned for that property

Types of style sheets

- **Inline Style**
 - Using style attribute in HTML tag
- **Embedded Styles**
 - Using <style> element in the head section
- **External Style Sheets**
 - Using <link> element to point to external CSS file

Unit 2

Section 2.2

Topics

Introduction

Features

Style sheet basics

Types of style sheets

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Topics

- **CSS3**
 - **Animation**
 - **Borders**
 - **Background**
 - **Fonts**
 - **Multiple columns**
 - **Text effects**

What is CSS3?

- **CSS3 is the latest evolution of the Cascading Style Sheets.**
- **It introduced various new features**
 - rounded corners
 - shadows
 - animation
 - multicolumn

-
- **In CSS3 introduced the concept of modules**
 - **This allowed faster finalization of specifications**
 - **Also allows browsers to support segments of specifications**

-
- **Key modules of CSS3**
 - **Animation**
 - **Borders and Background**
 - **Text effects**
 - **Selectors**
 - **Box model**
 - **User interface**

Animation

- It is the process of making shape changes
- Creating motions with elements
- CSS3 animation is based on keyframes

Defining Keyframes

- specify the values for animating properties at various stages
- Defined using
 - @keyframes or @-webkit-keyframes
 - Rule is given with (%) or keywords *from(0%)* and *to(100%)*

CSS Animation Steps

- **Two step process**
 - **First step define individual keyframes and give it a name**
 - **Second step is referencing the keyframes by name using animation-name property**

Important Animation Properties

- **animation-name**
- **animation-duration**
- **animation-delay**
- **animation-iteration-count**
- **animation**

Borders

- **Used to specify the border of the box representing an element**
- **Border Properties**
 - **border-color**
 - **border-style**
 - **border-width**
 - **border-radius**
 - **border**

-
- **border-style**
 - **dotted**
 - **dashed**
 - **solid**
 - **double**
 - **groove**
 - **ridge**
 - **inset**
 - **outset**
 - **none**
 - **hidden**

Unit 2

Section 2.2

Topics

CSS3

Animation

Borders

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Topics

- **CSS3**
 - Animation
 - Borders
 - Background
 - Fonts
 - Multiple columns
 - Text effects

Background

- **Used to define the background effects of elements**
- **Background Properties**
 - background-color
 - background-image
 - background-position
 - background-repeat
 - background-size
 - background-attachment

-
- **background-color**
 - Used to set background color of an element
 - **background-image**
 - Used to set background image of an element

```
background-image: url("image URL");
```

-
- **background-position**
 - Used to set the position of the image within the element
 - top left right bottom (or) pixel position
 - **background-repeat**
 - Define the direction in which an image is to be repeated
 - repeat, repeat-x, repeat-y, no-repeat

-
- **background-size**
 - Specify size of the background image
 - Four Different Syntax
 - Keyword Syntax – contain, cover, auto
 - One-value Syntax – width given height auto
 - Two-Value Syntax – width and height given
 - Multiple-background Syntax

-
- **background-attachment**
 - Specify how to move the background relative to the viewport
 - Two values
 - scroll
 - fixed

Fonts

- **Used to define the font property of an element**
 - **font-family**
 - **font-style**
 - **font-variant**
 - **font-weight**
 - **font-size**

-
- **font-family**
 - specify font for an element

 - **font-style**
 - Specify font style for text: normal, italics, oblique

- **font-variant**
 - Used to change the targeted font to small caps
- **font-weight**
 - Used to set the thickness of the font, normal, bold, lighter, 100-900
- **font-size**
 - Used to set the size of the font smaller, small, medium, large, larger, px value

Unit 2

Section 2.2

Topics

CSS3

Background

Fonts

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Topics

- **CSS3**
 - Animation
 - Borders
 - Background
 - Fonts
 - **Multiple columns**
 - **Text effects**

Multiple columns

- **Used to set the number of columns and the width of the columns.**
- **Column Properties**
 - **column-count**
 - **column-width**
 - **column-fill**
 - **column-gap**
 - **column-rule**
 - **column-span**

-
- **column-count**
 - Specify the number of columns the content is to be distributed
 - **column-width**
 - Used to set the width of the column in px
 - **column-fill**
 - Used to specify how to fill columns: **balance, auto**

-
- **column-gap**
 - Used to specify the gap between columns: normal or px value
 - **column-rule**
 - Specify width, style and color of rule between columns
 - **column-span**
 - Specifies that an element should span across elements

Text effects

- **Used to set the properties of text in an element**
- **Text Properties**
 - **text-align**
 - **text-decoration**
 - **text-indent**
 - **text-shadow**
 - **text-transform**

-
- **text-align**
 - Used to align the content of an element: left, right, center, justify
 - **text-decoration**
 - Used to add a line to the text: underline, overline, line-through

- **text-indent**
 - Specify horizontal space given on the first line of text
- **text-shadow**
 - Used to show shadow of text
 - `text-shadow: px px px color;`
- **text-transform**
 - Used to control text case
 - lowercase, uppercase, capitalize

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Section 2.2

Topics

CSS3

Multiple columns

Text effects

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Topics

- **Formatting Text and Fonts**
- **Formatting Colors and Backgrounds**

Formatting Text and Fonts

- **These properties are used to manipulate text and fonts**
 - **Font families**
 - **Font size**
 - **Kerning**
 - **Leading**
 - **Indenting**

