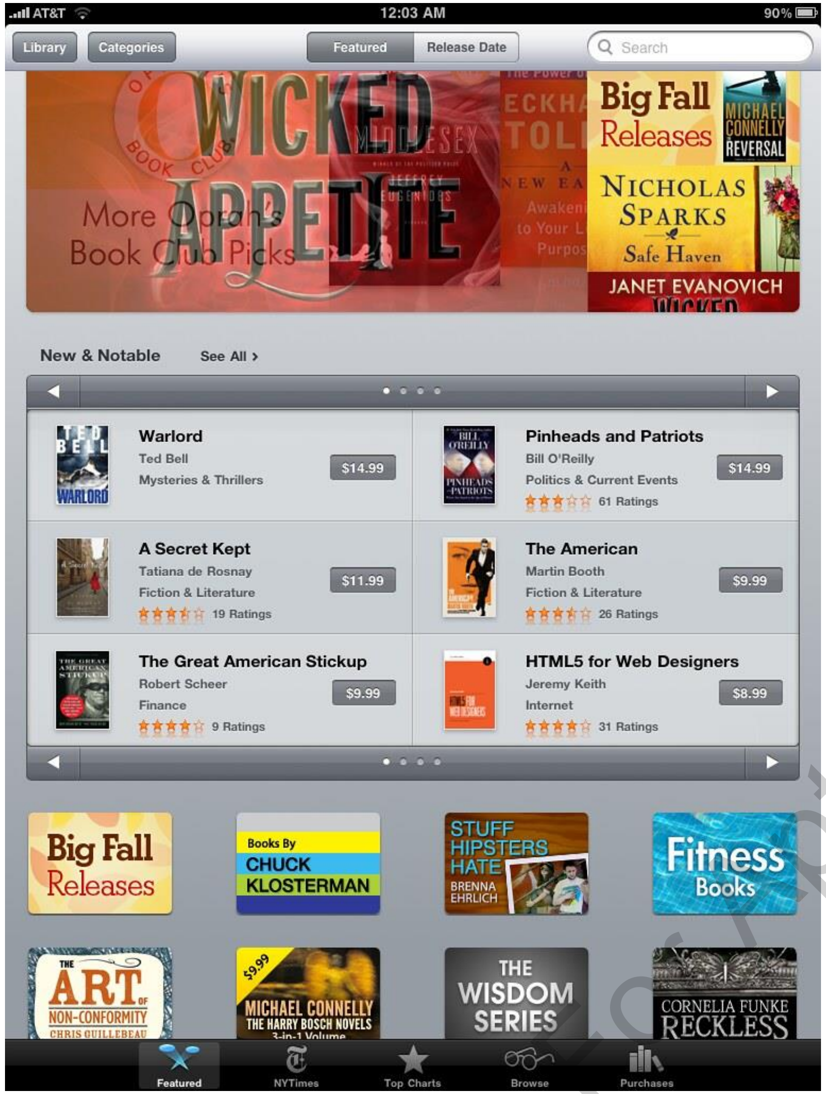
Session: 9

HTML Layout, Forms, and Elements

Objectives

- Explain HTML5 semantic tags
- Explain HTML5 semantic tag layouts
- Explain the usage of navigation bar
- Describe a text-based and graphical navigation bar
- Explain image mapping
- Explain divisions in HTML5
- Describe HTML5 forms
- Explain the working of new input types in HTML5
- Explain the new Form attributes
- Explain the new Form elements
- Define hidden fields

Introduction


AT&T
12:03 AM
90%
Library
Categories
Featured
Release Date
Search
WICKED APPETITE
More Oprah's Book Club Picks
Big Fall Releases
MICHAEL CONNELLY REVERSAL
NICHOLAS SPARKS Safe Haven
JANET EVANOVICH
New & Notable
See All ›
Big Fall Releases
Books By CHUCK KLOSTERMAN
STUFF HIPSTERS HATE BRENNA EHRLICH
Fitness Books
THE ART OF NON-CONFORMITY CHRIS GUILLEBEAU
$9.99 MICHAEL CONNELLY THE HARRY BOSCH NOVELS 3-in-1 Volume
THE WISDOM SERIES
CORNELIA FUNKE RECKLESS
Featured
NYTimes
Top Charts
Browse
Purchases

