Jawaharlal Nehru Engineering College

Laboratory Manual

On

Introduction to Web Programming

For

Final Year Students CSE
Dept: Computer Science & Engineering

FOREWORD

It is my great pleasure to present this laboratory manual for second year engineering students for the subject of Introduction To Web Programming keeping in view the vast coverage required for understanding the concept of Hyper Text Markup Language(HTML) and JavaScript.

As a student, many of you may be wondering with some of the questions in your mind regarding the subject and exactly what has been tried is to answer through this manual.

As you may be aware that MGM has already been awarded with ISO 9000 certification and it is our endure to technically equip our students taking the advantage of the procedural aspects of ISO 9000 Certification.

Faculty members are also advised that covering these aspects in initial stage itself, will greatly relived them in future as much of the load will be taken care by the enthusiasm energies of the students once they are conceptually clear.

Dr. S.D.Deshmukh,

Principal

LABORATORY MANUAL CONTENTS

This manual is intended for the Second year students of Computer Science & Engineering in the subject of Introduction To Web Programming. This manual typically contains practical/Lab Sessions related HTML and Javascript covering various aspects related the subject to enhanced understanding.

Introduction To Web Programming provides students the idea of Design Webpages.It also helps to understands the concept of Javascript programming in designing a webpage

Students are advised to thoroughly go through this manual rather than only topics mentioned in the syllabus as practical aspects are the key to understanding and conceptual visualization of theoretical aspects covered in the books.
Good Luck for your Enjoyable Laboratory Sessions

Prof. D .S. Deshpande   M.K. Ugale

   HOD,CSE   Lecturer in CSE

SUBJECT INDEX

1. Design a home page which will display your information i.e. Bio data.

2. Create Hyperlinks in home page i.e educational details, Hobbies, Achievement, My Ideals etc.

3. Design a timetable and display it in tabular format.

4. Design a Registration form in HTML.

5. Design a webpage i.e. Biodata using CSS.

6. Design webpage using Frames,Framesets.

7. Embedding Javascripts in HTML pages.

8. Design a Biodata page whose content can be changed using JavaScript like events.

9. Design a Signup form with all validations.

DOs and DON'T DOs in Laboratory:

1. Make entry in the Log Book as soon as you enter the Laboratory.

2. All the students should sit according to their roll numbers starting from their left to right.

3. All the students are supposed to enter the terminal number in the log book.

4. Do not change the terminal on which you are working.

5. All the students are expected to get at least the algorithm of the program/concept to be implemented.

6. Strictly observe the instructions given by the teacher/Lab Instructor.

Instruction for Laboratory Teachers:

1. Submission related to whatever lab work has been completed should be done during the next lab session. The immediate arrangements for printouts related to submission on the day of practical assignments.

2. Students should be taught for taking the printouts under the observation of lab teacher.

3. The promptness of submission should be encouraged by way of marking and evaluation patterns that will benefit the sincere students.

Exercise No 1: (2 Hours) – 1 Practical

Aim: - Design a home page which will display your information i.e. Bio data.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

Standard Procedure for Creating and View an HTML document?
1. Use a text editor such as Notepad to write the document.
2. Save the file as filename.html on a PC. This is called the Document Source.
3. Open the file that you have saved in any browser Off-Line.
4. Your HTML page should now appear just like any other Web page in browser.
5. You may now switch back and forth between the Source and the HTML Document
   - switch to Notepad with the Document Source
   - make changes .
   - save the document again.
   - switch back to browser .
   - click on RELOAD and view the new HTML Document .
   - switch to Notepad with the Document Source.

THEORY:
1. What is HTML?
   - A series of tags that are integrated into a text document.
   - A series of tags that are integrated into a text document.
   - These look like: <code>formatted text</code>
     o <code> begins the formatting tag.
     o </code> ends the formatting tag.
   - These tags are then read by a Browser, which translates the tags into the formatting that they represent

2. What are Tags?
   - HTML tags are used to mark-up HTML elements.
   - HTML tags are surrounded by the two characters < and >.
   - The surrounding characters are called angle brackets .
   - HTML tags normally come in pairs like and .
   - The first tag in a pair is the start tag, the second tag is the end tag.
   - The text between the start and end tags is the element content .

- HTML tags are not case sensitive, <b> means the same as <B>.

3. Structure Tags In HTML

HTML Tag
<HTML></HTML>
These tags begin and end an HTML document.

