SAVITRIBAIPHULE PUNEUNIVERSITY

LABCOURSE III

Web Technologies I

Course Type: DSEC
(COURSECODE:CS-358)

T.Y.B.SC.(COMPUTERSCIENCE)

SEMESTER-I

Name____

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About The WorkBook

Objectives –

1. The scope of the course.

2. Bringing uniformity in the way course is conducted across different Colleges.

3. Continuous assessment of the students.

4. Providing ready references for students while working in the lab.

How to use this book?

This book is mandatory for the completion of the laboratory course. It is a

Measure of the performance of the student in the laboratory for the entire duration of the course.

Instructions to the students

1) Students should carry this book during practical sessions of Computer Science.

2) Students should maintain separate journal for the source code and outputs.

3) Students should read the topics mentioned in reading section of this Book before coming for practical.

4) Students should solve all exercises which are selected by Practical in-charge as a part of journal activity.

5) Students will be assessed for each exercise on a scale of 5

1	Note done	0
2	Incomplete	1
3	Late complete	2
4	Needs improvement	3
5	Complete	4
6	Well-done	5

Instructions to the practical in-charge

1. Explain the assignment and related concepts in around ten minutes using whiteboard if required or by demonstrating the software.
2. Choose appropriate problems to be solved by student.
3. After a student completes a specific set, the instructor has to verify the outputs and sign in the provided space after the activity.
4. Ensure that the students use good programming practices.
5. You should evaluate each assignment carried out by a student on a scale of 5 as specified above ticking appropriate box.
6. The value should also be entered on assignment completion page of respected lab course.

PHP Semester – 1

Assignment Completion Sheet

Sr. No.	**Assignment Name**	**Marks(out of 5)**	**Sign**
1	Assignment Using HTML and CSS		
2	Assignment Using Boot Strap		
3	Assignment Using Functions and Strings		
4	Assignment Using Arrays		
5	Assignment Using Files and DATABASE(PostgreSQL)		
	Total out of 25		
	Total out of 05		

Assignment 1: TO STUDY HTML, HTML5 & CSS

You should read following topics before starting this exercise

1. Internet and web
2. Web browsers and web servers
3. HTML tags

Internet and the Web

The internet is a collection of connected computers that communicate with each other. The Web is a collection of protocols (rules) and software's that support such communication.

In most situations when two computers communicate, one acts as a server and the other as a client, known as client-server configuration.

Browsers running on client machines request documents provided by servers. Browsers are so called because they allow the user to browse through the documents available on the webservers. A browser initiates the communication with a server, requesting for a document. The server that is continuously waiting for a request, locates the requested document and sends it to the browser, which displays it to the user.

The most common protocol on the web is Hyper Text Transfer protocol (HTTP)

The most commonly used browsers are Microsoft Internet Explorer (IE).Netscape browser and Mozilla. The most commonly used web servers are Apache and Microsoft Internet Information server (IIS).

HTML Basics

Hyper Text Markup Language is a simple markup language used to create platform-independent hypertext documents on the World Wide Web. Most hypertext documents on theweb are written in HTML.

You will need a simple text editor to write html codes. For example you can use notepad in windows and Vi editor in Linux operating system. You will need a browser to view thehtml code, you can use IE on windows and Mozilla on Linux operating system.

HTML tags are somewhat like commands in programming languages. Tags are not themselvesdisplayed, but tell the browser how to display the document's contents.

Every HTML tag is made up of a tag *name*, sometimes followed by an optional list of attributes, all of which appears between angle brackets < >. Nothing within the brackets will bedisplayed in the browser. The tag name is generally an abbreviation of the tag's function.

Attributes are properties that extend or refine the tag’s function. The name and attributes within a tag are not case sensitive. Tag attributes, if any, belong after the tag name, each separated by one or more spaces. Their order of appearance is not important. Most attributestake *values*, which follow an equal sign (=) after the attribute’s name. Values are limited to 1024 characters in length and may be case sensitive. Sometimesthe value needs to appear in quotation marks (double or single).

Most HTML tags are containers, meaning they have a beginning start tag and an end tag. Anend tag contains the same name as the start tag, but it is preceded by a slash (/). Few tags do not have end tags.

HTML5

HTML5 will be the new standard for HTML.

HTML5 is still a work in progress. However, the major browsers support many of the new HTML5 elements and APIs.

HTML5 - New Features

New features of HTML5 are based on HTML, CSS, DOM, and JavaScript. To better handle today's internet use, HTML5 also includes new elements for drawing graphics, adding media content, better page structure, better form handling, and several APIs to drag/drop elements, find Geolocation, include web storage, application cache, web workers, etc. Some of the most interesting new features in HTML5 are:

- The <canvas> element for 2D drawing
- The <video> and <audio> elements for media playback
- Support for local storage
- New content-specific elements, like <article>, <footer>, <header>, <nav>, <section>
- New form controls, like calendar, date, time, email, url, search

Browser Support forHTML5

The latest versions of Apple Safari, Google Chrome, Mozilla Firefox, and Opera all support many HTML5 features and Internet Explorer 9.0 will also have support for some HTML5 functionality.

The mobile web browsers that come pre-installed on iPhones, iPads, and Android phones all have excellent support for HTML5.

The HTML5 <!DOCTYPE>

In HTML5 there is only one <!doctype> declaration, and it is very simple:

```
<!DOCTYPE html>
```

The <!DOCTYPE> declaration helps the browser to display a web page correctly. There are many different documents on the web, and a browser can only display an HTML page 100%correctly if it knows the HTML type and version used.

Header and Footer:

The <header> tag specifies a header for a document or section. The <header> element shouldbe used as a container for introductory content or set of navigational links.You can have several <header> elements in one document.

Note: A <header> tag cannot be placed within a <footer>, <address> or another <header>element.

The <footer> tag defines a footer for a document or section. A <footer> element should contain information about its containing element. A footer typically contains the author of thedocument, copyright information, links to terms of use, contact information, etc.

You can have several <footer> elements in one document.

Some HTML tags required to design simple web pages are given below

Tag	Description
<!DOCTYPE>	Defines the document type
<!--...-->	Allows one to insert a line of browser-invisible comments In the document
<HTML> </HTML>	<HTML>tagtellsthebrowserthatthisisstartoftheHTMLand</HTML>marksits end.
<HEAD> </HEAD>	Every html page must have a header. < Head> tag defines the Head Segment of an html document
<TITLE> </TITLE>	One of the most important parts of a header is title. Title is the small text that appears in title bar of viewer's browser.
<BODY> </BODY>	Every web page needs a body in which one can enter web page content
<BR>	A single tag used to break lines
<p>	A single tag used to break text. Breaking text with the<p>tag adds vertical spacing
<B></B>	To make text appear bold
<U></U>	To make text appear underlined
<I></I>	To make text appear italic

<CENTER> </CENTER>	Centers enclosed text
<BIG></BIG>	Sets the type one font size larger than the surrounding text
<SMALL> </SMALL>	Sets the type one font size smaller than the surrounding text
<SUB></SUB>	Formats enclosed text as subscript.
<SUP></SUP>	Formats enclosed text as superscript.
<MARQUEE> </MARQUEE>	Creates a scrolling-text marquee area.
<IMG>	Loads an inline image
<Header>	The <header> tag specifies a header for a document or section. The <header> element should be used as a container for introductory content or set of navigational links. You can have several <header>elements in one document. Note:A<header> tag cannot be placed within a <footer>, <address>or another <header>element
<footer>	The<footer>tag defines footer for a document or section. A<footer>element should contain information about its containing element. A footer typically contains the author of the document,copy right information, links to terms of use, contact information, etc. You can have several<footer>elements in one document.

An HTML document is divided into two major portions: the head and the body. The head contains information about the document, such as its title and “meta” information describingthe contents. The body contains the actual contents of the document (the part that is displayed in the browser window).

A sample HTML document is given below

```
<!---MyfirstProgramme--!>
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

A sample HTML5 document is given below

```
<!—Starting my first web page assignment--!>

<!DOCTYPE html>

<HTML>

<HEAD>

<TITLE>MyWebpage</TITLE>

</HEAD>

<BODY BACKGROUND=”myimage.jpg”text=”#FF0000”>

The<FONTsize=6>Fontsize</FONT>canbechanged<Br>aswellas<FONTcolor=”#00
```

Example of All basic HTML Tags

```
<!DOCTYPE html>

<html>
<body>
<b>Bold Text</b><br>
<i>Italic Text</i><br>
<sup>superscripted Text</sup><br>
<sub>subscripted Text</sub><br>
<big> Big Text><br>
<strong> String Text</strong><br>
<u>Underlined Text</u>
<font face="Arial" size="10" color="blue">Formatted Text</font>
</body></html>
```

Lists: Lists are a great way to provide information in a structured and easy to read format.

There are two types of lists:

1] Numbered List(Ordered List)

An ordered list is used when sequence of list items is important.

2] Bulleted List(Unordered List)

An unordered list is a collection of related items that have no special order or sequence.

Tags used to create lists are given in the following table.

Tag	Description	Attributes	Example
<LI>	Specify the list item.		

</OL>	The<OL>tag formats the contents of an ordered list with numbers. The numbering starts at 1.It is incremented by one for each successive ordered list item tagged with <LI>	Type=a/A/i/I/1
		Sets the numbering style to a,A,i,I,1default1
		start=“A”
		Specifies the number or letter with which the list should start.
			<!DOCTYPEhtml>
			<html>
			<body bgcolor="pink">
			<font face="Arial” size="6"color="green" >
			<u>
			List of Cities....
			</u>
			</font>
			<ol type="A" start="A">
			<li>Mumbai
			<li>Pune
			<li>Nashik
			<li>Nagpur
			</ol>
			</body>
			</html>

<UL> </UL>	<UL> tag defines the unordered list of items	Type = disc/square/circle Specifies the bullet type.	<!DOCTYPEhtml> <html> <body bg color= "sky blue" text=”yellow”> <font face="Arial” size="6" color="orange"> <i><u><b> List of Fruits </i></u></b> <ul type="square"> <li>Apple <li>Pinapple <li>Mango <li>Guava </ul> </body> </html>

Tables: A table is a two dimensional matrix, consisting of rows and columns. HTML tables are intended for displaying data in columns on a web page. Tables contains information such as text, images, forms, hyperlinks etc.

Tags used to create table are given in the following table.

Tag	Description	Attributes
<TABLE> </TABLE>	Create a Table	Border=number Draws an outline around the table rows and cells of width equal to number. By default table have no borders number =0.Width=number Defines width of the table. Cell spacing=number Sets the amount of cell space between table cells. Default value is 2 Cell padding=number Sets the amount of cell space, in number of pixels between the cell border and its contents. Default is 2 Bgcolor=" #rrggbb" sets background color of the table Bordercolor=" #rrggbb" sets border color of the table align=left|right|center Aligns the table. The default alignment is left frame=void|above|below|hsides|lhs|rhs|vsides|box|border Tells the browser where to draw borders around the table
<TR> </TR>	Creates a row in the table	
<TH> </TH>	Cells are inserted in a row of the table for heading	
<TD> </TD>	Data cells are inserted in a row of The table	

A sample HTML document for creating table is given below

```
<!DOCTYPEhtml>

<html>

<head>

</head>

<body>

<table border=2cellspacing=4cellpadding=4 border color dark="red" border color light="blue" align="center">

<caption>List of Books</caption>

<tr>

<th row span=2align="center">ItemNo</th>

<th row span=2align="center">ItemName</th>

<th align="center"colspan=2>Price</th>

</tr>

<tr>

<th align="center">Rs.</th>

<th align="center">Paise</th>

</tr>
```

Frames : Using frames, one can divide the screen into multiple scrolling sections, each of which can display a different web page in to it. It allows multiple HTML documents to be seen concurrently

Inline frames: It is a new frame tag introduced in HTML5. It is having same properties and attribute options as in<FRAME>tag. An<iframe>tag is used to display a web page within a web page. Inline frames can be included within the text block in HTML5 document.

Syntax of inline frame is:

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

Tags used to add frames are given in the following table

Tag	Description	Attributes	Example
<FRAMESET> </FRAMESET >	Splits browser screen into frames. Frameset is deprecated in html5, but it still works!	Rows=number helps in dividing the browser screen into horizontal sections or frames. Cols=number divides the screen into vertical sections or frames. The number written in the rows and cols attribute can be given as absolute numbers or percentage value or an asterisk can be used to indicate the remaining space.	<frameset rows=“20%,30%,*”>
<FRAME> </FRAME>	used to define a single frame in a <frameset>	name=*text* Assigns a name to the frame. No resize Prevents users from resizing the frame. src=*url* Specifies the location of the initial HTML file to be displayed	<html> <frameset rows="50%, *"> <frameset cols="50%, *"> <frame src="success.html" name="frm1">
		By the frame . Border color=*”#rrggbb”* or *color name* Sets the color for frame’s borders	<frame src="welcome.html"> </frameset> <frame src="failure.html"> </frameset> </html>

<IFRAME> </IFRAME>	<iframe> Tag is used to specify an inline frame. An inline frame Allows you to embed another document within the current HTML document. The HTML5 Specification refers to this as a"nested browsing context".	Iframe Attribute Attribute Specifications to Adjust Appearance and Behavior ○ src="(URL of initial iframe content)" ○ name="(name of frame ,required for targeting)" ○ long desc="(link to long description)" ○ width=(frame width,% or pixels) ○ height=(frame height,%or pixels) ○ align=[top|middle|bottom|left| right|center](frame alignment, pick two, use comma) ○ frame border=[1|0](frame border, default is1) ○ margin width=(margin width, in pixels) ○ margin height=(margin height, in pixels) ○ scrolling=[yes|no|auto](ability to scroll)	1.<iframesrc="C:\DocumentsandSettings\Desktop\a7.html"width="150"height="150"></iframe> 2.<iframename="inlineframe"src="float.html"frameborder="0" scrolling="auto"width="500"height="180"marginwidth="5"marginheight="5" ></iframe>

What is CSS?

CSS is an acronym for Cascading Style Sheets.CSS is a style language that defines layout ofHTML documents. For example, CSS covers fonts, colours, margins, lines, height, width, background images, advanced positions and many other things. Just wait and see!

HTML can be (mis-)used to add layout to websites. But CSS offers more options and is moreaccurate and sophisticated. CSS is supported by all browsers today.

Difference between CSS and HTML:

HTML is used to structure content. CSS is used for formatting structured content. The language HTML was only used to add structure to text. An author could mark his text by stating "this is a headline" or "this is a paragraph" using HTML tags such as <h1> and <p>.

As the Web gained popularity, designers started looking for possibilities to add layout to onlinedocuments. To meet this demand, the browser producers (at that time Netscape and Microsoft) invented new HTML tags such as for example <font> which differed from the original HTML tags by defining layout - and not structure.

This also led to a situation where original structure tags such as <table> were increasingly being misused to layout pages instead of adding structure to text. Many new layout tags such as <blink> were only supported by one type of browser. "You need browser X to view this page" became a common disclaimer on web sites. CSS was invented to remedy this situation by providing web designers with sophisticated layout opportunities supported by all browsers.At the same time, separation of the presentation style of documents from the content of documents, makes site maintenance a lot easier.

Advantages of CSS: CSS was a revolution in the world of web design. The concrete benefitsof CSS include:

- control layout of many documents from one single style sheet;
- more precise control of layout;
- Apply different layout to different media-types (screen, print, etc.);
- Numerous advanced and sophisticated techniques.

How does CSS work?

In this assignment you will learn how to make your first style sheet. You will get to know about the basic CSS model and which codes are necessary to use CSS in an HTML document.

Many of the properties used in Cascading Style Sheets (CSS) are similar to those of HTML.Thus, if you are used to use HTML for layout, you will most likely recognize many of the codes. Let us look at a concrete example.

The basic CSS syntax

Let's say we want a nice red color as the background of a

webpage:Using HTML we could have done it like this:

