Unit 4
Page Layout and Navigation

By :Prof. Priya Patel
Assistant Professor
PICA

Creating and Formatting Tables

- For creating and formatting tables in web page we have to use <table> </table> tag.
- The HTML tables allow web authors to arrange data like text, images, links, other tables, etc. into rows and columns of cells.
- HTML tables are used to manage the layout of the page e.g. header section, navigation bar, body content, footer section etc. But it is recommended to use div tag over table to manage the layout of the page .
- Each table row is defined or insert with the **<tr>** tag.
- A table header is defined with the **<th>** tag. By default, table headings are bold and centered.
- A table data/cell is defined or insert with the **<td>** tag.

Attribute of table tag

<table [align="left/right"]
[valign="top/bottom/middle"]
[border="value"]
[background="url of image"]
[bgcolor="color name"]
[bordercolor="color name"]
[bordercolorlight="color name"]
[bordercolordark="color name"]
[cellpadding="value/value%"]
[cellspacing="value/value%"]
[height="value/value%"]
[width="value/value%"]
[title="informational tooltip"]>

....

</table>

**** you can apply for raw <tr> cell <td> also**

Align: left/right/center: This attribute controls whether text inside the table cell is aligned to the left , right or centered within the cell.

Valign: top/middle/bottom: the Valign attribute controls over whether the text inside the table cells is aligned to the top , bottom or vertically centered within the cell.

Cellpadding and Cellspacing Attributes

- There are two attributes called *cellpadding* and *cellspacing* which you will use to adjust the white space in your table cells.
- The cellspacing attribute defines space between table cells,
- while cellpadding represents the distance between cell borders and the content within a cell.

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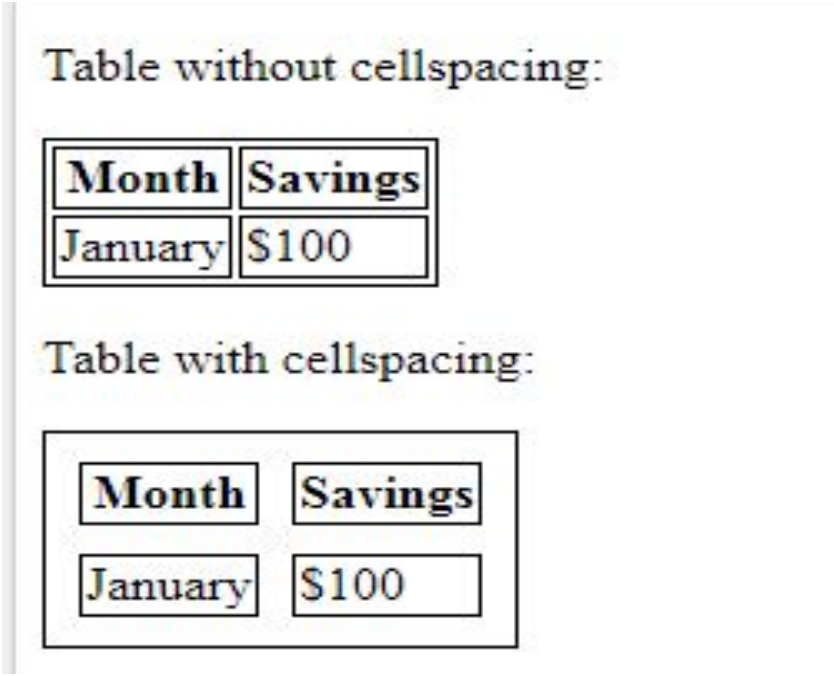
cellspacing