Warlord
Ted Bell
Mysteries & Thrillers
$14.99

Pinheads and Patriots
Bill O'Reilly
Politics & Current Events
61 Ratings
$14.99

A Secret Kept
Tatiana de Rosnay
Fiction & Literature
19 Ratings
$11.99

The American
Martin Booth
Fiction & Literature
26 Ratings
$9.99

The Great American Stickup
Robert Scheer
Finance
9 Ratings
$9.99

HTML5 for Web Designers
Jeremy Keith
Internet
31 Ratings
$8.99

HTML5 provides:

- Semantic markup for easy understanding.
- New features to make Web forms a lot easier to write.
- Hidden element feature for better security.

HTML5 Semantic Tags

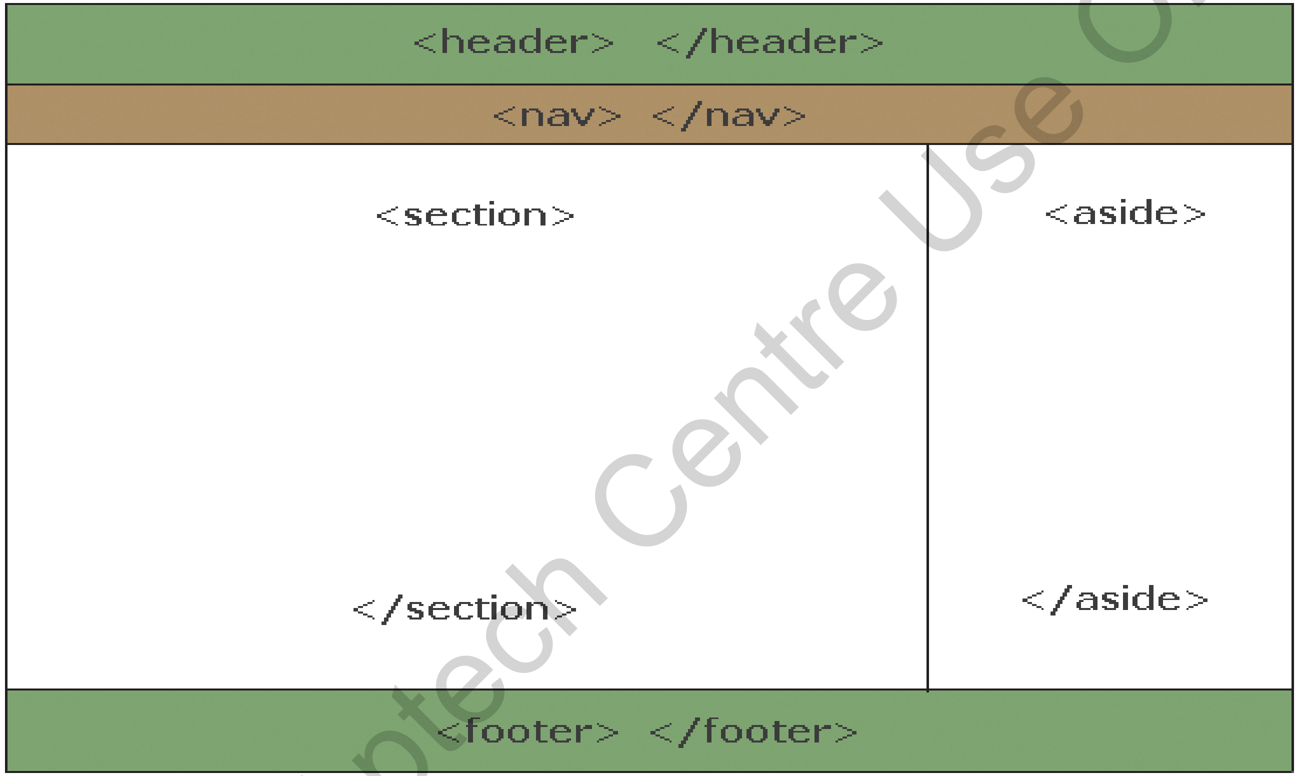
Structural Semantic Tags

- Are block level elements
- Structure pages

Text-level Semantic Tags

- Inline elements
- Makes text more expressive

Structural Semantic Tags

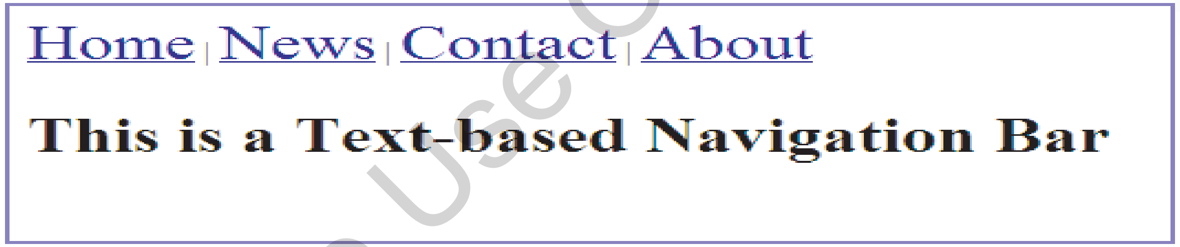


Text-level Semantic Tags

Text-level Semantic Tag	Description
<a>	Helps creates hyperlinks, such as to Web pages and files.