```
<body bgcolor="#FF0000">
```

With CSS the same result can be achieved like this:

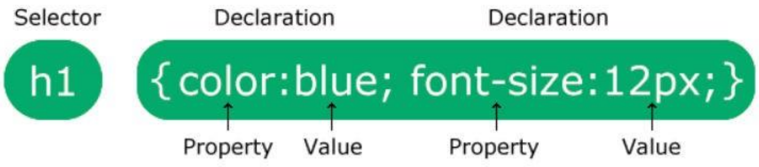
```
body {background-color: #FF0000;}
```

With CSS the same result can be achieved like this:

```
body{background-color:#FF0000;}
```

As you will note, the codes are more or less identical for HTML and CSS. The above examplealso shows you the fundamental CSS model:

rule=selector + declaration



But where do you put the CSS code? This is exactly what we will go over now.

Applying CSS to an HTML document

There are three ways you can apply CSS to an HTML

document.These methods are all outlined below.

1. In-Line Method(the attribute style).
2. Internal Method(the tag style).
3. External Method(link to a style sheet).

Method 1: In-line (the attribute style)

One way to apply CSS to HTML is by using the HTML attribute `style`. Building on the aboveexample with the red background color, it can be applied like this:

:

```
<html>
 <head>
       <title>Example</title>
 </head>
 <body style="background-color:#FF0000;">

       <p>This is a red page</p>
 </body>
</html>
```

Method 2: Internal (the tag style)

Another way is to include the CSS codes using the HTML tag `<style>`. For example like this:

```
<html>
 <head>
       <title>Example</title>
       <style type="text/css">

        {background-color:#FF0000;}

       </style>
```

```
        </head>
        <body>
             <p>This is a red page</p>
        </body>
       </html>
```

Samplecode1:

```
<!DOCTYPEhtml>

<html>

<head>

<style>bod
y

{

background-color:#d0e4fe;

}

h1

{

color:orange;
text align:center;

}

p

{

font-
family:"TimesNewRoman";font
-size:20px;

}

</style>

</head>

<body>

<h1>CSSexample!</h1>
```

```
<p>This is a paragraph.</p>

</body>

</html>
```

Method 3

External style sheets are separate files full of CSS instructions (with the file extension .css). When any web page includes an external style sheet, its look and feel will be controlled by this CSS file (unless you decide to override a style using one of these next two types). This is how you change a whole website at once. And that's perfect if you want to keep up with the latest fashion in web pages without rewriting every page!

Sample program of External Style:

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body></html>
```

Code for mystyle.css

```
body {
background-color: light blue;
}
 h1 {
color: navy; margin-left: 20px;
}
```

Creation of forms

You should read following topics before starting this exercise

1. Forms and different types of Input element details

Forms: HTML5 provides better & more extensive support for collecting user inputs throughforms. A form can be placed anywhere inside the body of an HTML document.

You can have more than one form in the document.

Tags used to add input forms are given in the following table.

Tag	Description	Attributes	Example
<FORM> </FORM>	Creates a form	action="URL" Gives the URL of the application that is to receive & process the forms data. method="get" or "post" Sets the method by which the browser sends the forms data to the server for processing.	<!doctype html> <head>.. </head> <body> <form action="url" method="post/get"> </form> </body> </html>
<INPUT> </INPUT>	It is used for managing the input controls that will be Placed within the tag.	Name=text It is used to name the field. Maxlength=number The maximum number of input characters allowed in the input control. Size=number The width of the input control in pixels. type="(checkbox/hidden/radio /reset/submit/text/image)" value="default value (for text or hidden widget); Value to be submitted with the form(for a check box or radio button); Or label(for Reset or Submit buttons)" src="source file for an image",\ checked indicates that checkbox or radio button is checked align="(text top/abs middle /baseline/bottom,)"	<label for>enter your name</label> <input type="text" name="nm" width=20> <input type="radio" name="gender" value="male" checked>Male <input type="radio" name="gender" value="Female">Female <input type="check box" name="chess" value="chess">Chess <input type="checkbox" name="Poker" value="Poker">Poker

<SELECT> </SELECT>	Defines and displays a set of optional list items from which the user can select one or more items.	name="(name to be passed to the script as part of name/value pair)" rows="no. of rows" cols="(no. of cols.)"	 Age Between: <select name=”age” size=1> </select>
<TEXTAREA> </TEXTAREA>	Multi line text entry widget	name=name of data field size=#of item s to display multiple allows multiple selections	<textarea rows=10columns=40> </textarea>
<OPTION>	indicates a possible item within a select widget	selected=default selection value="data submitted if this option is selected"	<select name=”age” size=1> <option selected>21-30 <option>31-40 </select>

New input types in HTML5

HTML5 introduces 13 new input types. When viewed in a browser that doesn't support them, these input types fall back to text input.

Input types	Description	Attribute	Example
Label	Define a Label for <input>element		<form> <label for>enter your name</label> <input type=”text”></form>
Legend	Define a Caption for field set element	•	<form> <legend>create new acount</legend> </form>

Number	For numerical input	• value: The initial value. If omitted, the field is initially blank, but the internal value is not consistent across browsers. • step: How much to change the value when you click on the up or down arrows of the control. The default is 1. • min, max: The smallest And largest values that can be selected with the up/down arrows.	<input type="number "min="0" max="20"step="2" value="10"name="some-name"/>
Range	For numerical input, but unlike `number`, the actual is not important.	• value: The initial value. The default is half way between the min and the max. • step: How much to change the value when you click on the up or down arrows of the control. The default is1. • min, max: The smallest and largest values that can be selected. The default form in is 0, and the the default for max is100	<input type="range" name="some-name"/>
Date	For entering a date with no time zone.	• value: The initial value. The format is "yyyy-mm-dd". • step: The step size in days. The default is1. • min,max: The smallest and largest dates that can be selected, formatted as date strings of the form "yyyy-mm-dd".	<input type="date" name="some-name"/>

Time	For entering a time value with hour, minute, seconds, and fractional seconds, but no time zone.		<input type="time"/>
Datetime-local	For entering a date and Time with no time zone.		<input type="datetime-local"/>
Color	For choosing color through a	- value: The initial value. The intention is that if a browser pops up a color chooser, the initial	<input type="datetime-local"/>

	Color well control	Selection will match the current value.	
Email	For entering a single mail address or a list of email addresses.	• value: The initial value(a legal email address). • list: The id of a separate" data list" element that defines a list of email addresses for the user to choose among	<input type="email" name="some-name"/> <input type="email" list="email-choices" name="some-name"/> <datalist id="email-choices"> <option label="Marty Hall" value="hall@coreservlets.com"> <option label="Somebody Else" value= "someone@example.com"> <option label="ThirdPerson" value="other@example.com"> ... </data list>
URL	For entering a single URL.	• value: The initial value, as an absolute URL. • list: The id of a separate "data list" element that defines a list of URLs for the user to choose among.	<input type="url" name="some-name"/> <input type="url" list="url-choices "name="some-name"/> <data list id="url-choices"> </datalist>
Tel	For entering A telephone number.	• value: The initial value as a phone number	<input type="tel" name="some-name"/>

Placeholder	Gives the user a hint about what sort of data they should enter.	• Place holder: A small hint. This differs from the "value" attribute in two ways. First, it will usually be rendered differently (e.g., light gray). Second, it will automatically disappear when you click in the text field. • value: The initial value. If you have *both* placeholder and value,	Input type="text*(or other)*"placeholder="some text" name="some-name"/>

		The value wins, and place holder is ignored.	
`Autofocus`	Focuses the input on the element when the Page is loaded.	- value: The initial value TRUE/FALSE	<input id="last name" type="text" autofocus="true"
`autocomplete`	For specifying that a field should not autocomplete or be pre-filled by the browser based on a user's past entries.	- value: The initial value ON/OFF	<input id="password confirmation" type="password" name="Password confirmation" autocomplete="off">
List/data list	Represents a set of `Option` elements that can be used in combination with the new `list` attribute for input to make dropdown menus.	- list: The id of a separate "data list" element that defines a list of choices for the user to choose among. - The option element(inside "data list") - label: Extra information that may be displayed in the autocomplete list. Browsers might show this label or a combination of the label and the value. The label is never part of the value that is inserted in to the text field when the entry is selected. - value: The value that should be inserted into the text field when the entry is selected.	<input type="text *(or other)*"list="some-id" name="some-name"/> <data list id="email-choices"> <option label="Display Val1 "value="InsertVal1"> <option label="Display Val2"value="InsertVal2"> <option label="Display Val3"value="InsertVal3"> ... </datalist>

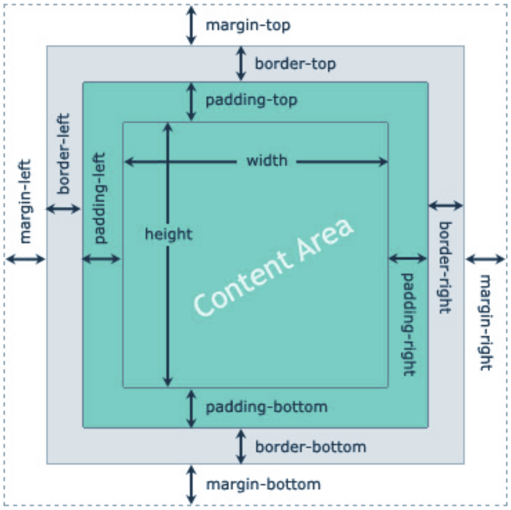
Try this Code

```
<!DOCTYPE html>
<html>
<body>
<form>
<h3>Registration Form</h3>
Enter your Name <input type="text" name="t1">
Your Email Address<input  type="email" name="t2">
Your Phone Number<input  type="text" name="t3">
Your City
<select name=t4>
<option>Nashik</option>
<option>Pune</option>
<option> Mumbai</option>
</select>
Gender
Male <input type=radio name=r1>
Female<input type=radio name=r1>
<input type=submit value="display">
</form>
</body>
</html>
```

BOX Model in CSS

Every element that can be displayed on a web page is comprised of one or more rectangular boxes. CSS box model typically describes how these rectangular boxes are laid out on a web page. These boxes can have different properties and can interact with each other in different ways, but every box has a ***content area*** and optional surrounding ***padding***, ***border***, and ***margin areas***.

The following diagram demonstrates how the width, height, padding, border, and margin CSS properties determines how much space an element can take on a web page.



The specific area that an element box may occupy on a web page is measured as follows-

Size of the box	Properties of CSS
Height	height + padding-top + padding-bottom + border-top + border-bottom + margin-top + margin-bottom
Width	width + padding-left + padding-right + border-left + border-right + margin-left + margin-right

example

```
div {
  width: 300px;
  border: 15px solid green;
  padding: 50px;
  margin: 20px;
}
```

CSS Navigation Bar

A Navigation bar or navigation system comes under GUI that helps the visitors in accessing information. It is the UI element on a webpage that includes links for the other sections of the website.