- Table with cellspacing:
- <table cellspacing="10">
- <tr>
- <th>Month</th>
- <th>Savings</th>
- </tr>
- <tr>
- <td>January</td>
- <td>$100</td>
- </tr>
- </table>



cellpadding

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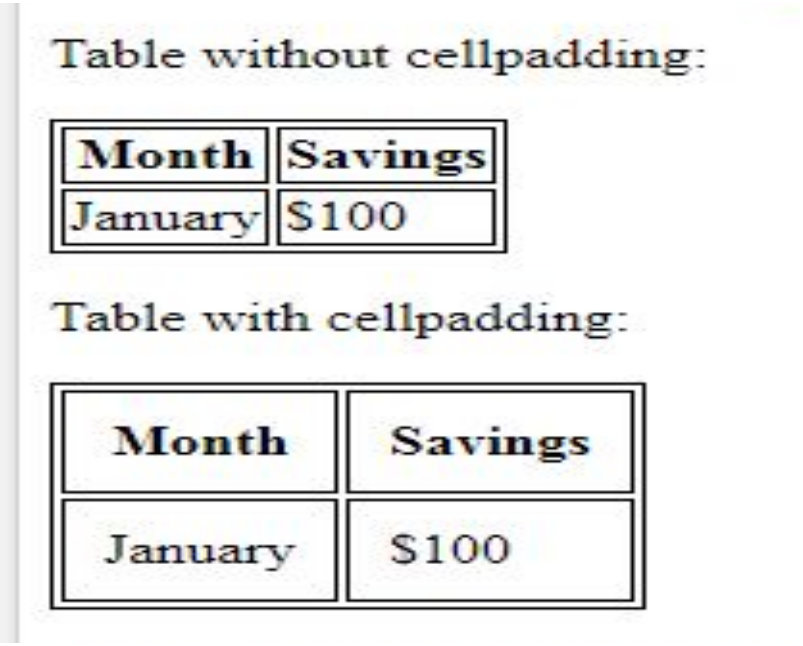
- </table>



Colspan and Rowspan Attributes

- You will use **colspan** attribute if you want to merge two or more columns into a single column. Similar way you will use **rowspan** if you want to merge two or more rows
- <td rowspan="2">$50</td>
- <td colspan="2">$50</td>

Tables Backgrounds

You can set table background using one of the following two ways −

- **bgcolor** attribute − You can set background color for whole table or just for one cell.
- **background** attribute − You can set background image for whole table or just for one cell.
- You can also set border color also using **bordercolor** attribute.

Table Height and Width

- You can set a table width and height using **width** and **height** attributes. You can specify table width or height in terms of pixels or in terms of percentage of available screen area.

Table Caption

- The **caption** tag will serve as a title or explanation for the table and it shows up at the top of the table.

Table Header, Body, and Footer

- **<thead>** − to create a separate table header.
- **<tbody>** − to indicate the main body of the table.
- **<tfoot>** − to create a separate table footer.

- A table may contain several <tbody> elements to indicate *different pages* or groups of data. But it is notable that <thead> and <tfoot> tags should appear before <tbody>

Nested Tables

- You can use one table inside another table. Not only tables you can use almost all the tags inside table data tag <td>.

Summery

- Use the HTML **<table>** element to define a table
- Use the HTML **<tr>** element to define a table row
- Use the HTML **<td>** element to define a table data
- Use the HTML **<th>** element to define a table heading
- Use the HTML **<caption>** element to define a table caption
- Use the CSS **border** property to define a border
- Use the CSS **border-collapse** property to collapse cell borders
- Use the CSS **padding** property to add padding to cells
- Use the CSS **text-align** property to align cell text
- Use the CSS **border-spacing** property to set the spacing between cells
- Use the **colspan** attribute to make a cell span many columns
- Use the **rowspan** attribute to make a cell span many rows
- Use the **id** attribute to uniquely define one table

You can also create and format table using CSS

- For that like other CSS write css for table tag and apply it.
- You can also format odd and even row and cell in table using CSS. For that please visit

Creating Division- Based Layouts

- The **HTML tag** is used *to group the large section of HTML elements together*.
- The tag defines a division or a section in an HTML document.
- The tag is used to group block-elements to format them with CSS.
- tag is just like a container unit which is used to encapsulate other page elements and divides the HTML documents into sections.