<b>	Bolds text.
<br>	Gives a line break. This is usually used to write an address.
<em>	Emphasizes text.
<mark>	Highlights text for reference or notation purposes
<time>	Indicates a specific period in time. The datetime attribute might be included so that custom features such as reminders can be added.
<u>	Indicates text to be underlined

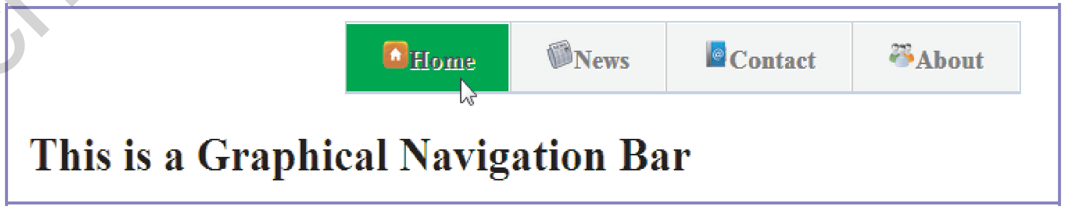
Navigation Bar 1-8

Text-based



This is a Text-based Navigation Bar

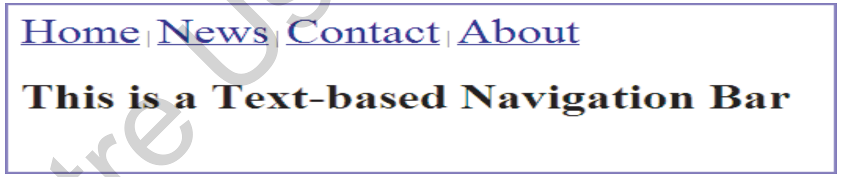
Graphical



This is a Graphical Navigation Bar

Navigation Bar 2-8

```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<nav>
<a href="/home/"><font size="6">Home</font></a> |
<a href="/news/"><font size="6">News</font></a> |
<a href="/contact/"><font size="6">Contact</font></a> |
<a href="/about/"><font size="6">About</font></a>
</nav>
<h1>This is a Text-based Navigation Bar</h1>
</body>
</html>
```