HEAD Tag
<HEAD></HEAD>
These tags are in the beginning of the document. Important information is stored in- between these tags including: title, meta-data, styles, and programming scripts

TITLE Tag
<TITLE></TITLE>
These tags are in-between the HEAD tags and contain the text that appears in the title of the Web page.

BODY Tag
<BODY></BODY>
As you may have guessed, the BODY tags contain all the text in the body of the document.

4. Block Level tags

4.1 HTML Headings –
Headings are defined with the<h1> to<h6> tags.
Where <h1> -Defines the largest headings.
        <h6> -Defines the smallest headings.

4.2 HTML Paragraphs -
Paragraphs are defined with the<p> tag.

4.3 HTML Line Breaks -
Use the <br/> tag if you want a line break (a new line) without starting a new paragraph.

4.4 Horizontal Rule
The <hr> element is used for horizontal rules that act as dividers between sections

5. HTML Text Formatting Tags

Tag	Description
<b>	Defines bold Text
<big>	Defines big text.
<em>	Defines emphasized text
<i>	Defines Italic text
<small>	Defines italic text.
<strong>	Defines Strong text
<sub>	Defines subscripted text
<sup>	Defines superscripted text
<ins>	Defines inserted text
<del>	Defines deleted text

CONCLUSIONS:

In this way we can use different basic tags of HTML for creating webpage displaying personal information i.e. Biodata.

Exercise No 2: (2 Hours) – 1 Practical

Aim: - Create Hyperlinks in home page i.e. educational details, Hobbies, Achievement, My Ideals etc.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

STANDARD PROCEDURE:

- Step 1: Create **Educational_Details.html** page.
- Step 2: Create **Hobbies.html** page.
- Step 3: Create **Achievements.html** page.
- Step 4: Create **My_Ideals.html** page.
- Step 5: Create links of above four html pages in **Link.html** page.

THEORY:

HTML uses the <a> anchor tag to create a link to another document or web page.

The Anchor Tag and the Href Attribute
- An anchor can point to any resource on the Web: an HTML page, an image, a sound file, a movie, etc. The syntax of creating an anchor:
- Text to be displayed
- The <a> tag is used to create an anchor to link from, the href attribute is used to tell the address of the document or page we are linking to, and the words between the open and close of the anchor tag will be displayed as a hyperlink.

The Target Attribute
- With the target attribute, you can define **where** the linked document will be opened. By default, the link will open in the current window.
- The code below will open the document in a new browser window.
  Visit google!

Email Links

- To create an email link, you will use mailto: plus your email address. Here is a link to ACC's Help Desk:
  Email Help Desk

- To add a subject for the email message, you would add ?subject= after the email address. For example:
  Email Help Desk

CONCLUSIONS:

With the help of given procedure and information about the Links we can write HTML code for creating Hyperlinks in html page.

3. *Lab Exercise*

Exercise No 3: (2 Hours) – 1 Practical

Aim: - Design a timetable and display it in tabular format.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

THEORY:

HTML Tables:
- Tables are defined with the <table> tag.
- A table is divided into rows (with the <tr> tag),
- Each row is divided into data cells (with the <td> tag).
- td stands for "table data," and holds the content of a data cell.
- A <td> tag can contain text, links, images, lists, forms, other tables, etc.

HTML Tables and the Border Attribute
If you do not specify a border attribute, the table will be displayed without borders. Sometimes this can be useful, but most of the time, we want the borders to show.

To Create Table Header
```
<html>
<body>
<h4>Table headers:</h4>
<table border="1">
<tr>
<th>Name</th>
<th>Telephone</th>
<th>Telephone</th>
</tr>
<tr>
<td>Bill Gates</td>
<td>555 77 854</td>
<td>555 77 855</td>
</tr>
</table>
</body>
</html>
Output
```

Name	Telephone	Telephone
Bill Gates	555 77 854	555 77 855

How to add a caption to a table.

<caption>Monthly savings</caption>

Table Cells then spans more then one row/column
For Example-
```
<html>
<body>
<h4>Cell that spans two columns:</h4>
<table border="1">
<tr>
 <th>Name</th>
<th colspan="2">Telephone</th>
</tr>
<tr>
<td>Bill Gates</td>
 <td>555 77 854</td>
 <td>555 77 855</td>
</tr>
</table>
<h4>Cell that spans two rows:</h4>
<table border="1">
<tr>  <th>First Name:</th>
 <td>Bill Gates</td>
</tr>
<tr>
<th rowspan="2">Telephone:</th>
<td>555 77 854</td>
</tr>
<tr>
<td>555 77 855
</td>
</tr>
</table>
</body>
</html>
```

Output-

Cell that spans two columns:

Name	Telephone	
Bill Gates	555 77 854	555 77 855

Cell that spans two rows:

First Name:	Bill Gates
Telephone:	555 77 854
	555 77 855

CONCLUSIONS:

With the help of given information about the Table and Table tags we can design a time table in tabular format.