- The div tag is generally used by web developers to group HTML elements together and apply CSS styles to many elements at once. For example: If you wrap a set of paragraph elements into a div element so you can take the advantage of CSS styles and apply font style to all paragraphs at once instead of coding the same style for each paragraph element.
- The div tag is not more than a container for other tags. Here are some of the div's attributes:
  - **id**
  - **class**
  - **title**
  - **style**
  - **height**
  - **width**

Difference between HTML div tag and span tag

- **div tag**
- HTML div is a **block** element.
- HTML div element is used to **wrap large sections of elements**.

- **span tag**
- HTML span is an **inline** element
- HTML span element is used to **wrap small portion of texts, image**etc.

Creating Navigational Aids

What do you mean by navigation?

to move on, over, or through

- A navigation bar is a set of hyperlinks that connect to major pages of your websites.
- These hyperlinks can be either text-based or graphics.

Creating a text-based navigation bar

- A text-based navigation bar is the simplest and easiest.
- Text-based navigation bar is usually placed at the top of the page,in a single horizontal line.
- HTML5 includes <nav> tag, a two sided container tag in which you can optionally place the code for a navigation bar.

- <body>

- <nav>
- HTML
- CSS
- JavaScript
- jQuery
- </nav>

Creating User Forms

- An **HTML form** is *a section of a document* which contains controls such as text fields, password fields, checkboxes, radio buttons, submit button, menus etc.
- An HTML form facilitates the user to enter data that is to be sent to the server for processing.
- It always insert using <form> tag inside <body> tag.
- Each piece of information for a form is stored in a Field.

Why use HTML Form

- Do develop interactive webpage.
- HTML forms are required if you want to collect some data from of the site visitor.
- For example: If a user want to purchase some items on internet, he/she must fill the form such as shipping address and credit/debit card details so that item can be sent to the given address.

Parts of form

- Users enter or select a field using Form Control/ Elements.

- Form/Control elements include: buttons, checkboxes, text fields, radio buttons, drop-down menus, etc

- A form usually contains a Submit button to send the information in the form elements to the server

- TypeDescription
- <input type="text"> :Defines a one-line text input field
- <input type="radio"> :Defines a radio button (for selecting one of many choices)
- <input type="submit">Defines a submit button (for submitting the form)

- <form>
  <input type="radio" name="gender" value="male" checked> Male
- <input type="radio" name="gender" value="female"> Female
- <input type="radio" name="gender" value="other"> Other
  </form>

HTML Form Tags

Let's see the list of HTML 5 form tags.

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.
<label>	It defines a label for an input element.
<fieldset>	It groups the related element in a form.
<legend>	It defines a caption for a <fieldset> element.
<select>	It defines a drop-down list.
<optgroup>	It defines a group of related options in a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

Add html text field

- We can add it by using <input> tag inside <form> tag
- The type="text" attribute of input tag creates textfield control also known as single line textfield control.
- The name attribute is optional, but it is required for the server side component such as JSP, ASP, PHP etc.
- By default size is 20 character. You can increase its size by giving value in size attribute.
- Text field have other attributes like value, name, id, size etc…
- Text input fields will be empty when the page loads, unless you provide an initial text string for its **VALUE** option

Syntax:

```
<form>
Name : <input  type="text"  name="myname"/>
</form>
```

Password control

- exactly the same as text input elements, except that when the viewer types in, they see "bullet" characters rather then the letter they are typing. Password text is scrambled during transmission and then unscramble when the form data is received at the server end.
- Same as textfield by default size is 20 character.