Home | News | Contact | About

This is a Text-based Navigation Bar

Text-based Navigation Bar

Navigation Bar 3-8

```
<!DOCTYPE html>
<html>
<head>
<style>
/* Main Navigation */ #nav {
 position:relative; width:620px; margin:0 auto; margin-
 top:50px; padding:10px;
}
ul#navigation { margin:0px auto; position:relative;
float:left;
 border-left:1px solid #c4dbe7; border-right:1px solid #c4dbe7;
}
ul#navigation li { display:inline; font-size:12px;
 font-weight:bold; margin:0; padding:0; float:left;
 position:relative;
border-top:1px solid #c4dbe7; border-bottom:2px solid #c4dbe7;
}
ul#navigation li a {
 padding:10px 25px;
```

Navigation Bar 4-8

```
  color:#616161;
 text-shadow:1px 1px 0px #fff; text-
 decoration:none; display:inline-
 block;
 border-right:1px solid #fff;
 border-left:1px solid #C2C2C2;
 border-top:1px solid #fff;
 background: #f5f5f5;
 -webkit-transition:color 0.2s linear, background 0.2s linear;
 -moz-transition:color 0.2s linear, background 0.2s linear;
-o-transition:color 0.2s linear, background 0.2s linear;
 transition:color 0.2s linear, background 0.2s linear;
}
ul#navigation li a:hover {
 background:#f8f8f8;
 color:#282828;
}
ul#navigation li a.first {
 border-left: 0 none;
}
ul#navigation li a.last {
 border-right: 0 none;
}
```

Navigation Bar 5-8

```
 ul#navigation li:hover > a {
  background:#00FF00;
 }
 /* Drop-Down Navigation */ ul#navigation li:hover > ul
 {
 /*these two styles are very important,
 being the ones which make the drop-down to appear on hover */ visibility:visible;
  opacity:1;
 }
 ul#navigation ul, ul#navigation ul li ul { list-style: none;
  margin: 0;
  padding: 0;

/*the next two styles are very important,
    being the ones which make the drop-down to stay hidden */ visibility:hidden;
     opacity:0;
     position: absolute;
    z-index: 99999; width:180px; background:#f8f8f8;
     box-shadow:1px 1px 3px #ccc;
```

Navigation Bar 6-8

```
/* css3 transitions for smooth hover effect */
     -webkit-transition:opacity 0.2s linear, visibility 0.2s linear;
     -moz-transition:opacity 0.2s linear, visibility 0.2s linear;

     -o-transition:opacity 0.2s linear, visibility 0.2s

     linear;  transition:opacity 0.2s linear, visibility

     0.2s linear;
}
    ul#navig

     ation ul

     {  top:

     43px;
     left: 1px;
}
    ul#navigation ul li ul {
top: 0;
     left: 181px; /* strong related to width:180px; from above */
}
```

Navigation Bar 7-8

```
    ul#navigation ul li
     { clear:both;
     width:100%;
border:0 none;
     border-bottom:1px solid #c9c9c9;
}
    ul#navigation ul li a
     { background:none;
     padding:7px 15px;
     color:#616161;
     text-shadow:1px 1px 0px #fff;
 text-decoration:none;
display:inline-block;
```

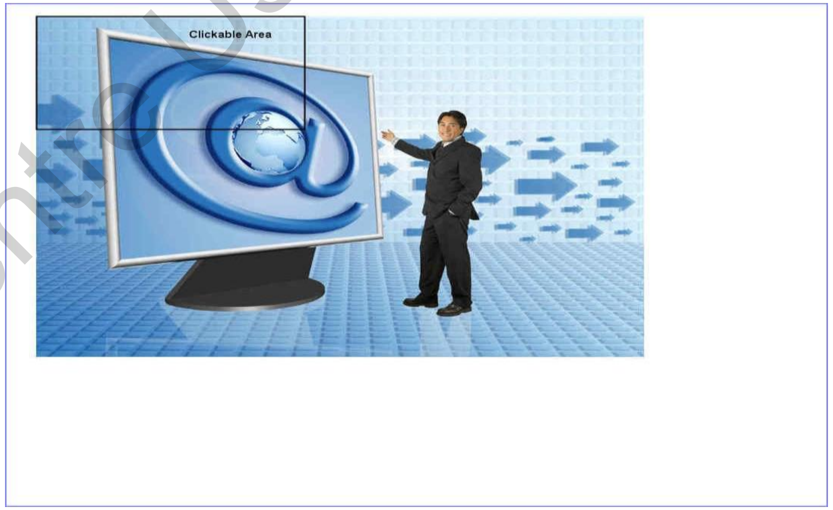
Navigation Bar 8-8

```
 border:0 none; float:left;
 clear:both; width:150px;
}
</style>
</head>
<body>
<nav id="nav">
<ul id="navigation">
<li><a href=""><font size="4"><img src="Home-icon.png" height="20"
width="20">Home</img></font></a></li>
<li><a href=""><font size="4"><img src="icon-news.png" height="20"
width="20">News</font></a></li>
<li><a href=""><font size="4"><img src="Address-Book-icon.png" height="20"
width="20">Contact</font></a></li>
<li><a href=""><font size="4"><img src="User group.png" height="20"
width="20">About</font></a></li>
</nav>
<br/>
<br/>
<br/>
<br/>
<h1>This is a Graphical Navigation Bar</h1>
</body>
</html>
```