]

4. Lab Exercise

Aim: - Design a Registration form in HTML.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

THEORY:

- HTML Forms are used to select different kinds of user input.
- A form is an area that can contain form elements.
- Form Elements are elements that allow the user to enter information Like
   a. Text Fields
   b. Text area Fields
   c. drop-down Menus
   d. Radio buttons
   e. Checkboxes

   A Form is defined with <form> tag.

Input Tag

- The most used form tag is the <input> tag. The type of input is specified with the type attribute.

   For Creating Textbox: <input type="text">

   For Creating Password textbox: <input type=''password''>

   For Creating Radio button: <input type = "radio">

   For Creating Checkbox: <input type = "checkbox">

   For Creating Buttons: <input type ="button" value= "OK" />

   For Creating Reset Button: <input type ="reset" value= "Reset" />

   For Creating Submit Button: <input type ="Submit" value= "Submit" />

   Dropdown list:
   1.   SELECT tag - Defines the controls for selection of options and creates a dropdown list.
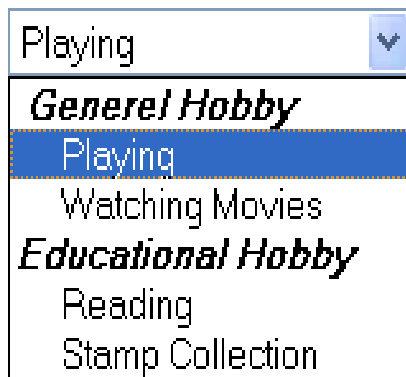
2. OPTION tag - Defines an options in a drop-down list , its most important attribute is the VALUE attribute that determines the value being sent to the server.

3. OPTGROUP tag - Allows you to group your choices in the form.

For Example-

```
 <form>
 <select >
<optgroup label = " Generel Hobby" >
<option value=  "playing" > Playing </option>
<option value = "watching movies" > Watching Movies </option>
</optgroup>
<optgroup label = "Educational Hobby">
<option value = "reading" > Reading </option>
<option value ="stamp collection" >Stamp Collection </option>
</optgroup>
</select>
</form>
```

Output-

1. SELECT tag - Defines the controls for selection of options and creates a dropdown list.
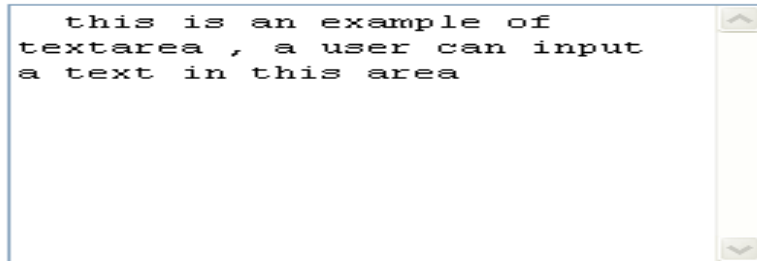
2. OPTION tag - Defines an options in a drop-down list , its most important attribute is the VALUE attribute that determines the value being sent to the server.

3. OPTGROUP tag - Allows you to group your choices in the form.

- **Textarea**:
  For Example-

```
<form>
 <textarea rows = "10" cols = "30" >
  this is an example of textarea , a user can input a text in this area
 </textarea>
</form>
```
Output-

```
   this is an example of
textarea , a user can input
a text in this area
```

CONCLUSIONS:

With the help of given information we can design a Registration form by suing form tag and attributes.

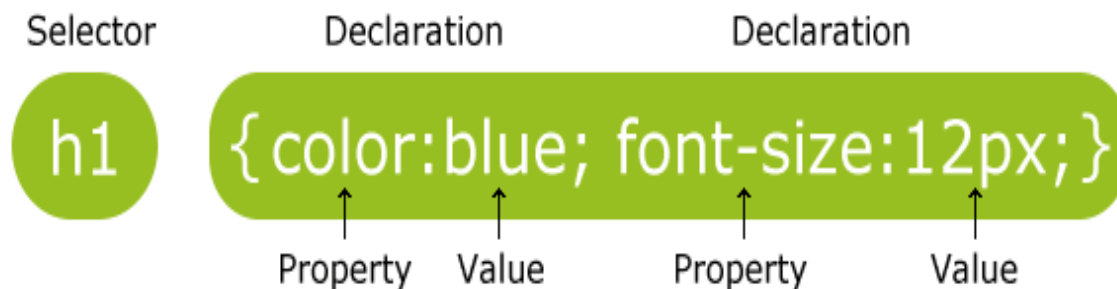### 5. Lab Exercise

Exercise No 5: (2 Hours) – 1 Practical

Aim: - Design a webpage i.e. Biodata using CSS.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