Syntax : `<input type="password" name="pass1" size="30">`

Text Area

- Text fields that have more than one line and can scroll as the viewer enters more text. The tag options define the size of the field by the number of rows and character columns. By adding the option **WRAP=VIRTUAL**, the text entered will automatically wrap at the right hand side of the field. You can also include default text to appear in the field

- Creating drop down list
- To create a list start with a two sided <select> tag. Within it place each option in its own <option> tag.
- Place the text that you want to appear on the list between the opening and closing <option >tag.
- Color: <select name="colors" size ="1">
- <option> Red</option>
- <option>Green</option>
- <option> Blue</option>
- <option> Pink</option>
- </select>
-

- In this code the size attribute is set to 1, which create a drop down list.
- If you set the size attribute to a larger value , the element appear as a list box.
- If there are more item in the list than will fit in the viewing space, a scroll bar appears automatically at the right side of the box.

JAVA SCRIPT

- JavaScript is *an object-based scripting language* that is lightweight and cross-platform.
- JavaScript is not compiled but translated. The JavaScript Translator (embedded in browser) is responsible to translate the JavaScript code.

Definition : Javascript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

- JavaScript was first known as **LiveScript,** but Netscape changed its name to JavaScript. Invented in 1995.

Cont…

- The JavaScript client-side mechanism provides many advantages over traditional CGI(common gateway interface) server-side scripts. For example, you might use JavaScript to check if the user has entered a valid e-mail address in a form field.

- The JavaScript code is executed when the user submits the form, and only if all the entries are valid, they would be submitted to the Web Server.

- JavaScript can be used to trap user-initiated events such as button clicks, link navigation, and other actions that the user initiates explicitly or implicitly.

JavaScript can **calculate**, **manipulate** and **validate** data

Where JavaScript is used

- JavaScript is used to create interactive websites. It is mainly used for:
- Client-side validation
- Dynamic drop-down menus
- Displaying data and time
- Displaying popup windows and dialog boxes (like alert dialog box, confirm dialog box and prompt dialog box)
- Displaying clocks etc.

```
<h2>Welcome to JavaScript</h2>
<script>
      document.write("Hello JavaScript by JavaScript");
</script>
```

- You can add java script inside <script> </script> tag inside <head> or <body>, external JavaScript file.

- JavaScript can be implemented using JavaScript statements that are placed within the **<script>... </script>**.
- Syntax:

<script ...> JavaScript code </script>

- The script tag takes two important attributes –
- **Language** − This attribute specifies what scripting language you are using. Typically, its value will be javascript.
- **Type** − This attribute is what is now recommended to indicate the scripting language in use and its value should be set to "text/javascript“
- <script language="javascript" type="text/javascript"> JavaScript code </script>

Advantages of JavaScript

- **Less server interaction** − You can validate user input before sending the page off to the server.
- **Immediate feedback to the visitors** − They don't have to wait for a page reload.
- **Increased interactivity** − You can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.
- **Richer interfaces** − You can use JavaScript to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.

Limitations of JavaScript

- We cannot treat JavaScript as a full-fledged programming language. It lacks the following important features −
  - Client-side JavaScript does not allow the reading or writing of files. This has been kept for security reason.
  - JavaScript cannot be used for networking applications because there is no such support available.
  - JavaScript doesn't have any multithreading or multiprocessor capabilities.

Java script inside <head> tag.

```
<html>
<head>
<script type="text/javascript">
        function msg()  {
         alert("Hello fist java script program");
      }
</script>
</head>
<body>
<p>Welcome to JavaScript</p>
<form>
<input type="button" value="click" onclick="msg()"/>
</form>
</body>
</html>
```

Here when user press/ click on button one alert message will be display in browser. Here we click onlick event.

Comment in java script

```
<script language="javascript" type="text/javascript">
<!–
        // This is a comment. It is similar to comments in C++
      /* This is a multiline comment in JavaScript  It is very similar to comments
in C Programming */
//-->
 </script>
```

External javascript

- We can create external JavaScript file and embed it in many html page.
- It provides **code re usability** because single JavaScript file can be used in several html pages.
- An external JavaScript file must be saved by **.js** extension. It is recommended to embed all JavaScript files into a single file. It increases the speed of the webpage.