Font families

- **This property is used to specify a list of fonts for an element**

font-family: <family-name>, <generic-name>;

family-name: name of a specific font given in quotes

generic-name: used as a fallback mechanism to specify a font. Given as the last font in list

-
- **Generic Font names**
 - serif: **stroke** at end
 - sans-serif: **no stroke** at end
 - cursive: appears like *handwritten* text
 - monospace: each character same **width**
 - fantasy: **decorative** text

Font Kerning

- **It defines the space between letters**
- **Property Values**
 - **auto: browser will determine**
 - **Normal: info stored in font is used**
 - **none: info stored in font is not used**

Leading

- It is used to set spacing between each line of text

`line-height: VALUE;`

- **Property Value**
 - normal
 - number
 - %

Indenting

- Specify the amount of space to be given before the beginning of a line

```
text-indent: px;
```

Formatting Colors & Backgrounds

- **Colors**
 - Used to set the color of the foreground element (Text)
- **Color Values**
 - Named Colors
 - Hex Colors
 - RGB and RGBa
 - HSL and HSLa

-
- **Named Colors**
 - **Keyword colors eg, aqua, red, black, etc..**

 - **Hex Colors**
 - **Alpha numeric value of 6 digit each pair representing a color**

- **RGB and RGBa**
 - Three values are given in the range of 0-255.
RGBa uses alpha value to set transparency

- **HSL and HSLa**
 - Three values are given
 - Hue: 0-360
 - Saturation: 0% - 100%
 - Lightness: 0% - 100%
 - HSLa uses alpha to add opacity

Unit 2

Section 2.3

Topics

Formatting Text and Fonts

Formatting Colors and Background

Web Programming

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Topics

- **CSS Class and ID Attributes**
- **Dynamic effects with CSS**

CSS Class and ID Attributes

- **Class Attribute Selector**
- **ID Attribute Selector**

Class Attribute

- Used to select all the elements with a matching class attribute
- Class attribute is added to the element
- Starts with dot(.)

```
.<class>{
```

```
}
```

- **Naming Rule**
 - **Begin with a letter A-Z or a-z**
 - **Followed by letters(A_za-z), digits(0-9) hyphens(-) and underscore(_)**
- **Multiple class can be used on one element**

ID Attribute

- Used to select all the elements with a matching HTML id attribute

- Starts with hash(#)

```
#<idname>{
```

```
}
```

-
- **Naming Rule**
 - **Begin with a letter A-Z or a-z**
 - **Followed by letters(A_za-z), digits(0-9) hyphens(-) and underscore(_)**
 - **It is a powerful selector override all the other selectors**

Class	ID
. Symbol used	# Symbol used
Multiple class for an element	Only one ID for an element
Multiple usage in single page	ID is unique in a page

Dynamic effects with CSS

- **Allows us to animate HTML elements when users interact**
- **Implemented using**
 - **Pseudo-classes**
 - **Transitions**

Pseudo-Classes

- **Defines a special state of an element.**
- **States**
 - **Mouse over an element**
 - **Element gets focus**

- **Important Pseudo Classes**

- hover
- focus

- **Syntax**

```
element:<pseudo-class> {  
    Property: Value;  
}
```

Unit 2

Section 2.4

Topics

CSS Class and ID Attributes

Dynamic effects with CSS

Pseudo-classes

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Topics

- **Dynamic effects with CSS**
 - Pseudo-classes
 - Transitions
- **CSS List, Tables & Forms**

Transitions

- This enables us to change the property value smoothly over a given time.
- Properties
 - transition-delay
 - transition-duration
 - transition-property
 - transition-timing-function
 - transition

- **transition-delay**
 - Define length of time to delay the start of transition
- **transition-duration**
 - Define length of time to perform transition
- **transition-property**
 - Define the property the transition is to be applied
 - Single property name
 - Property name list comma separated
 - Keywords (none or all)

- **transition-timing-function**
 - Define the function that describe how a transition will proceed for the given duration
 - Easing functions
 - ease, ease-in, ease-out
 - linear
- **transition**
 - Shorthand notation for transition property
transition: [prop], [dur], [fun], [delay];

CSS List

- **Various CSS properties are used to control the list**
- **List properties**
 - **list-style-type**
 - **list-style-position**
 - **list-style-image**

- **list-style-type**
 - Specify type of list-item marker

Keyword values

- **disc**
- **circle**
- **decimal**
- **lower-latin/upper-latin**
- **lower-alpha/upper-alpha**

-
- **list-style-position**
 - Define the position to place the list marker
 - Two values: inside/outside
 - **list-style-image**
 - Specify an image as list marker

CSS Table

- **Special properties used for displaying table**
 - **border: <size> <style> <color>;**
 - **border-collapse: <separate | collapse>;**
 - **hover :<pseudo-class>**
 - **display : table, table-row, table-cell**

CSS Forms

- **Styling form using CSS allows us to create interactive forms**
- **Attribute Selector**
 - `input[attribute=value]`
- **Padded Input**
 - `padding: <size>px;`

- **Bordered Inputs**
 - **border**
 - **border-radius**
- **Colored Inputs**
 - **background-color**
 - **color**
- **Focused Inputs**
 - **focus<pseudo class>**

- **Input with icon/image**
 - background-image
 - background-position
 - background-repeat
 - padding-left

- **Styling Input Button**
 - background-color
 - border
 - border-radius
 - hover, active <pseudo class>

Unit 2

Section 2.4

Topics

Dynamic effects with CSS

Transitions

CSS List, Tables & Forms