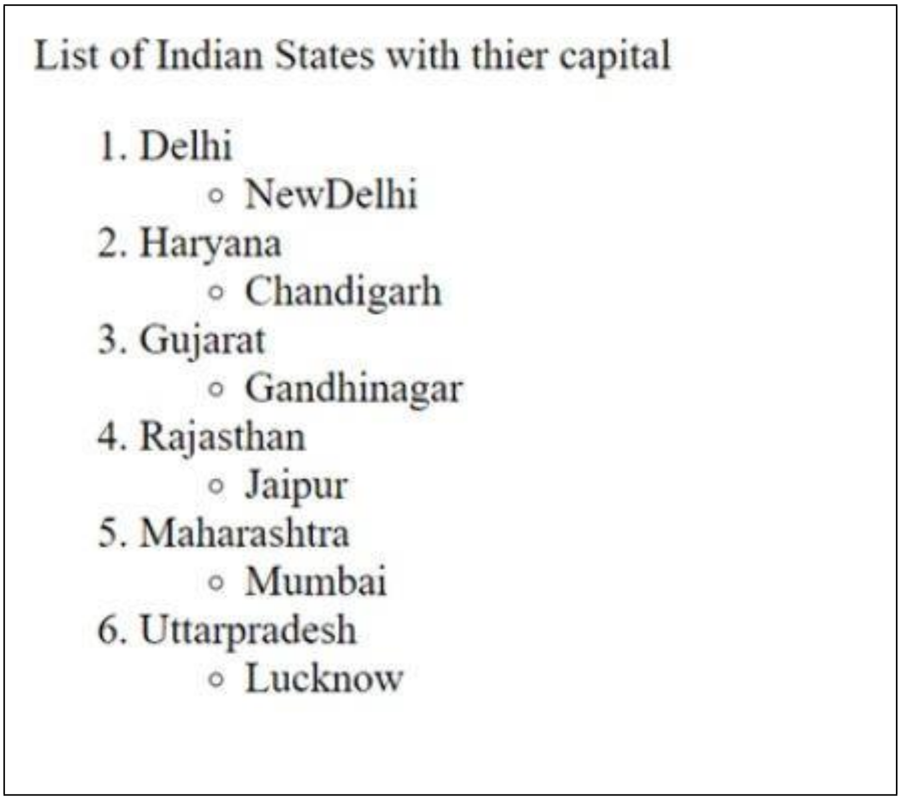
A navigation bar is mostly displayed on the top of the page in the form of a horizontal list of links.

```
<html>
<head>
<style>
#ul-nb {
list-style: none;
margin:2px;
padding:3px;
}
#ul-nb li {
float:left;
padding:10px;
background:orange;
text-align: center;
margin-left:5px;
}
#ul-nbli:hover {
background:red;
opacity:0.8;
color:white;
}
</style>
</head>
```

```
<body>
<ul id="ul-nb">
<li><a href="#">Home</a></li>
<li><a href="#">About Us</a></li>
<li><a href="#">Community</a></li>
<li><a href="#">Careers</a></li>
</ul>
</body>
</html>
```

Set-A

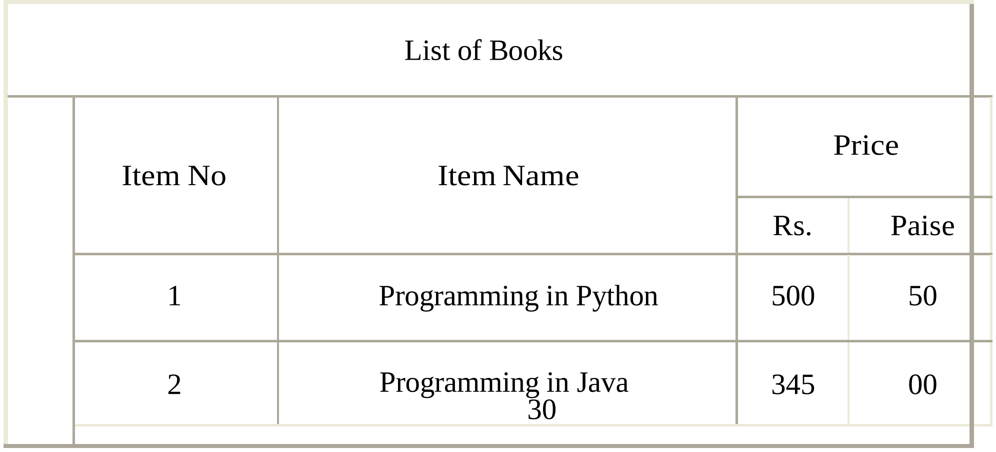
Q1) Create a HTML document to display the following screen.



List of Indian States with thier capital

1. Delhi
   - NewDelhi
2. Haryana
   - Chandigarh
3. Gujarat
   - Gandhinagar
4. Rajasthan
   - Jaipur
5. Maharashtra
   - Mumbai
6. Uttarpradesh
   - Lucknow

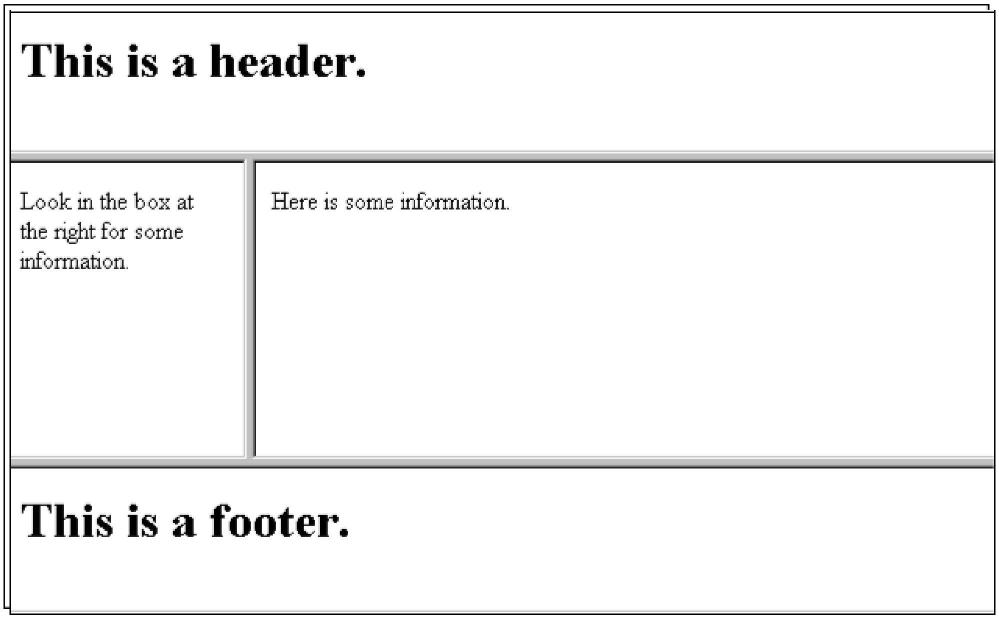
Q 2. Write a HTML code, which generate the following output



List of Books

Item No	Item Name	Price	
		Rs.	Paise
1	Programming in Python	500	50
2	Programming in Java	345	00

Q3. Write a HTML script to design the following screen



This is a header.

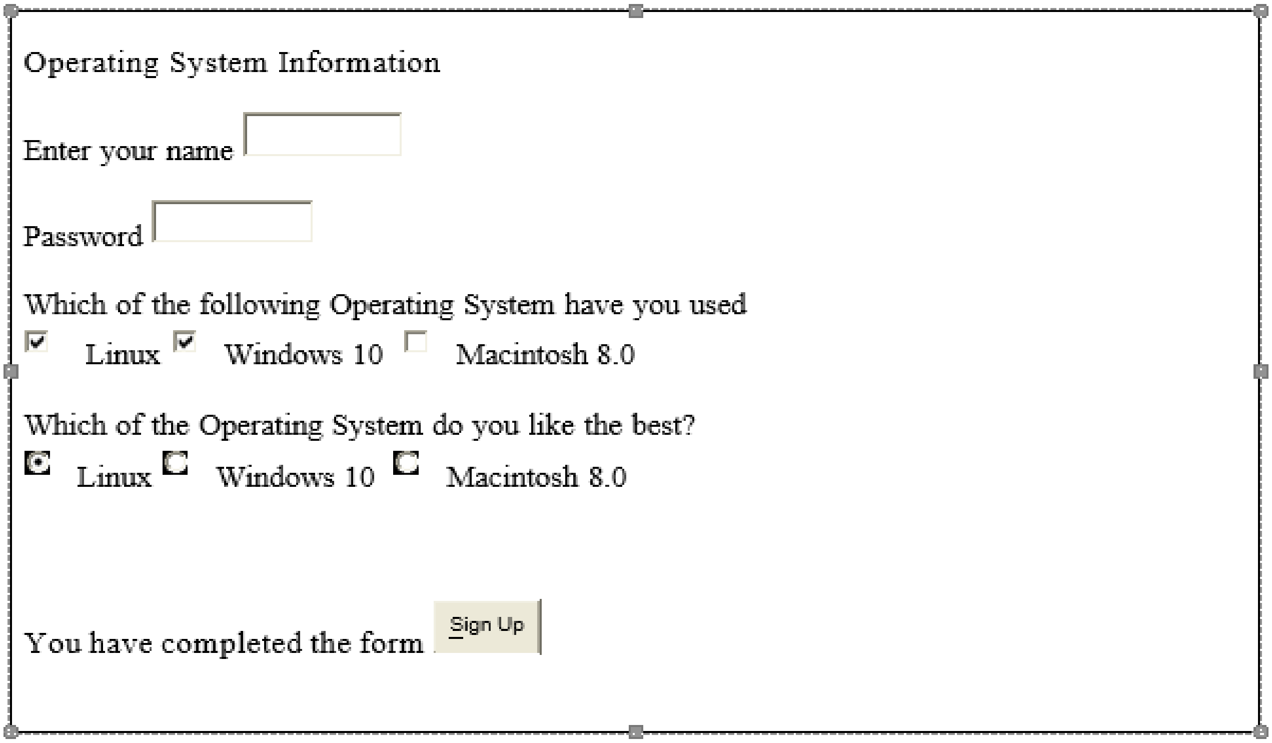
Look in the box at the right for some information.

Here is some information.

This is a footer.

SET B

Q 1. Write the HTML code for generating the form as shown below.
Apply the internal CSS to following form change the font size of the heading to 6pt and change the color to red and also change the background color yellow



Operating System Information

Enter your name

Password

Which of the following Operating System have you used

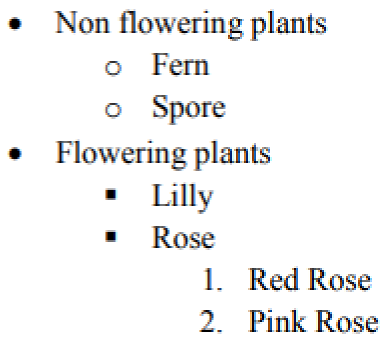
☑ Linux ☑ Windows 10 □ Macintosh 8.0

Which of the Operating System do you like the best?

● Linux ○ Windows 10 ○ Macintosh 8.0

You have completed the form

Q 2. Write HTML 5 code which generates the following output and display each element of list in different size, color & font. Use external CSS to format the list



- Non flowering plants
  - Fern
  - Spore
- Flowering plants
  - Lilly
  - Rose
    1. Red Rose
    2. Pink Rose

Q 3. Create HTML5 page with following specifications

i) Title should be about your City.

ii) Color the background by Pink color.

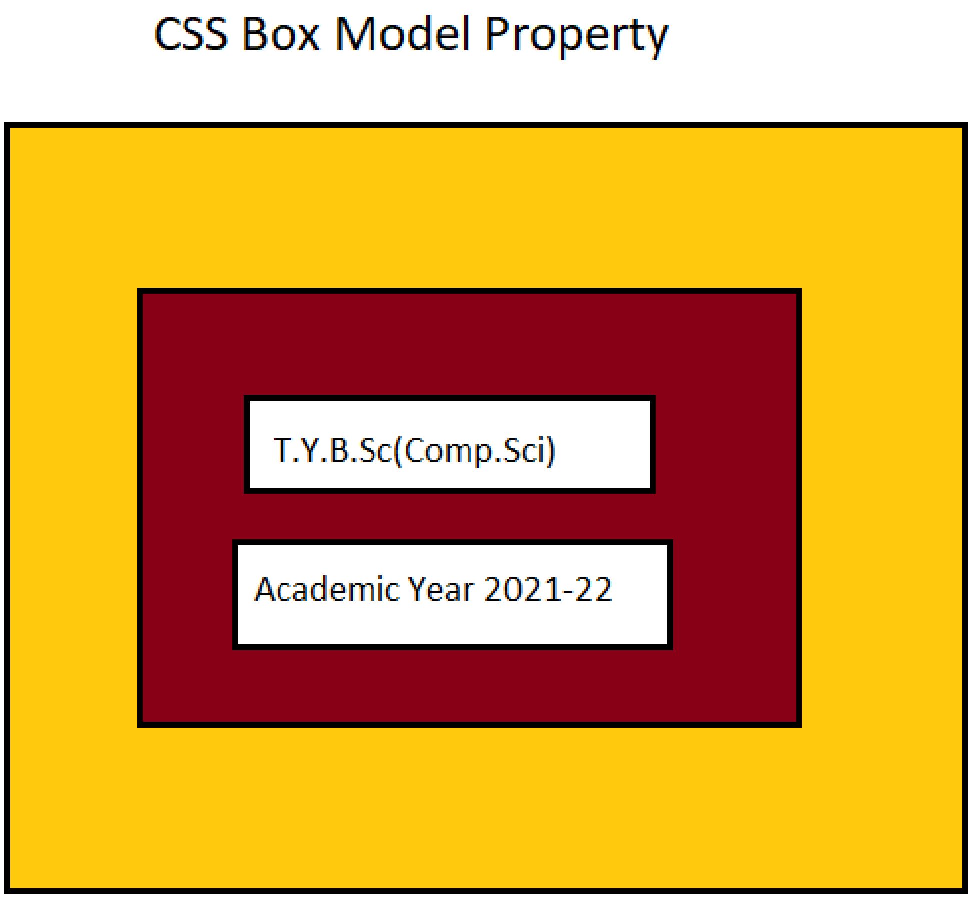
iii) Place your city name at the top of page in large text and in blue color. iv) Add names of the landmarks in your city, each in different color, style and font

v) Add scrolling text about your City.

vi) Add any image at the bottom. (Use inline CSS to format the web page)

Set C.