Example of external java script file

```
function msg(){
 alert("Hello Javatpoint");
}  //save this file with .js extenssion
```

Let's include the JavaScript file into html page. It calls the JavaScript function on button click.

```
<html>
<head>
<script type="text/javascript" src="message.js"></script>
</head>
<body>
<p>Welcome to JavaScript</p>
<form>
<input type="button" value="click" onclick="msg()"/>
</form>
</body>
</html>
```

Here message.js is external javascript file. It include inside html code using src

Variable in javascript

- is simply a name of storage location. There are two types of variables in JavaScript : local variable and global variable.
- There are some rules while declaring a JavaScript variable (also known as identifiers).
  - Name must start with a letter (a to z or A to Z), underscore(_), or dollar($) sign.
  - After first letter we can use digits (0 to 9), for example value1.
  - JavaScript variables are case sensitive, for example x and X are different v

```
<script>
var x = 10;
var y = 20;
var z=x+y;
document.write(z);
</script>
```

- **Local Variable** : if we declare any variable inside function or loop or conditional statement like if..else than it become local variable.

```
<script>
function abc(){
var x=10;//local variable
}
If(10<13){
var y=20;//JavaScript local variable
}
</script>
```

Global variable : A **JavaScript global variable** is accessible from any function. A variable i.e. declared outside the function or declared with window object is known as global variable.

```
<script>
var data=200;//gloabal variable
function a(){
document.writeln(data);
}
function b(){
document.writeln(data);
}
a();//calling JavaScript function
b();
</script>
```

JavaScript global variable within function

- To declare JavaScript global variables inside function, you need to use **window object**. For example:

  window.value=90;

- Access global variable of one function into another function.

```
function m(){
window.value=100;//declaring global variable by window object
}
function n(){
alert(window.value);//accessing global variable from other function
}
```

DOM (Document Object Model) ** important**

- The **document object** represents the whole html document.