THEORY:

CSS Syntax

A CSS rule has two main parts: a selector, and one or more declarations:

Selector   Declaration   Declaration

h1 { color:blue; font-size:12px;}

Property   Value   Property   Value

The selector is normally the HTML element you want to style.

Each declaration consists of a property and a value.

The property is the style attribute you want to change. Each property has a value.

CSS Example

A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly brackets:

```
p {color:red;text-align:center;}
```

Types of CSS-
  1. Inline CSS
      Here "**Style"** Attribute is used.

For Example-
<body style=”background-color:red;”>

2. **Internal CSS**
   Here HTML tag <style> is used.
   For Example-
   <html>
   <head>
   <title>Example</title>
   <style type="text/css">
   body {background-color: #FF0000;}
    p {background-color: yellow;}
   </style>
   </head>
   <body>
   <p>This is a red page</p>
   </body>
   </html>

3. **External CSS**
   Here we need to create two separate file **.css** file and **.html** file.
   For Example-
   HTML file consisting of **"mystyle.css"**
   <html>
   <head>
   <link rel="stylesheet“ type="text/css" href="mystyle.css" />
   </head>
   <body>
   <p> paragraph</p>
   <hr>
   </body>
   </html>

   CSS Code- CSS files saved as "mystyle.css"
   <html>
   <head>

```
hr {color:sienna;}
p {margin-left:20px;}
body {background-image:url("images/Blue hills.jpg");}
</head>
</html>
```

CONCLUSIONS:

With the help of given information about CSS we can create webpage using css.

6. *Lab Exercise*

Exercise No 6: (2 Hours) – 1 Practical

Aim: - Design webpage displaying different subject information using Frames,Framesets.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

STANDARD PROCEDURE:

- Step 1: Create **subject1.html** page.
- Step 2: Create **subject2.html** page.
- Step 3: Create **subject3.html** page.
- Step 4: Create a page having multiple frames of above subjects.

THEORY:
- With Frames, you can display more than one HTML document in the same browser window.
- Each HTML document is called a frame.
- Each frame is independent of Each Other.

The Frameset Tag-
- The <frameset> tag defines how to divide the window into frames**.**
- Each Frameset Defines a set of rows or columns.
- The values of rows/columns indicate the amount of screen area each row/column will occupy.
- The frameset column size value can also be set in pixels (cols="200,500"),
- and one of the columns can be set to use the remaining space (cols="25%,*")

The Frame Tag-
   The <frame> tag defines what HTML document to put into each frame.

In the following example
- We have frameset with two columns.
- The first column is set to 25% of the width of the browser window.

- The second column is set to 75% of the width of the browser window.
- The HTML document "frame1.html" is put into first column and
- The HTML document "Frame2.html" is put into the second column.

```
<html>
<frameset cols = "40% , 60%">
<frame src = "frame1.html ">
<frame src = "frame2.html ">
</frameset>
 </html>
```

Noresize Attribute in Frame Tag-
- If a frame has visible borders, the user can resize it by dragging the border.

- To prevent a user from doing this, you can add noresize="noresize" to the <frame> tag.

Iframe Tag-
- Defines an inline sub window (frame).

For Example-
```
<html>
<iframe src="frame1.html"></iframe><br>
<iframe src="frame2.html"></iframe>
</html>
```

CONCLUSIONS:

With the help of given procedure and information about the Frame we design a webpage having multiple frames view for displaying subject information.

7. Lab Exercise

Exercise No 7: (2 Hours) – 1 Practical

<u>Aim: - Embedding Javascripts in HTML pages.</u>

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

THEORY:

Introduction to JavaScript

Variables in JavaScript

Declaring JavaScript variables

First, you need to declare your variables. You do this using the **var** keyword. You can declare one variable at a time or more than one. You can also assign values to the variables at the time you declare them.

```
// declaring one javascript variable
var firstName;

// declaring multiple javascript variables
var firstName, lastName;

// declaring and assigning one javascript variable
var firstName = 'Homer';

// declaring and assigning multiple javascript variables
var firstName = 'Homer', lastName = 'Simpson';
```

Types of Popup boxes-

JavaScript has three different types of popup box available for you to use. Here they are:

Alert-

Displays a message to the user.