Q 1. Design HTML 5 Page Using CSS which display the following Box (use Box Model Property in CSS)

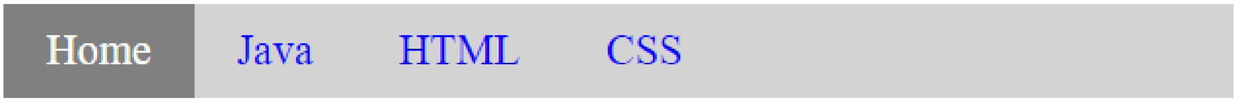


CSS Box Model Property

T.Y.B.Sc(Comp.Sci)

Academic Year 2021-22

Q 2Design HTML 5 Page Using CSS Which Display the following Navigation Bar



Signature of the instructor: ______________________ Date :_______________

Assignment Evaluation

0:Not Done 2:Late Complete 4:Complete □

1:Incomplete □ 3:Needs Improvement 5: Well Done □

Assignment: 2 Bootstrap

Prerequisites

Before proceeding with the Bootstrap tutorial, you should have some basic knowledge to implement web applications using HTML, CSS, and JavaScript to understand the bootstrap framework and its components.

What is Bootstrap?

- Bootstrap is a free front-end framework for faster and easier web development
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins
- Bootstrap also gives you the ability to easily create responsive designs

Bootstrap History

Bootstrap was developed by Mark Otto and Jacob Thornton at Twitter, and released as an open source product in August 2011 on GitHub.

In June 2014 Bootstrap was the No.1 project on GitHub!

What is Responsive Web Design?

Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.

Why Use Bootstrap?

Advantages of Bootstrap:

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap 3, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Edge, Safari, and Opera)

Bootstrap Installation

Where to Get Bootstrap?

There are two ways to start using Bootstrap on your own web site.

You can:

- Download Bootstrap from getbootstrap.com
- Include Bootstrap from a CDN

Download Bootstrap Files

You can download the latest version of the Bootstrap framework from https://getbootstrap.com. The download files will contain the compiled and minified versions of CSS and JavaScript plugins. We can include any of these versions, i.e., either full or minified version based on our requirements.

The **full** (uncompressed) version contains the proper description of each method along with the comments. It is user-friendly and easily debugged but slower to load and heavier than the **minified** version. This should use mainly in the development process.

On the other hand, the **minified** version eliminates any unnecessary spaces and comments, and hence it is not so user-friendly. This loads faster and is much lighter than the **compiled** version. So this version should be used when your project goes live.

Now, add the downloaded files to your application root directory and include those file references in the header (<head>) section by using src attribute of the <script> tag like as shown below.

```
<html lang="en">
<head>
<title>Bootstrap Example</title>

<!-- Latest Bootstrap CSS -->
<script src="~/css/bootstrap.min.css"></script>
<!-- jQuery Library -->
<script src="~/jquery/jquery-3.4.1.min.js"></script>
<!-- Popper JS -->
<script src="~/js/popper.min.js"></script>
<!-- Latest Compiled JavaScript -->
<script src="~/js/bootstrap.min.js"></script>
</head>
<body>
</body>
</html>
```

If you observe the above code, we included jQuery and Popper.js files in the header section because if we want to use compiled bootstrap js file, we need to include jQuery and Popper.js before bootstrap js file. So, you need to download and include those files in your application directory.

Use Bootstrap from CDN

If you don’t want to download the bootstrap files, then we can directly add them to our webpage by referencing them from public CDN (Content Delivery Network) like as shown below.

```
<html lang="en">
<head>
<title>Bootstrap Example</title>

<!-- Latest Bootstrap CSS -->
<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
<!-- jQuery Library -->
<script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>
<!-- Popper JS -->
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"></script>
<!-- Latest Compiled JavaScript -->
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"></script>

</head>
<body> </body>
</html>
```

The CDN's will provide a performance benefit by reducing the loading time because the bootstrap files are hosted on multiple servers, and those are spread across the globe, so when a user requests the file, it will be served from the nearest server to them.

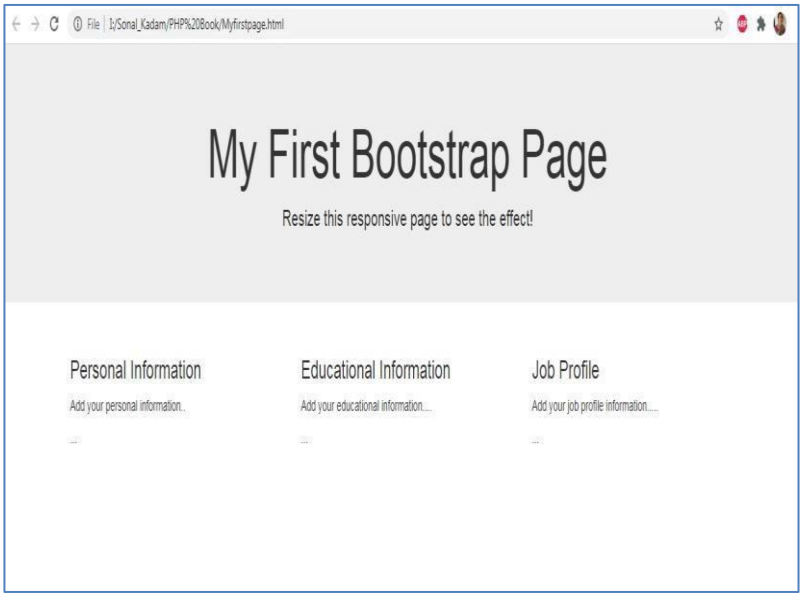
When we request a webpage, the CDN files will cache in the browser. If we request the same web page, then the CDN files will load from cache instead of downloading again from CDN.

Example1 :

```
<html lang="en">

<head>

  <title>Bootstrap Example</title>

  <meta charset="utf-8">

  <meta name="viewport" content="width=device-width, initial-scale=1">

  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>

</head>

<body>



<div class="jumbotron text-center">

  <h1>My First Bootstrap Page</h1>
  <p>Resize this responsive page to see the effect!</p>
</div>

<div class="container">
  <div class="row">
    <div class="col-sm-4">
      <h3>Personal Information</h3>
      <p>Add your personal information..</p>
      <p>...</p>
    </div>
    <div class="col-sm-4">
      <h3>Educational Information</h3>
      <p>Add your educational information....</p>
      <p>...</p>
    </div>
    <div class="col-sm-4">
      <h3>Job Profile</h3>
      <p>Add your job profile information.....</p>
      <p>...</p>
    </div>
  </div>
</div>
</body>
</html>
```

Output:

```
}
```



File | I:/Sonal_Kadam/PHP%20Book/Myfirstpage.html

My First Bootstrap Page

Resize this responsive page to see the effect!

Personal Information

Add your personal information..

...

Educational Information

Add your educational information....

...

Job Profile

Add your job profile information.....

...

Example 2 :

```
<html lang="en">

<head>

  <title>Bootstrap 4 Website Example</title>

  <meta charset="utf-8">

  <meta name="viewport" content="width=device-width, initial-scale=1">

  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">

  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

  <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.16.0/umd/popper.min.js"></script>

  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></script>

  <style>

  .fakeimg {

    height: 200px;

    background: #aaa;

  }

  </style>

</head>
```

```
<body>

<div class="jumbotron text-center" style="margin-bottom:0">
  <h1>My First Bootstrap 4 Page</h1>
  <p>Resize this responsive page to see the effect!</p>
</div>
<nav class="navbar navbar-expand-sm bg-dark navbar-dark">
  <a class="navbar-brand" href="#">Navbar</a>
  <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#collapsibleNavbar">
    <span class="navbar-toggler-icon"></span>
  </button>
  <div class="collapse navbar-collapse" id="collapsibleNavbar">
    <ul class="navbar-nav">
      <li class="nav-item">
        <a class="nav-link" href="#">Home</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">Page 1</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">Page 2</a>
      </li>
    </ul>
  </div>
</nav>

<div class="container" style="margin-top:30px">
  <div class="row">
```

```
<div class="col-sm-4">
  <h2>About Me</h2>
  <h5>Photo of me:</h5>
  <div class="fakeimg">Your Image</div>
  <p>Some text about me in culpa qui officia deserunt mollit anim..</p>
  <h3>Some Links</h3>
  <p>Lorem ipsum dolor sit ame.</p>
  <ul class="nav nav-pills flex-column">
    <li class="nav-item">
      <a class="nav-link active" href="#">Personal Data</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">Educational Info</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">Business Profile</a>
    </li>
    <li class="nav-item">
      <a class="nav-link disabled" href="#">Disabled</a>
    </li>
  </ul>
  <hr class="d-sm-none">
</div>
<div class="col-sm-8">
  <h2>TITLE HEADING</h2>
  <h5>Title description</h5>
  <div class="fakeimg">Add  Image</div>
  <p>Add Some text..</p>
```

```
      <p>Sunt in culpa qui officia deserunt mollincididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.</p>

      <br>

      <h2>TITLE HEADING</h2>

      <h5>Title description</h5>

      <div class="fakeimg">Add  Image</div>

      <p>Add Some text..</p>

      <p>Sunt in culpa qui officia deserunt mollit anim id est laborum qua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.</p>

    </div>

  </div>

</div>

<div class="jumbotron text-center" style="margin-bottom:0">

  <p>Footer</p>

</div>

</body>

</html>
```

Output:

Run above program and check output and do changes as per your webpage requirement

The Carousel(slideshow) Plugin

The Carousel plugin is a component for cycling through elements, like a carousel (slideshow).

How To Create a Carousel ?

The outermost <div>:

Carousels require the use of an id (in this case id="myCarousel") for carousel controls to function properly.

The class="carousel" specifies that this <div> contains a carousel.

The .slide class adds a CSS transition and animation effect, which makes the items slide when showing a new item. Omit this class if you do not want this effect.

The data-ride="carousel" attribute tells Bootstrap to begin animating the carousel immediately when the page loads.

The "Indicators" part:

The indicators are the little dots at the bottom of each slide (which indicates how many slides there are in the carousel, and which slide the user is currently viewing).

The indicators are specified in an ordered list with class .carousel-indicators.

The data-target attribute points to the id of the carousel.

The data-slide-to attribute specifies which slide to go to, when clicking on the specific dot.

The "Wrapper for slides" part:

The slides are specified in a <div> with class .carousel-inner.

The content of each slide is defined in a <div> with class .item. This can be text or images.

The .active class needs to be added to one of the slides. Otherwise, the carousel will not be visible.

The "Left and right controls" part:

This code adds "left" and "right" buttons that allows the user to go back and forth between the slides manually.

The data-slide attribute accepts the keywords "prev" or "next", which alters the slide position relative to its current position.

Add Captions to Slides

Add <div class="carousel-caption"> within each <div class="item"> to create a caption for each slide:

Example :

```
<html lang="en">

<head>

  <title>Bootstrap Example</title>

  <meta charset="utf-8">

  <meta name="viewport" content="width=device-width, initial-scale=1">

  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>

</head>
```

```
<body>
<div class="container">
  <h2>Carousel Example</h2>
  <div id="myCarousel" class="carousel slide" data-ride="carousel">
    <!-- Indicators -->
    <ol class="carousel-indicators">
      <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
      <li data-target="#myCarousel" data-slide-to="1"></li>
      <li data-target="#myCarousel" data-slide-to="2"></li>
    </ol>
    <!-- Wrapper for slides -->
    <div class="carousel-inner">
      <div class="item active">
        <img src="Desert.jpg" alt="Los Angeles" style="width:100%;">
        <div class="carousel-caption">
          <h3>Los Angeles</h3>
          <p>LA is always so much fun!</p>
        </div>
      </div>
      <div class="item">
        <img src="Koala.jpg" alt="Chicago" style="width:100%;">
        <div class="carousel-caption">
          <h3>Chicago</h3>
          <p>Thank you, Chicago!</p>
        </div>
      </div>
    <div class="item">
        <img src="Tulips.jpg" alt="New York" style="width:100%;">
        <div class="carousel-caption">
          <h3>New York</h3>
          <p>We love the Big Apple!</p>
        </div>
      </div>
      </div>
    <!-- Left and right controls -->
    <a class="left carousel-control" href="#myCarousel" data-slide="prev">
      <span class="glyphicon glyphicon-chevron-left"></span>
      <span class="sr-only">Previous</span>
    </a>
    <a class="right carousel-control" href="#myCarousel" data-slide="next">
      <span class="glyphicon glyphicon-chevron-right"></span>
      <span class="sr-only">Next</span>
    </a>
  </div>
</div>
</body>
</html>
```

Output:

Run above program and check output and change images as per your webpage requirement

Bootstrap Forms

Bootstrap's Default Settings

Form controls automatically receive some global styling with Bootstrap:

All textual <input>, <textarea>, and <select> elements with class .form-control have a width of 100%.