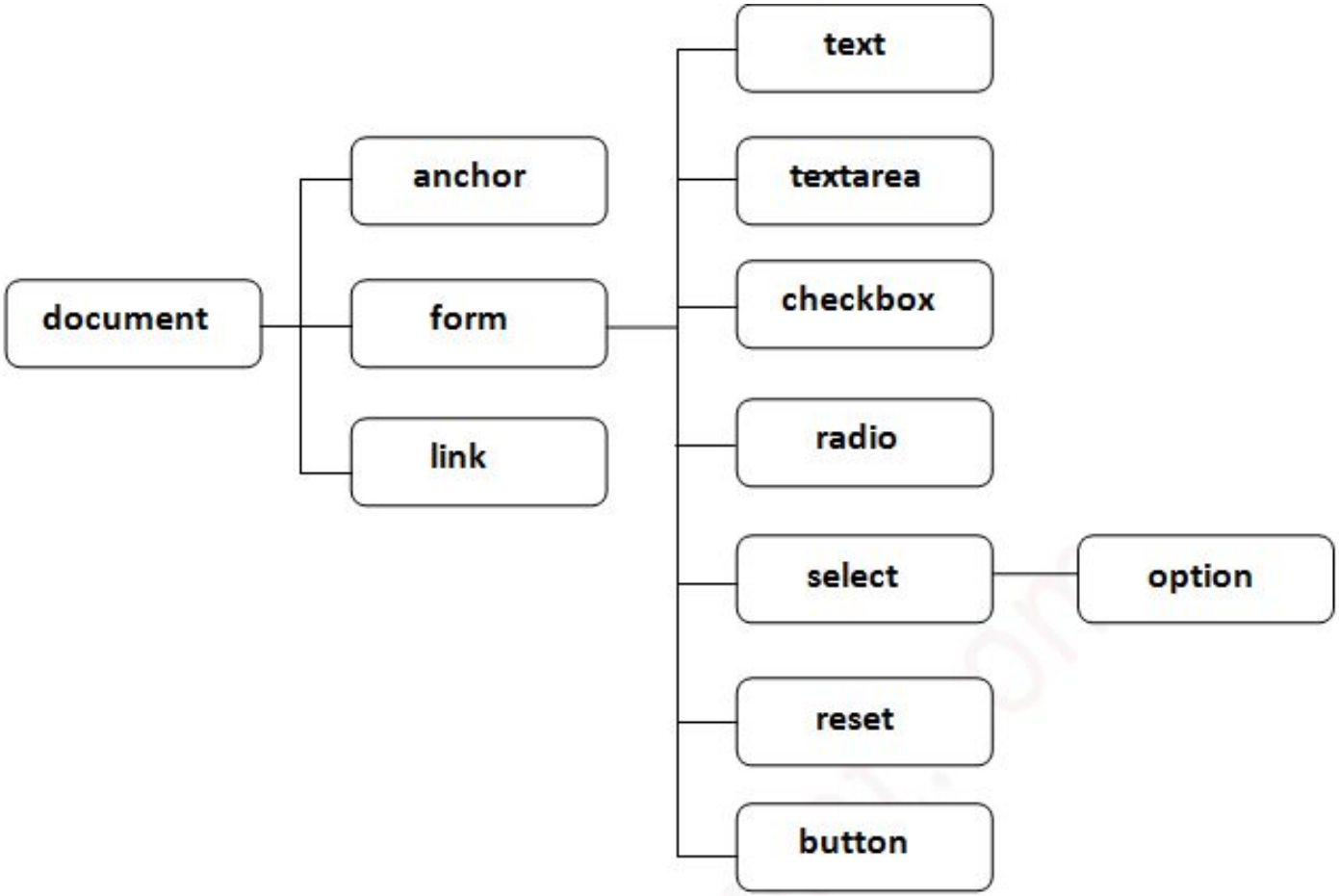
- html document is loaded in the browser, it becomes a document object. It is the **root element** that represents the html document. It has properties and methods. By the help of document object, we can add dynamic content to our web page.
- The way a document content is accessed and modified is called the **Document Object Model**, or **DOM**

We can access and change the contents of document by its methods.

Method	Description
write("string")	writes the given string on the doucment.
writeln("string")	writes the given string on the doucment with newline character at the end.
getElementById()	returns the element having the given id value.
getElementsByName()	returns all the elements having the given name value.
getElementsByTagName()	returns all the elements having the given tag name.
getElementsByClassName()	returns all the elements having the given class name.

Properties of document object

Let's see the properties of document object that can be accessed and modified by the document object.



Accessing value of form using java script

In this example, we are going to get the value of input text by user. Here, we are using **document.form1.name.value** to get the value of name field.