For E.g.

alert("Hello this is alert!");

Output-

Confirm

Asks the user to confirm something. Often, this is in conjunction with another (potentially significant) action that the user is attempting to perform.

For E.g.

confirm('Hello this is confirm popup!');"

Output-

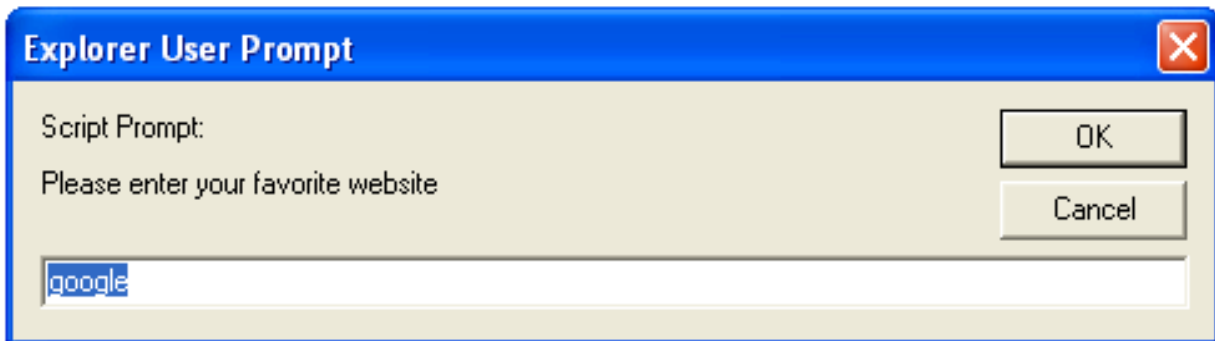**Prompt**

Prompts the user for information.

Example:

prompt ("Please enter your favorite website");

Output-

Functions in JavaScript-
In JavaScript, you will use functions a lot.

A function (also known as a *method*) is a self-contained piece of code that performs a particular "function". You can recognize a function by its format - it's a piece of descriptive text, followed by open and close brackets.

Program for Addition, Subtractions, Multiplication, Division-

CONCLUSIONS:

With the help of given procedure and information about the variables and function of javascripts,we can embed javascript in html pages.

8. _Lab Exercise_

Exercise No 8: (2 Hours) – 1 Practical

Aim: - Design a Biodata page whose content can be changed using JavaScript like events.

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

THEORY:

When you write JavaScript function, you will you will need to determine when it will run, Often this will be when a user does something like **click** or **hover** over something, **submit** a form, **double clicks** on something etc.

List of Event Handler

Event Handler	Event that it handles
onBlur	User has left the focus of the object. For example, they clicked away from a text field that was previously selected.
onChange	User has changed the object, then attempts to leave that field (i.e. clicks elsewhere).
onClick	User clicked on the object.
onDblClick	User clicked twice on the object.
onFocus	User brought the focus to the object (i.e. clicked on it/tabbed to it)
onKeydown	A key was pressed over an element.
onKeyup	A key was released over an element.
onKeypress	A key was pressed over an element then released.
onLoad	The object has loaded.
onMousedown	The cursor moved over the object and mouse/pointing device was pressed down.
onMouseup	The mouse/pointing device was released after being pressed down.
onMouseover	The cursor moved over the object (i.e. user hovers the mouse over the object).
onMousemove	The cursor moved while hovering over an object.
onMouseout	The cursor moved off the object
onReset	User has reset a form.
onSelect	User selected some or all of the contents of the object. For example, the user selected some text within a text field.
onSubmit	User submitted a form.
onUnload	User left the window (i.e. user closes the browser window).

CONCLUSIONS:

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With the help of given information about the use of Events, We can change the contents of html pages using JavaScript.

Exercise No 9: (2 Hours) – 1 Practical

<u>Aim: - Design a Signup form with all validations.</u>

Tools: Notepad Editor and Web Browser like Internet Explorer or Mozilla Firefox.

STANDARD PROCEDURE:

THEORY:

When you write JavaScript function, you will you will need to determine when it will run, Often this will be when a user does something like **submit** a form, Validation prompt should appears.

STANDARD PROCEDURE:

- Step 1: Design a signup form.
- Step 2: When user click on Submit/Button-Prompt should be displayed.

CONCLUSIONS:

With the help of given information about the use of Events and Functions , We can Design a Signup form with all validations