Bootstrap Form Layouts

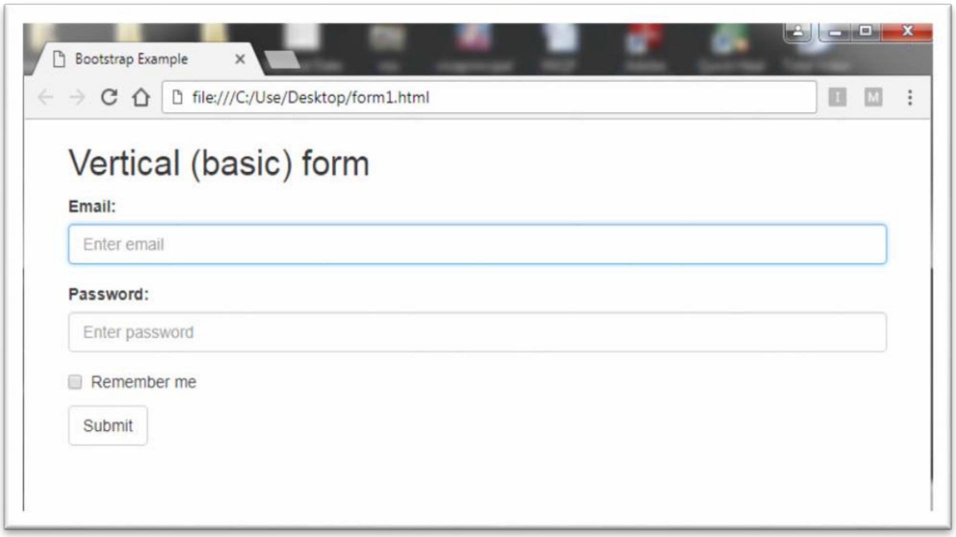
Bootstrap provides three types of form layouts:

- Vertical form (this is default)
- Horizontal form
- Inline form

Standard rules for all three form layouts:

- Wrap labels and form controls in <div class="form-group"> (needed for optimum spacing)
- Add class .form-control to all textual <input>, <textarea>, and <select> elements

Bootstrap Vertical Form (default)



Vertical (basic) form

Email:

Enter email

Password:

Enter password

□ Remember me

Submit

VerticalForm.html :

```
<html lang="en">
<head>
  <title>Bootstrap Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
<div class="container">
  <h2>Basic form</h2>
  <form action="/action_page.php">
    <div class="form-group">
      <label for="email">Email:</label>
      <input type="email" class="form-control" id="email" placeholder="Enter email" name="email">
    </div>
    <div class="form-group">
      <label for="pwd">Password:</label>
      <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pwd">
    </div>
    <div class="checkbox">
      <label><input type="checkbox" name="remember"> Remember me</label>
    </div>
    <button type="submit" class="btn btn-default">Submit</button>
  </form>
</div>
</body>
</html>
```

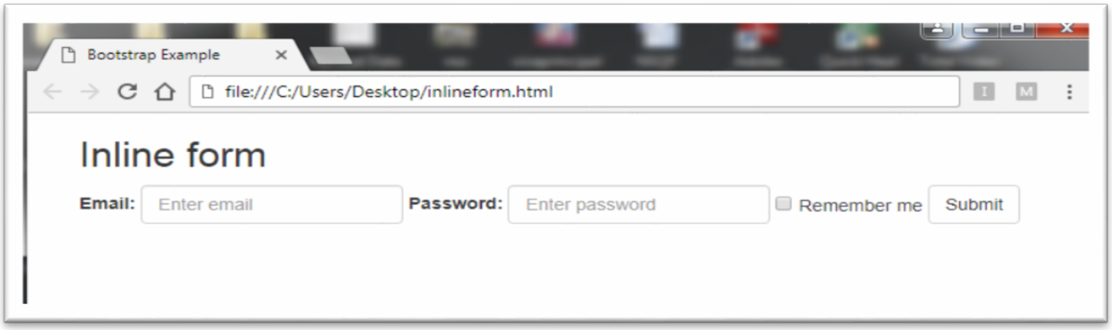
Bootstrap Inline Form

In an inline form, all of the elements are inline, left-aligned, and the labels are alongside.

Note: This only applies to forms within viewports that are at least 768px wide!

Additional rule for an inline form:

- Add class .form-inline to the <form> element



Inlineform.html

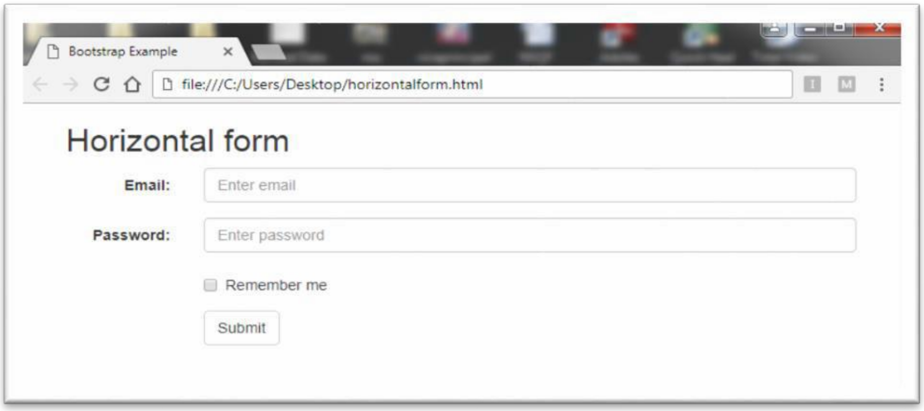
```
<html lang="en">
<head>
  <title>Bootstrap Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
<div class="container">
  <h2>Inline form</h2>
    <form class="form-inline" action="/action_page.php">
    <div class="form-group">
      <label for="email">Email:</label>
      <input type="email" class="form-control" id="email" placeholder="Enter email" name="email">
    </div>
    <div class="form-group">
      <label for="pwd">Password:</label>
      <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pwd">
    </div>
    <div class="checkbox">
      <label><input type="checkbox" name="remember"> Remember me</label>
    </div>
    <button type="submit" class="btn btn-default">Submit</button>
  </form>

</div>

</body>

</html>
```

Bootstrap Horizontal Form

A horizontal form means that the labels are aligned next to the input field (horizontal) on large and medium screens. On small screens (767px and below), it will transform to a vertical form (labels are placed on top of each input).

Additional rules for a horizontal form:

- Add class .form-horizontal to the <form> element
- Add class .control-label to all <label> elements



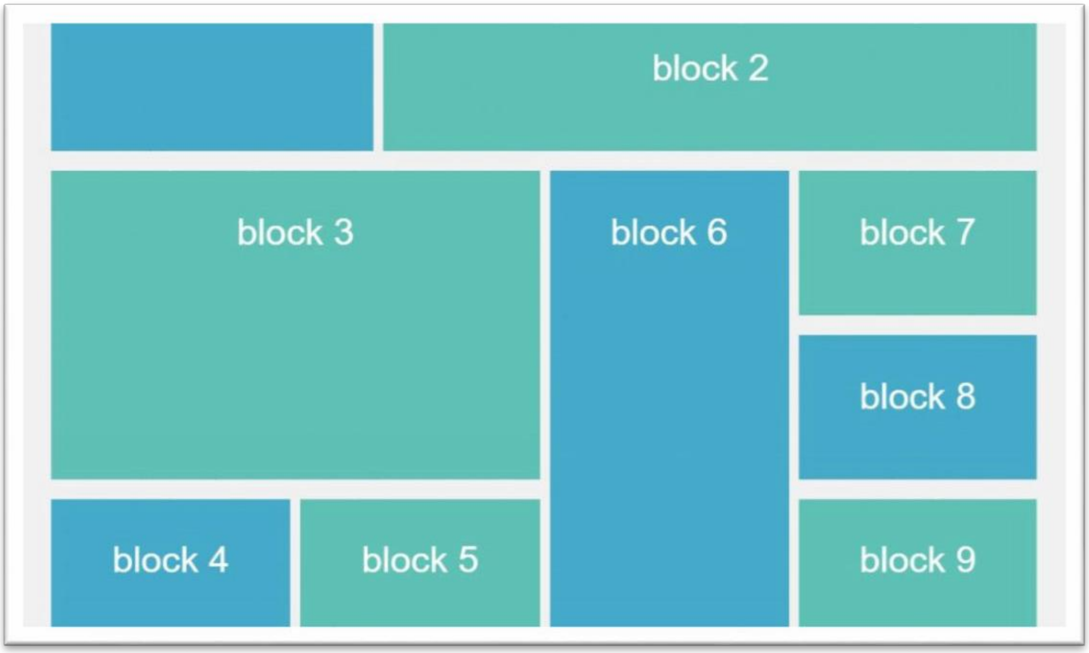
HorizontalForm.html

```
<html lang="en">

<head>

  <title>Bootstrap Example</title>

  <meta charset="utf-8">

  <meta name="viewport" content="width=device-width, initial-scale=1">

  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>

</head>
```

```
<body>


<div class="container">
  <h2>Horizontal form</h2>
  <form class="form-horizontal" action="/action_page.php">
    <div class="form-group">
      <label class="control-label col-sm-2" for="email">Email:</label>
      <div class="col-sm-10">
        <input type="email" class="form-control" id="email" placeholder="Enter email" name="email">
      </div>
    </div>
    <div class="form-group">
      <label class="control-label col-sm-2" for="pwd">Password:</label>
      <div class="col-sm-10">
        <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pwd">
      </div>
    </div>
    <div class="form-group">
      <div class="col-sm-offset-2 col-sm-10">
        <div class="checkbox">
          <label><input type="checkbox" name="remember"> Remember me</label>
        </div>
      </div>
    </div>
    <div class="form-group">
      <div class="col-sm-offset-2 col-sm-10">
        <button type="submit" class="btn btn-default">Submit</button>
      </div>
    </div>
  </form>
</div>
</body>
</html>
```

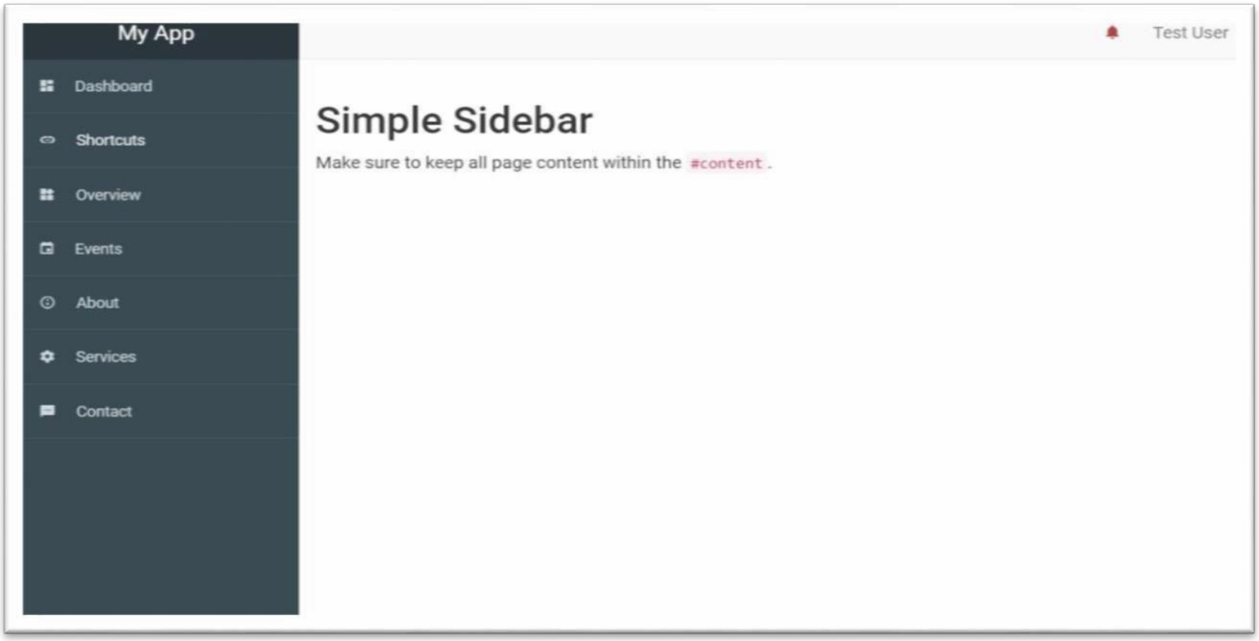
Set A:

1. Create following Bootstrap Web Layout Design. There are 9 blocks of the region in the arrangement. You   can either place the images in them or the contents.



Set B

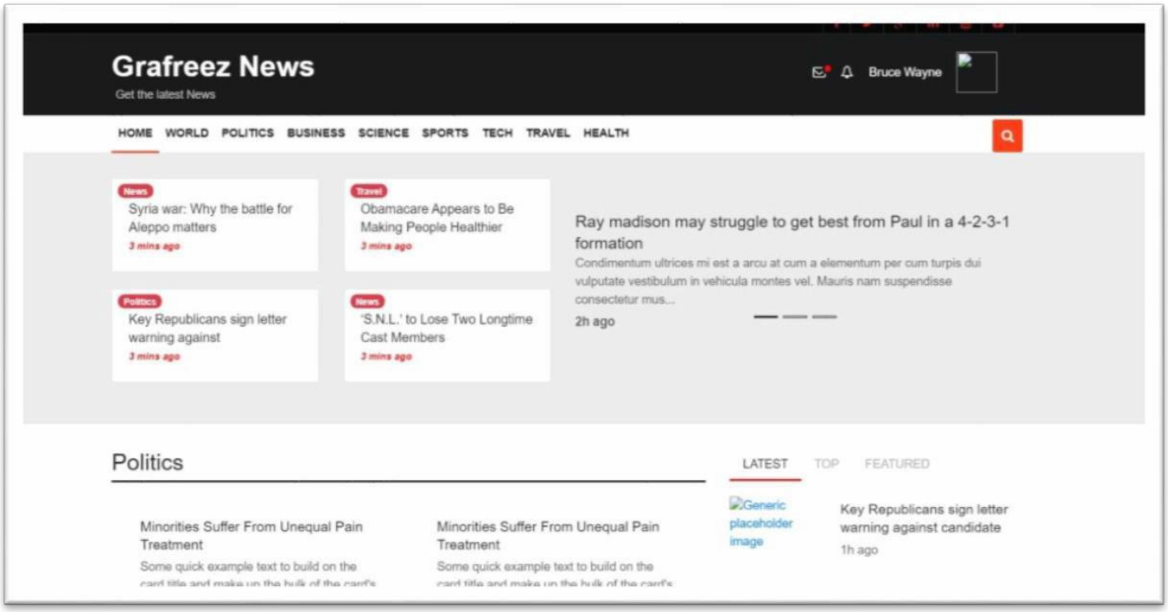
1. Create following layout using bootstrap



Simple Sidebar

Make sure to keep all page content within the `#content`.

2. Create following News Template Layout using Bootstrap.At the top bar, you can include a climate gadget and helpful links like part login and information exchange. Like in all other free news site formats, mega menu choices are present to give you a chance to sort out the links.