Image Map

- An image map includes clickable areas.
- The `<map>` tag defines an image map.

```
<!DOCTYPE html>
<html>
<body>
<img src="6.jpg" width="600" height="300" alt="cake"
usemap="#cakemap" />
<map name="cakemap">
 <area shape="circle" coords="0,0,200,600" href="4.html"
 alt="cake" />
</map>
</body>
</html>
```



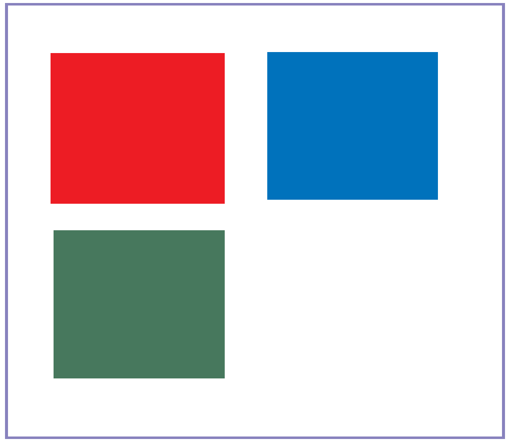
Output of Image Map

Divisions

- Division is represented by the `<div>` tag.
- It defines a division or a section in an HTML document.
- The `<div>` tag is:
  - Used as a container for HTML elements. This can be styled with CSS or manipulated with JavaScript.
  - Styled by using the class or id attribute.
- It can hold any content.

Divisions

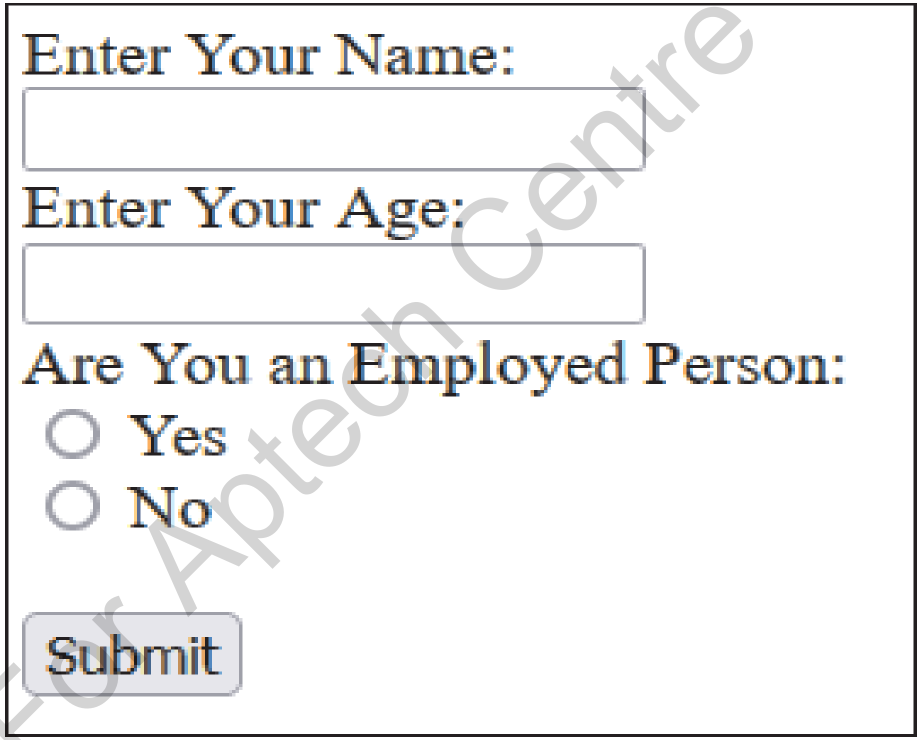
```
.lCard{ width: 100px;
height:100px;
background-color:blue; padding:
6px; position:fixed; left:450px;
top:100px;
}
.rCard{
width: 100px; background-
color:red; padding: 7px;
position:relative; top:93px;
left:300px;
}
.bCard{ width: 100px;
height:100px;
background-color:green; padding:
6px; position:absolute;
left:310px; bottom:320px;
}
```