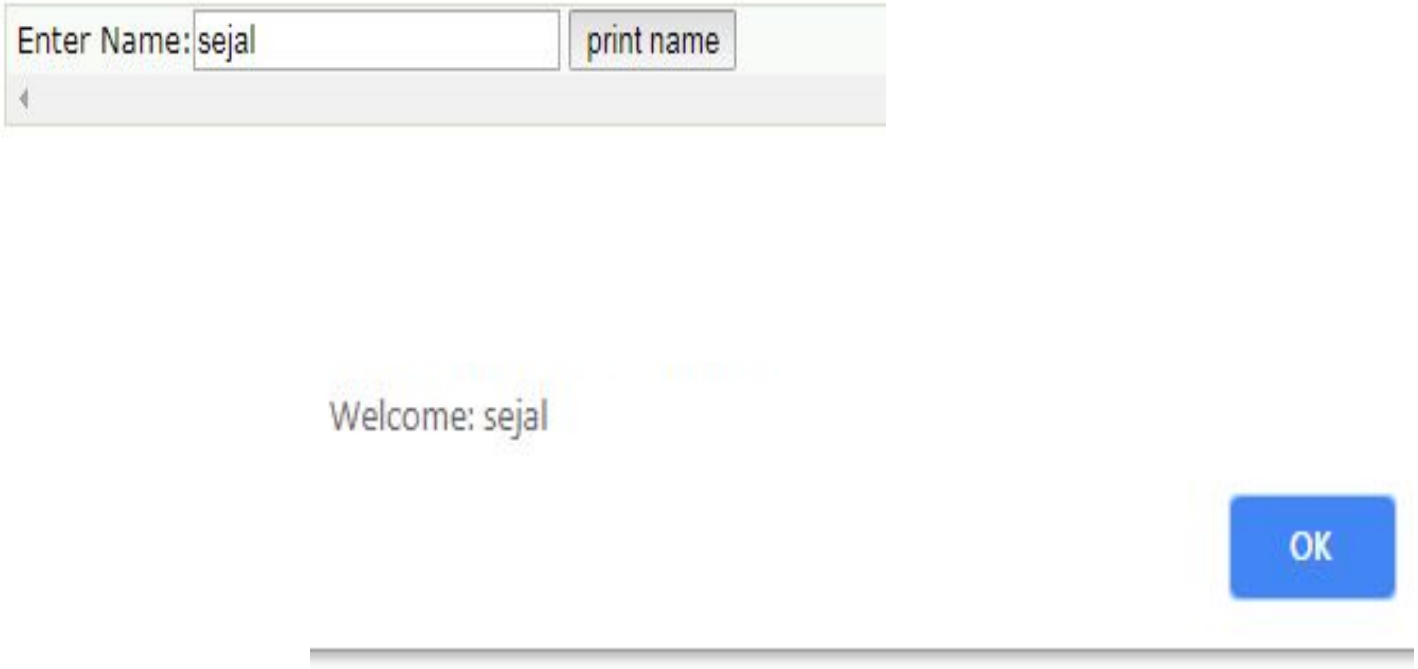
```
<script language =“javascript”  type="text/javascript">
function printvalue()
{
var name=document.form1.fname.value;
alert("Welcome: "+name);
}
</script>

<form name="form1">
Enter Name:<input type="text" name=“fname"/>
<input type="button" onclick="printvalue()"
value="print name"/>
</form>
```

Explanation of above example

- In this example, we are going to get the value of input text by user. Here, we are using **document.form1.name.value** to get the value of name field.
- Here, **document** is the root element that represents the html document.
- **form1** is the name of the form.
- **name** is the attribute name of the input text.
- **value** is the property, that returns the value of the input text

output

Output of the above example



document.getElementById() method

- we can use document.getElementById() method to get value of the input text. But we need to define id for the input field.

```
<script language =“javascript”  type="text/javascript">
function getcube()
{
var number=document.getElementById("number").value;
alert(number*number*number);
}
</script>
<form>
Enter No:<input type="text" id="number" name="number"/><br/>
<input type="button" value="cube" onclick="getcube()"/>
</form>
```

Output of the above example

getElementByName() Method

- The **document.getElementsByName()** method returns all the element of specified name.

```
<script type="text/javascript">
function totalelements()
{
var allgenders=document.getElementsByName("gender");
alert("Total Genders:"+allgenders.length);
}
</script>
<form>
Male:<input type="radio" name="gender" value="male">
Female:<input type="radio" name="gender" value="female">

<input type="button" onclick="totalelements()" value="Total Genders">
</form>
```

- For more about javascript please visit : https://www.javatpoint.com/javascript-tutorial

- More about Navigation
- https://www.w3schools.com/howto/howto_js_topnav.asp
- https://www.w3schools.com/tags/tag_nav.asp
- https://www.w3schools.com/howto/howto_css_menu_horizontal_scroll.asp
- For more about javascript please visit : https://www.javatpoint.com/javascript-tutorial

Thank You…