Syria war: Why the battle for Aleppo matters
3 mins ago

Obamacare Appears to Be Making People Healthier
3 mins ago

Key Republicans sign letter warning against
3 mins ago

'S.N.L.' to Lose Two Longtime Cast Members
3 mins ago

Ray madison may struggle to get best from Paul in a 4-2-3-1 formation

Condimentum ultrices mi est a arcu at cum a elementum per cum turpis dui vulputate vestibulum in vehicula montes vel. Mauris nam suspendisse consectetur mus...

2h ago

Politics

Minorities Suffer From Unequal Pain Treatment

Some quick example text to build on the card title and make up the bulk of the card's

Minorities Suffer From Unequal Pain Treatment

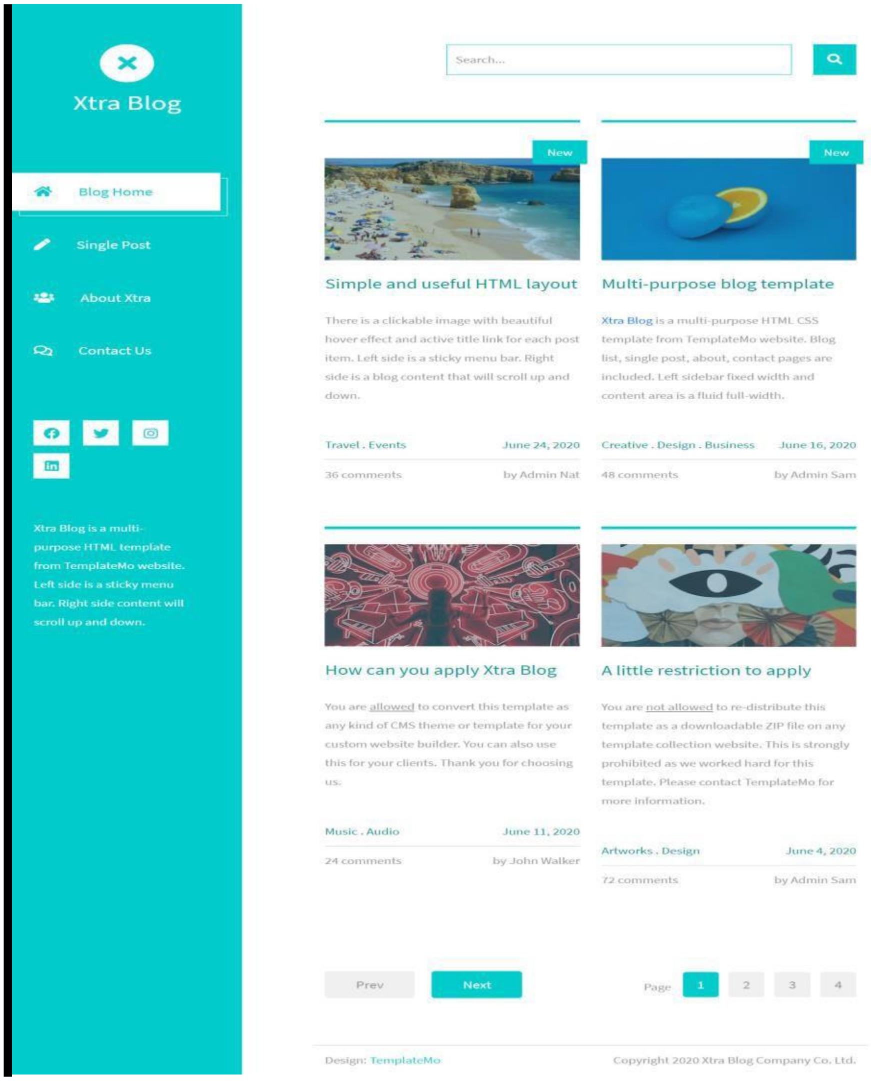
Some quick example text to build on the card title and make up the bulk of the card's

Key Republicans sign letter warning against candidate

1h ago

Set C:

1. Create following one page website layout using bootstrap



Xtra Blog is a multi-purpose HTML template from TemplateMo website. Left side is a sticky menu bar. Right side content will scroll up and down.

Simple and useful HTML layout

There is a clickable image with beautiful hover effect and active title link for each post item. Left side is a sticky menu bar. Right side is a blog content that will scroll up and down.

Travel . Events June 24, 2020

36 comments by Admin Nat

Multi-purpose blog template

Xtra Blog is a multi-purpose HTML CSS template from TemplateMo website. Blog list, single post, about, contact pages are included. Left sidebar fixed width and content area is a fluid full-width.

Creative . Design . Business June 16, 2020

48 comments by Admin Sam

How can you apply Xtra Blog

You are allowed to convert this template as any kind of CMS theme or template for your custom website builder. You can also use this for your clients. Thank you for choosing us.

Music . Audio June 11, 2020

24 comments by John Walker

A little restriction to apply

You are not allowed to re-distribute this template as a downloadable ZIP file on any template collection website. This is strongly prohibited as we worked hard for this template. Please contact TemplateMo for more information.

Artworks . Design June 4, 2020

72 comments by Admin Sam

Design: TemplateMo

Copyright 2020 Xtra Blog Company Co. Ltd.

Assignment No. 3 : To study functions & strings

User-defined functions

A function may be defined using syntax such as the following:

```
function function_name([argument_list…])
{
      [statements]
      [return return_value;]
}
```

Any valid PHP code may appear inside a function, even other functions and class definitions. The variables you use inside a function are, by default, not visible outside that function. In PHP3 functions must be defined, before they are referenced. No such requirement exists in PHP4.

Example 1.

Code	Output

<?php
msg("Hello");   // calling a function
function msg($a)   // defining a function
{
 echo $a;
}
?>
	Hello

Default parameters

You can give default values to more than one argument, but once you start assigning default values, you have to give them to all arguments that follow as well.

Example 2.

Code	Output

<?php
function display($greeting, $message=”Good Day”)
{
   echo $greeting;
  echo “
”;
  echo $message;
}
display(“Hello”);
?>
	Hello
	Good Day

Variable parameters

You can set up functions that can take a variable number of arguments. Variable number of arguments can be handled with these functions:

func_num_args : Returns the number of arguments passed
func_get_arg : Returns a single argument
func_get_args : Returns all arguments in an array

Example 3.

Code	Output

<?php
echo “Passing 3 arg. to xconcat
”;
echo “Result is …”;
xconcat(“How”,”are”,”you”);
function xconcat( )
{
  $ans = “”;
  $arg = func_get_args( );
  for ($i=0; $i<func_num_args( ); $i++)
  {
    $ans.= $arg[$i].” “;
   }
    echo $ans;
}
?>
	Passing 3 arg. to xconcat
	Result is …How are you

Missing parameters

When using default arguments, any defaults should be on the right side of any non-default arguments, otherwise, things will not work as expected.

Example 4.

Code	***Output***

<?php
function makecoffee ($type = "Nescafe")
{
return "Making a cup of $type
";
}
echo makecoffee ();
echo makecoffee ("espresso");
?>
	Making a cup of Nescafe.
	Making a cup of espresso.

<?php
function make ($type = "acidophilus", $flavour)
{
return "Making a bowl of $type $flavour
";
}
echo make ("raspberry");   // won’t work
?>
	Warning: Missing argument 2 in call to make()…..
	Making a bowl of raspberry

<?php
function make ($flavour, $type = "acidophilus")
{
return "Making a bowl of $type $flavour
";
}
echo make ("raspberry");   //it works
?>
	Making a bowl of acidophilus raspberry.

Variable functions

Assign a variable the name of a function, and then treat that variable as though it is the name of a function.

Example 5.

Code	Output

<?php
$varfun='fun1';
$varfun( );
$varfun='fun2';
$varfun( );
$varfun='fun3';
$varfun( );
function fun1( )
{
 echo "<br>Function one";
}
function fun2( )
{
 echo "<br>Function two";
}
function fun3( )
{
 echo "<br>Function three";
}
?>
	Function one
	Function two
	Function three

Anonymous functions

The function that does not possess any name are called anonymous functions. Such functions are created using *create_function( )* built-in function. Anonymous functions are also called as lambda functions.

Example 6.

Code	Output
<?php $fname=create_function('$a,$b', '$c = $a + $b; return $c;'); echo $fname(10,20); ?>	30

Strings

Strings in PHP

- Single quoted string   (few escape characters supported, variable interpolation not possible)
- Double quoted string   (many escape characters supported, variable interpolation possible)
- Heredoc

There are functions to print the string, namely print, printf, echo.
The print statement can print only single value, whereas echo and printf can print multiple values. printf requires format specifiers. If echo statement is used like a function, then only one value can be

printed.

Comparing Strings

Example 1.

Code	Output

<?php
$a='amit';
$b='anil';
if($a==$b)   //using operator
echo "Both strings are equal
";
else
  echo "Both strings are not equal
";
if(strcmp($a,$b)>0)   //using function
{
 echo "String2 sorts before String1";
}
elseif(strcmp($a,$b)==0)
{
 echo "both are equal";
}
elseif(strcmp($a,$b)<0)   // negative value
{
 echo "String1 sorts before String2";
}?>
	Both strings are not equal
	String1 sorts before String2

<?php
$a=34;
$b='34';
if($a===$b)   //using operator
  echo "Both strings are equal
";
else
  echo "Both strings are not equal
";
?>
	Both strings are not equal

Other string comparison functions

strcasecmp( )	: case in-sensitive string comparison
strnatcmp( )	: string comparison using a “natural order” algorithm
strnatcasecmp( )	: case in-sensitive version of strnatcmp( )

String manipulation & searching string

Example 2.

Code	Output
<?php $small="India"; $big="India is my country"; $str=substr($big,6,5); echo " $str"; $cnt = substr_count($big,"i");	is my There are 2 i's in India is my country is found at 6 position

echo " There are".$cnt." i's in $big"; $pos=strpos($big,"is"); echo " is found at $pos position"; $replace=substr_replace($big,"Bharat",0,5); echo " before replacement->$big"; echo " after replacement ->$replace"; ?>	before replacement->India is my country after replacement ->Bharat is my country

Regular Expressions

Two types of regular expressions
POSIX – style
PERL – compatible

Purpose of using regular expressions

Matching
Substituting
Splitting
Example 3.

Code	Output
<?php $big=<<< paragraph India is my country. I am proud of it. I live in Maharashtra. paragraph; echo " "; $found=preg_match('/am/i',$big); if($found) echo " am found in \$big"; $replace=preg_replace('/India/','Bharat',$big); echo " $replace"; $split=preg_split('/ /',$big); foreach($split as $elem) { echo " $elem";} ?>	am found in $big Bharat is my country. I am proud of it. I live in Maharashtra. India is my country. I am proud of it. I live in Maharashtra

<u>SET A</u>

Q: 1) Write a script to accept two integers(Use html form having 2 textboxes).
Write a PHP script to,

a. Find mod of the two numbers.
b. Find the power of first number raised to the second.
c. Find the sum of first n numbers (considering first number as n)
d. Find the factorial of second number.

(Write separate function for each of the above operations.)

Q: 2) Write a PHP script for the following: Design a form to accept a string.

a. Write a function to find the length of given string without using built in functions.
b. Write a function to count the total number of vowels i.e. (a,e,i,o,u)) from the string.
c. Convert the given string to lowercase and then to Title case.
d. Pad the given string with “*” from left and right both the sides.
e. Remove the leading whitespaces from the given string.

f. Find the reverse of given string.(use built-in functions)

(Use radio buttons and the concept of function. Use ‘include’ construct or ‘require’ stmt.)

SET B

Q. 1) :Write a PHP script for the following: Design a form to accept two strings from the user.

a. Find whether the small string appears at the start of the large string.
b. Find the position of the small string in the big string.
c. Compare both the string for first n characters, also the comparison should not be case sensitive.

Q. 2) : Write a PHP script for the following: Design a form having a text box and a drop down list containing any 3 separators(e.g. #, |, %, @, ! or comma) accept a strings from the user and also a separator.

a. Splitthe string into separate words using the given separator.
b. Replace all the occurrences of separator in the given string with some other separator.
c. Find the last word in the given string(Use **strrstr()** function).

Q. 3) : Write a PHP script having 3 textboxes. The first textbox should be for accepting name of the student, second for accepting name of college and third for accepting a proper greeting message. Write a function for accepting all the three parameters and generating a proper greeting message. If any of the parameters are not passed, generate the proper greeting message.

(Use the concept of missing parameters)

SET C

Q: 1) Write a PHP script for the following: Design a form to accept the marks of 5 different subjects of a student, havingserial number, subject name & marks out of 100. Display the result in the tabular format which will have total, percentage and grade. Use only 3 text boxes.(Use array of form parameters)

Q: 2) Write a PHP script to accept 2 strings from the user, the first string should be a sentence and second can be a word.

a. Delete a small part from first string after accepting position and number of characters to remove.
b. Insert the given small string in the given big string at specified position without removing any characters from the big string.
c. Replace some characters/ words from given big string with the given small string at specified position.
d. Replace all the characters from the big string with the small string after a specified position.

(Use substr_replace() function)

Q: 3)Using regular expressions check for the validity of entered email-id.

a. The @ symbol should not appear more than once.
b. The dot (.) can appear at the most once before @ and at the most twice or at least once after @ symbol.
c. The substring before @ should not begin with a digit or underscore or dot or @ or any other special character. (Use explode and ereg function.)

Signature of the instructor :______________________ Date :______________

Assignment Evaluation

0:Not Done	□	2:Late Complete	□	4:Complete	□
1:Incomplete	□	3:Needs Improvement	□	5:Well Done	□

ASSIGNMENT NO. 4 : TO STUDY ARRAYS :

An array is a collection of data values. Array is organized as an ordered collection of (key,value) pairs.

In PHP there are two kinds of arrays:

Indexed array: An array with a numeric index starting with 0.

For example, Initializing an indexed array,
$numbers[0]=100;
$numbers[1]=200;
$numbers[2]=300;

Associative array: An array which have strings as keys which are used to access the values.

Initializing an Associative array,
$numbers['one']=100;
$numbers['two']=200;
$numbers['three']=300;

Creating Arrays

Arrays can be created in multiple ways

1. Using simple assignment to initialize an array.

   Eg : $addresses[0] = "spam@cyberpromo.net";
   $addresses[1] = "abuse@example.com";
   $addresses[2] = root@example.com

   OR

   $price['gasket'] = 15.29;
   $price['wheel'] = 75.25;
   $price['tire'] = 50.00

2. An easier way to initialize an array is to use the array() construct, which builds an array from its arguments. This builds an indexed array, and the index values (starting at 0) are created automatically:

   $addresses = array("spam@cyberpromo.net", "abuse@example.com", "root@example.com");
   To create an associative array with array(), use the => symbol to separate indices (keys) from values:
   $price = array('gasket' => 15.29, 'wheel' => 75.25, 'tire' => 50.00);

3. To construct an empty array, pass no arguments to array(): $addresses = array();

   Some Array functions:

Name	**Use**	**Example**
Array()	This construct is used to initialize an array.	$numbers=array(100,200,300); $cities=array(‘Capital of Nation‘=>’Delhi’, ’Capital of state’=>’Mumbai’, ’My city’=>’Nashik’);
List()	This function is used to copy values from array to the variables.	$cities=array(‘Capital of Nation‘=>’Delhi’, ’Capital of state’=>’Mumbai’, ’My city’=>’Nashik’);
Count(), sizeof()	The count() and sizeof() functions are identical in use and effect. They return the number of elements in the array.	$family = array("Fred", "Wilma", "Pebbles"); $size = count($family); // $size is 3
array_splice()	This function is used to remove or insert elements in array	$student=array(11,12,13,14,15,16); $new_student=array_splice($student,2,3); /* starting from index(2) and length =3 $new_student1=array_splice($student,2); /* here length is not mentioned */ Output : $new_student=(13,14,15); $new_student1=(13,14,15,16);
array_key_exists()	This function is used to check if an element exist in the array.	$cities=array(‘Capital of Nation‘=>’Delhi’, ’Capital of state’=>’Mumbai’, ’My city’=>’Nashik’); If (array_key_exists(‘Capital of State’,$cities)) { Echo “key found!\n”; } Output :Key_found!
extract()	This function automatically creates local variables from the array	$student = array(‘roll’=>11, ‘name’=>’A’,’class’=>’TYBSC’); Extract($student); By this, the variables are created like this : $roll = 11; $name=’A’; $class=’TYBSc’;
array_filter()	To identify a subset of an array based on its values, use the array_filter() function	$callback = function isOdd ($element) { return $element % 2; }; $numbers = array(9, 23, 24, 27); $odds = array_filter($numbers, $callback); // $odds is array(0 => 9, 1 => 23, 3 => 27)

shuffle()	To traverse the elements in an array in random order, use the shuffle() function	$weekdays = array("Monday", "Tuesday", "Wednesday", "Thursday", "Friday");
		shuffle($weekdays);
		print_r($days);
		Array(
		[0] => Tuesday
		[1] => Thursday
		[2] => Monday
		[3] => Friday
		[4] => Wednesday)

Set A

1. Create your array of 30 high temperatures, approximating the weather for a spring month, then find the average high temp, the five warmest high temps and the five coolest high temps. Display the result on the browser.
   Hint: a) Use array_slice b) the HTML character entity for the degree sign is & deg;.

2. Write a menu driven program to perform the following stack and queue related operations:[Hint: use Array_push(), Array_pop(), Array_shift(), Array_unshift()]
   a) Insert an element in stack
   b) Delete an element from stack
   c) Display the contents of stack
   d) Insert an element in queue
   e) Delete an element from queue
   f) Display the contents of queue

Set B

1. Write a PHP script that inserts a new item in an array at any position.
   (hint : use array_splice())

2. Define an array. Find the elements from the array that matches the given value using appropriate search function.

Set C

1. Write a PHP script to sort the following associative array :
   array("Sophia"=>"31","Jacob"=>"41","William"=>"39","Ramesh"=>"40") in
   a) ascending order sort by value
   b) ascending order sort by Key
   c) descending order sorting by Value
   d) descending order sorting by Key

2. Write a menu driven program to perform the following operations on associative arrays:
   a) Split an array into chunks
   b) Sort the array by values without changing the keys.
   c) Filter the odd elements from an array.
   d) Merge the given arrays.
   e) Find the intersection of two arrays.
   f) Find the union of two arrays.
   g) Find set difference of two arrays.

Assignment Evaluation

0 : Not done		1 : Incomplete		2 : Late Complete	
3 : Needs Improvement		4 : Complete		5 : Well done	

Practical In-Charge Date:

Assignment : 5 To study Files and Database (PHP-PostgreSQL)

File : A **file** is nothing more than an ordered sequence of bytes stored on hard disk,floppy disk CD-ROM or some other storage media. Operations on file are Opening and closing a file. Reading a file and writing into fileDeleting and renaming a file navigating a file

A **file handler** is nothing more than an integer value that will be used to identify thefile you wish to work with until it is closed working with files

<table>
<tr><th>Function Name</th><th>Description</th></tr>
<tr><td>fopen()</td><td>Opening and closing a file
This is used to open a file ,returning a file handle associatedwith opened file .It can take three arguments :fname,mode and optional use_include_path
Ex:-$fp=fopen(“data.txt”,r);
We can also open a file on remote hostList of modes used in fopen are:
<table>
<tr><th>Mode</th><th>Purpose</th></tr>
<tr><td>R</td><td>Open for reading only; place the file pointerat the beginning of the file</td></tr>
<tr><td>r+</td><td>Open for reading and writing; place the file pointer at the beginning of the file.</td></tr>
<tr><td>w</td><td>Open for writing only; place the file pointer at the beginning of the file and truncate thefile to zero length. If the file does not exist, attempt to create it.</td></tr>
<tr><td>w+</td><td>Open for reading and writing; place the file pointer at the beginning of the file and truncate the file to zero length. If the file does not exist, attempt to create it.</td></tr>
<tr><td>A</td><td>Open for writing only; place the file pointerat the end of the file. If the file does not exist, attempt to create it.</td></tr>
<tr><td>a+</td><td>Open for reading and writing; place the file pointer at the end of the file. If the file does not exist, attempt to create it.</td></tr>
</table></td></tr>
<tr><td>fclose()</td><td>This is used to close file, using its associated file handle as a single argument
Ex:- fclose(fp);</td></tr>
<tr><td>fread( )</td><td>This function is used to extract a character string from a fileand takes two arguments, a file handle and a integer length
Ex: fread($fp,10);</td></tr>
<tr><td>fwrite()</td><td>This function is used to write data to a file and takes two arguments, a file handle and a string
Ex: fwrite($fp,”HELLO”);</td></tr>
</table>

fgetc()	Function can be used to read one character from file at a fileIt takes a single argument ,a file handle and return just one character from the file .It returns false when it reached toend of file.
fgets()	This function is used to read set of characters it takes two arguments, file pointer and length. It will stop reading for any one of three reasons:The specified number of bytes has been read A new line is encountered The end of file is reached
fputs()	This is simply an alias for fwrite() .
file()	This function will return entire contents of file.This function will automatically opens,reads,anclose the file.It has one argument :a string containing the name of the file.It can alsofetch files on remote host.
fpassthru()	This function reads and print the entire file to the web browser.This function takes one argument ,file handle.If youread a couple of lines from a file before calling fpassthru() ,then this function only print the subsequent contents of afile.
readfile()	This function prints content of file without having a call to fopen() It takes a filename as its argument ,reads a file and then writeit to standard output returning the number of bytesread(or false upon error)
fseek()	It takes file handle and integer offset , offset type as an arguments .It will move file position indicator associated withfile pointer to a position determined by offset. By default this offset is measured in bytes from the beginning of the file. The third argument is optional ,can be specified as: SEEK_SET:-Beginning of file +offset SEEK_CUR:-Current position +offset(default) SEEK_END:-End of the file +offset
ftell()	It takes file handle as an argument and returns the current offset(in bytes) of the corresponding file position indicator.
rewind()	It accepts a file handle as an argument and reset the corresponding file position indicator to the beginning of file.
file_exists()	It takes file name with detail path as an argument and returns true if file is there otherwise it returns false
file_size()	It takes file name as an argument and returns total size of file (in bytes)
fileatime()	It takes filename as an argument and returns last access time for a file in a UNIX timestamp format
filectime()	It takes filename as an argument and returns the time at which the file was last changed as a UNIX timestamp format
filemtime()	It takes filename as an argument and returns the time at which the file was last modified as a UNIX timestamp format
fileowner()	It takes filename as an argument and returns the user ID of the owner of specified file.
posix_getpwuid()	It accept user id returned by fileowner() function as an argument and returns an associative array with following references
	Key | Description

<table>
<tr><td></td><td><table>
<tr><td>name</td><td>The shell account user name of the user</td></tr>
<tr><td>passwd</td><td>The encrypted user password</td></tr>
<tr><td>Uid</td><td>The ID number of the user</td></tr>
<tr><td>Gid</td><td>The group ID of the user</td></tr>
<tr><td>Gecos</td><td>A comma separated list containing user full name office phone, office number and home phone number</td></tr>
<tr><td>Dir</td><td>The absolute path to the home directory of the user</td></tr>
<tr><td>Shell</td><td>The absolute path to the users default shell</td></tr>
</table></td></tr>
<tr><td>filegroup()</td><td>It takes filename as an argument and returns the group ID of owner of the specified file</td></tr>
<tr><td>posix_getgid()</td><td>It accept group ID returned by filegroup() function as an argument and returns an associative array on a group identified by group ID with following refernces
<table>
<tr><td>Key</td><td>Description</td></tr>
<tr><td>Name</td><td>The name of group</td></tr>
<tr><td>Gid</td><td>The ID number of group</td></tr>
<tr><td>members</td><td>The number of members belonging to the group</td></tr>
</table></td></tr>
<tr><td>filetype()</td><td>It takes filename as an argument and returns the type of specified file . the type of possible values are fifo, char, dir, block, link, file and unknown</td></tr>
<tr><td>basename()</td><td>It takes file name as an argument and separate the filename from its directory path.</td></tr>
<tr><td>copy()</td><td>It takes two string arguments referring to the source and destination file respectively.</td></tr>
<tr><td>rename()</td><td>It takes two argument as old name and new name and renames the file with new name.</td></tr>
<tr><td>unlink()</td><td>It takes a single argument referring to the name of file we want to delete.</td></tr>
<tr><td>is_file()</td><td>It returns true if the given file name refers to a regular file.</td></tr>
<tr><td>fstat()</td><td>The fstat() function returns information about an open file.</td></tr>
<tr><td></td><td>This function returns an array with the following elements:
[0] or [dev] - Device number
[1] or [ino] - Inode number
[2] or [mode] - Inode protection mode
[3] or [nlink] - Number of links
[4] or [uid] - User ID of owner
[5] or [gid] - Group ID of owner
[6] or [rdev] - Inode device type
[7] or [size] - Size in bytes
[8] or [atime] - Last access (as Unix timestamp)
[9] or [mtime] - Last modified (as Unix timestamp)
[10] or [ctime] - Last inode change (as Unix timestamp)
[11] or [blksize] - Blocksize of filesystem IO (if supported)
[12] or [blocks] - Number of blocks allocated</td></tr>
</table>

Examples

Use of some above mentioned functions is illustrated in the following examples:Example: 1) To read file from server use fread() function. A file pointer can be created to the file and read the content by specifying the size of data to be collected.

```
 <?php
$myfile = fopen("somefile.txt", "r") or die("Unable to open file!");
echo fread($myfile,filesize("somefile.txt"));
fclose($myfile);
?>
```

Example: 2) a file can be written by using fwrite() function in php. For this open filein write mode. file can be written only if it has write permission. if the file does not exist then one new file will be created. the file the permissions can be changed.

```
<?php
$filecontent="some text in file";          // store some text to enter inside the file
$file_name="test_file.txt";                // file name
$fp = fopen ($filename, "w");              // open the file in write mode, if it
does notexist then it will be created.
fwrite ($fp,$filecontent);                 // entering data to the file
fclose ($fp);                              // closing the file pointer
chmod($filename,0777);                     // changing the file permission.
?>
```

Example :

3) A small code for returning a **file-size.**

```
<?php
function dispfilesize($filesize)
{

    if(is_numeric($fil
    esize))
{
          $decr = 1024; $step = 0;
            $prefix =
            array('Byte','KB','MB','GB','TB','PB');
            while(($filesize / $decr) > 0.9)
{           $filesize = $filesize / $decr;
            $step++;
}
        return round($filesize,2).' '.$prefix[$step];
    }
      else
         {
         return 'NaN';
         }
}
?>
```

Accessing Databases (PostgreSQL)

PostgreSQL supports a wide variety of built-in data types and it also provides an option to the users to add new data types to PostgreSQL, using the CREATE TYPEcommand. Table lists the data types officially supported by PostgreSQL. Most datatypes supported by PostgreSQL are directly derived from SQL standards.

The following table contains PostgreSQL supported data types for your ready reference

Category	**Data type**	**Description**
Boolean	boolean, bool	A single true or false value.
Binary types	bit(n)	An n-length bit string (exactly n) binary bits)
	bit varying(n), varbit(n)	A variable n-length bit string (upton) binary nbits)
Character Types	character(n)	A fixed n-length character string
	char(n)	A fixed n-length character string
	character varying(n)	
	varchar (n)	
	text	A variable length character stringof unlimited length
Numeric types	smallint, int2	A signed 2-byte integer
	integer, int, int4	A signed, fixed precision 4-byte number
	bigint, int8	A signed 8-byte integer, up to 18 digits in length
	real, float4	A 4-byte floating point number
	float8, float	An 8-byte floating point number
	numeric(p,s)	An exact numeric type with arbituary precision p, and scale s.
Currency	money	A fixed precision, U.S style currency
	serial	An auto-incrementing 4-byte integer
Date and time types	date	The calendar date(day, monthand year)
	time	The time of day
	time with time zone	the time of day, including time zone information
	timestamp(includes time Interval)	An arbitrarily specified length

Functions used for PostgreSQL database manipulation

S. No.	API & Description
1	**resource pg_connect (string $connection_string [, int $connect_type])** This opens a connection to a PostgreSQL database specified by the connection_string. If PGSQL_CONNECT_FORCE_NEW is passed as connect_type, then a new connection is created in case of a second call to pg_connect(), even if the connection_string is identical to an existing connection.
2	**bool pg_connection_reset (resource $connection)** This routine resets the connection. It is useful for error recovery. Returns TRUE on success or FALSE on failure.
3	**int pg_connection_status (resource $connection)** This routine returns the status of the specified connection. Returns PGSQL_CONNECTION_OK or PGSQL_CONNECTION_BAD.
4	**string pg_dbname ([resource $connection])** This routine returns the name of the database that the given PostgreSQL connection resource.
5	**resource pg_prepare ([resource $connection], string $stmtname, string $query)** This submits a request to create a prepared statement with the given parameters and waits for completion.
6	**resource pg_execute ([resource $connection], string $stmtname, array $params)** This routine sends a request to execute a prepared statement with given parameters and waits for the result.

7	**resource pg_query ([resource $connection], string $query)** This routine executes the query on the specified database connection.
8	**array pg_fetch_row (resource $result [, int $row])** This routine fetches one row of data from the result associated with the specified result resource.
9	**array pg_fetch_all (resource $result)** This routine returns an array that contains all rows (records) in the result resource.
10	**int pg_affected_rows (resource $result)** This routine returns the number of rows affected by INSERT, UPDATE, and DELETE queries.
11	**int pg_num_rows (resource $result)** This routine returns the number of rows in a PostgreSQL result resource for example number of rows returned by SELECT statement.
12	**bool pg_close ([resource $connection])** This routine closes the non-persistent connection to a PostgreSQL database associated with the given connection resource.
13	**string pg_last_error ([resource $connection])** This routine returns the last error message for a given connection.
14	**string pg_escape_literal ([resource $connection], string $data)** This routine escapes a literal for insertion into a text field.

15	**string pg_escape_string ([resource $connection], string $data)** This routine escapes a string for querying the database.

Connecting to Database

pg_connect ( ) — is used to open a PostgreSQL connection.

Syntax :

resource pg_connect (string $connection_string **[, int** $connect_type **])**

pg_connect() opens a connection to a PostgreSQL database specified by the connection_string.

If a second call is made to **pg_connect()** with the same connection_string as an existing connection, the existing connection will be returned unless you pass PGSQL_CONNECT_FORCE_NEW as connect_typ

The following PHP code shows how to connect to an existing database on a local machine and finally a database connection object will be returned.

```
$db=pg_connect(“dbname=sonal”);

$db=pg_connect(“host=localhost  port= 5432 dbname=sonal”);

$db=pg_connect(“host=localhost port=5432 dbname=sonal

                    user=postgres password=redhat”);
```

```
<?php
  $host        = "host = 127.0.0.1";
  $port        = "port = 5432";
  $dbname      = "dbname = testdb";
  $credentials = "user = postgres password=pass123";
  $db = pg_connect( "$host $port $dbname $credentials"  );
  if(!$db) {
    echo "Error : Unable to open database\n";
  } else {
    echo "Opened database successfully\n";
  }
```

```
?>
```

Now, let us run the above given program to open our database **testdb**: if the database is successfully opened, then it will give the following message −

```
Opened database successfully
```

Closing Connection:

pg_close()- function closes a POSTgreSQL connection

pg_close — Closes a PostgreSQL connection

syntax :

bool **pg_close** ([resource $connection])

pg_close() closes the non-persistent connection to a PostgreSQL database associated with the given connection resource.

Execute A Query :

pg_query — to Execute a query

syntax :

resource **pg_query** ([resource $connection], string $query)

pg_query() executes the query on the specified database connection.

Create a Table

The following PHP program will be used to create a table in a previously created database −

```
<?php
   $host        = "host = 127.0.0.1";
   $port        = "port = 5432";
   $dbname      = "dbname = testdb";
   $credentials = "user = postgres password=pass123";

   $db = pg_connect( "$host $port $dbname $credentials"  );
   if(!$db) {
      echo "Error : Unable to open database\n";
   } else {
      echo "Opened database successfully\n";
   }

   $sql =<<<EOF
      CREATE TABLE COMPANY
      (ID INT PRIMARY KEY     NOT NULL,
      NAME           TEXT    NOT NULL,
      AGE            INT     NOT NULL,
      ADDRESS        CHAR(50),
      SALARY         REAL);
EOF;
   $ret = pg_query($db, $sql);
   if(!$ret) {
      echo pg_last_error($db);
   } else {
      echo "Table created successfully\n";
   }
   pg_close($db);
?>
```

When the above given program is executed, it will create COMPANY table in your **testdb** and it will display the following messages −

```
Opened database successfully
Table created successfully
```

INSERT Operation

The following PHP program shows how we can create records in our COMPANY table created in above example −

```
<?php
   $host        = "host=127.0.0.1";
   $port        = "port=5432";
   $dbname      = "dbname = testdb";
```

```
  $credentials = "user = postgres password=pass123";

  $db = pg_connect( "$host $port $dbname $credentials"  );
  if(!$db) {
    echo "Error : Unable to open database\n";
  } else {
    echo "Opened database successfully\n";
  }



$sql =<<<EOF
    INSERT INTO COMPANY (ID,NAME,AGE,ADDRESS,SALARY)
    VALUES (1, 'Paul', 32, 'California', 20000.00 );

    INSERT INTO COMPANY (ID,NAME,AGE,ADDRESS,SALARY)
    VALUES (2, 'Allen', 25, 'Texas', 15000.00 );

    INSERT INTO COMPANY (ID,NAME,AGE,ADDRESS,SALARY)
    VALUES (3, 'Teddy', 23, 'Norway', 20000.00 );

    INSERT INTO COMPANY (ID,NAME,AGE,ADDRESS,SALARY)
    VALUES (4, 'Mark', 25, 'Rich-Mond ', 65000.00 );
EOF;

  $ret = pg_query($db, $sql);
  if(!$ret) {
    echo pg_last_error($db);
  } else {
    echo "Records created successfully\n";
  }
  pg_close($db);
?>
```

When the above given program is executed, it will create the given records in COMPANY table and will display the following two lines −

```
Opened database successfully
Records created successfully
```

pg_fetch_row

pg_fetch_row — Get a row as an enumerated array

Description

array **pg_fetch_row** (resource $result [, int $row])

pg_fetch_row() fetches one row of data from the result associated with the specified result resource.

Note: This function sets NULL fields to the PHP NULL value.

Parameters_

result

> PostgreSQL query result resource, returned by pg_query(), pg_query_params() or pg_execute() (among others).

row

> Row number in result to fetch. Rows are numbered from 0 upwards. If omitted or NULL, the next row is fetched.

Return Values

An array, indexed from 0 upwards, with each value represented as a string. Database *NULL* values are returned as NULL.

FALSE is returned if row exceeds the number of rows in the set, there are no more rows, or on any other error.

SELECT Operation

The following PHP program shows how we can fetch and display records from our COMPANY table created in above example −

```
<?php
  $host        = "host = 127.0.0.1";
  $port        = "port = 5432";
  $dbname      = "dbname = testdb";
  $credentials = "user = postgres password=pass123";

  $db = pg_connect( "$host $port $dbname $credentials"  );
  if(!$db) {
    echo "Error : Unable to open database\n";
  } else {
    echo "Opened database successfully\n";
  }

  $sql =<<<EOF
    SELECT * from COMPANY;
EOF;

  $ret = pg_query($db, $sql);
  if(!$ret) {
    echo pg_last_error($db);
    exit;
  }
  while($row = pg_fetch_row($ret)) {
    echo "ID = ". $row[0] . "\n";
    echo "NAME = ". $row[1] ."\n";
    echo "ADDRESS = ". $row[2] ."\n";
    echo "SALARY =  ".$row[4] ."\n\n";
  }
  echo "Operation done successfully\n";
  pg_close($db);
```

```
?>
```

When the above given program is executed, it will produce the following result. Keep a note that fields are returned in the sequence they were used while creating table.

```
Opened database successfully
ID = 1
NAME = Paul
ADDRESS = California
SALARY =  20000

ID = 2
NAME = Allen
ADDRESS = Texas
SALARY =  15000

ID = 3
NAME = Teddy
ADDRESS = Norway
SALARY =  20000

ID = 4
NAME = Mark
ADDRESS = Rich-Mond
SALARY =  65000

Operation done successfully
```

UPDATE Operation

The following PHP code shows how we can use the UPDATE statement to update any record and then fetch and display updated records from our COMPANY table −

```
<?php
  $host        = "host=127.0.0.1";
  $port        = "port=5432";
  $dbname      = "dbname = testdb";
  $credentials = "user = postgres password=pass123";


  $db = pg_connect( "$host $port $dbname $credentials"  );
  if(!$db) {
     echo "Error : Unable to open database\n";
  } else {
     echo "Opened database successfully\n";
```

```
   }
   $sql =<<<EOF
      UPDATE COMPANY set SALARY = 25000.00 where ID=1;
EOF;
   $ret = pg_query($db, $sql);
   if(!$ret) {
      echo pg_last_error($db);
      exit;
   } else {
      echo "Record updated successfully\n";
   }

   $sql =<<<EOF
      SELECT * from COMPANY;
EOF;

   $ret = pg_query($db, $sql);
   if(!$ret) {
      echo pg_last_error($db);
      exit;
   }
   while($row = pg_fetch_row($ret)) {
      echo "ID = ". $row[0] . "\n";
      echo "NAME = ". $row[1] ."\n";
      echo "ADDRESS = ". $row[2] ."\n";
      echo "SALARY =  ".$row[4] ."\n\n";
   }
   echo "Operation done successfully\n";
   pg_close($db);
?>
```

When the above given program is executed, it will produce the following result −

```
Opened database successfully
```

```
Record updated successfully
ID = 2
NAME = Allen
ADDRESS = 25
SALARY =  15000

ID = 3
NAME = Teddy
ADDRESS = 23
SALARY =  20000

ID = 4
NAME = Mark
ADDRESS = 25
SALARY =  65000

ID = 1
NAME = Paul
ADDRESS = 32
SALARY =  25000

Operation done successfully
```

DELETE Operation

The following PHP code shows how we can use the DELETE statement to delete any record and then fetch and display the remaining records from our COMPANY table −

```
<?php
   $host        = "host = 127.0.0.1";
   $port        = "port = 5432";
   $dbname      = "dbname = testdb";
   $credentials = "user = postgres  password=pass123";


   $db = pg_connect( "$host $port $dbname $credentials"  );
   if(!$db) {
      echo "Error : Unable to open database\n";
   } else {
      echo "Opened database successfully\n";
   }
   $sql =<<<EOF
      DELETE from COMPANY where ID=2;
```

```
EOF;
   $ret = pg_query($db, $sql);
   if(!$ret) {
      echo pg_last_error($db);
      exit;
   } else {
      echo "Record deleted successfully\n";
   }

   $sql =<<<EOF
      SELECT * from COMPANY;
EOF;

   $ret = pg_query($db, $sql);
   if(!$ret) {
      echo pg_last_error($db);
      exit;
   }
   while($row = pg_fetch_row($ret)) {
      echo "ID = ". $row[0] . "\n";
      echo "NAME = ". $row[1] ."\n";
      echo "ADDRESS = ". $row[2] ."\n";
      echo "SALARY =  ".$row[4] ."\n\n";
   }
   echo "Operation done successfully\n";
   pg_close($db);
?>
```

When the above given program is executed, it will produce the following result −

```
Opened database successfully
Record deleted successfully
ID = 3
NAME = Teddy
ADDRESS = 23
SALARY =  20000
```

```
ID = 4
NAME = Mark
ADDRESS = 25
SALARY =  65000

ID = 1
NAME = Paul
ADDRESS = 32
SALARY =  25000

Operation done successfully
```

SetA

Q1.Write a program to read one file and display the contents of the file with its size.

Q2. Consider the following entities and their relationships

Event (eno , title , date)
Committee (cno , name, head , from_time ,to_time , status)

Event and Committee have many to many relationship. Write a script to accept title of event and modify status committee as working.

SetB

Q1) Write a program to read a flat file "item.dat", which contains details of 5 different items such as Item code, Item Name, unit sold, and Rate. Display the Bill in tabular format.

Q2) Considerer the following entities and their relationships
Student (Stud_id,name,class)
Competition (c_no,c_name,type)
Relationship between student and competition is many-many with attribute rank and year. Create a RDB in 3NF for the above and solve the following. Using above database write a script in PHP to accept a competition name from user and display information of student who has secured 1st rank in that competition.

SetC

Q 1. Write a menu driven program to perform various file operations. Accept filename from user.

a) Display type of file.
b) Display last access time of file
c) Display the size of file
d) Delete the file

Q 2. Property (pno, description, area)

a. Owner (oname, address, phone)

b. An owner can have one or more properties, but a property belongs to exactly one owner.

c. Accept owner name from the user. Write a PHP script which will display all properties which are own by that owner

Signature of the instructor: ____________________ Date :_____________

Assignment Evaluation

0:Not Done	2:Late Complete	4:Complete	□
1:Incomplete □	3:Needs Improvement	5: Well Done	□