Output of Division Positioning

Introduction to HTML5 Forms

- An HTML form is used to collect user input.
- The user input is usually sent to a server for processing.
- The `<form>` element creates an HTML form for user input.



Enter Your Name:

Enter Your Age:

Are You an Employed Person:

○ Yes

○ No

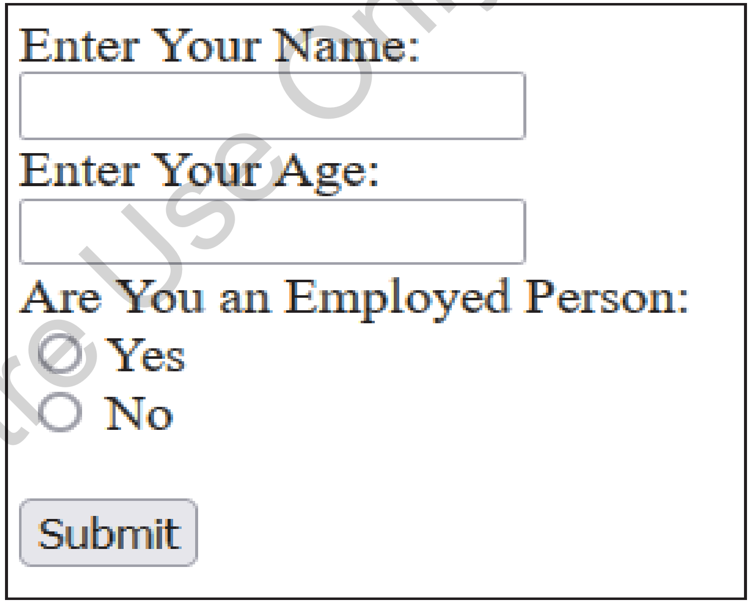
Introduction to HTML5 Forms

Type	Description
`<input type="text">`	Used for a single-line text input field
`<input type="radio">`	Used for a radio button
`<input type="checkbox">`	Used for a check box
`<input type="submit">`	Used for a submit button
`<input type="button">`	Used for a clickable button

Common Input Types in HTML5

Introduction to HTML5 Forms

```
<!DOCTYPE html>
<html>
<head>
<title>FormDemo</title>
</head>
<body>
<form method="get" action="test.html">
<label>Enter Your Name:</label><br/>
<input type="text" value="" id="name" /><br/>
<label>Enter Your Age: </label><br/>
<input type="text" value="" id="age" /><br/>
<label>Are You an Employed Person:</label><br/>
<input type="radio" value="Yes" id="Yes" />
<label for="Yes">Yes</label><br>
<input type="radio" value="No" id="No" />
<label for="No">No</label><br>
<br/>
<input type="submit" value="Submit"/>
</form>
</body>
</html>
```



Enter Your Name:

Enter Your Age:

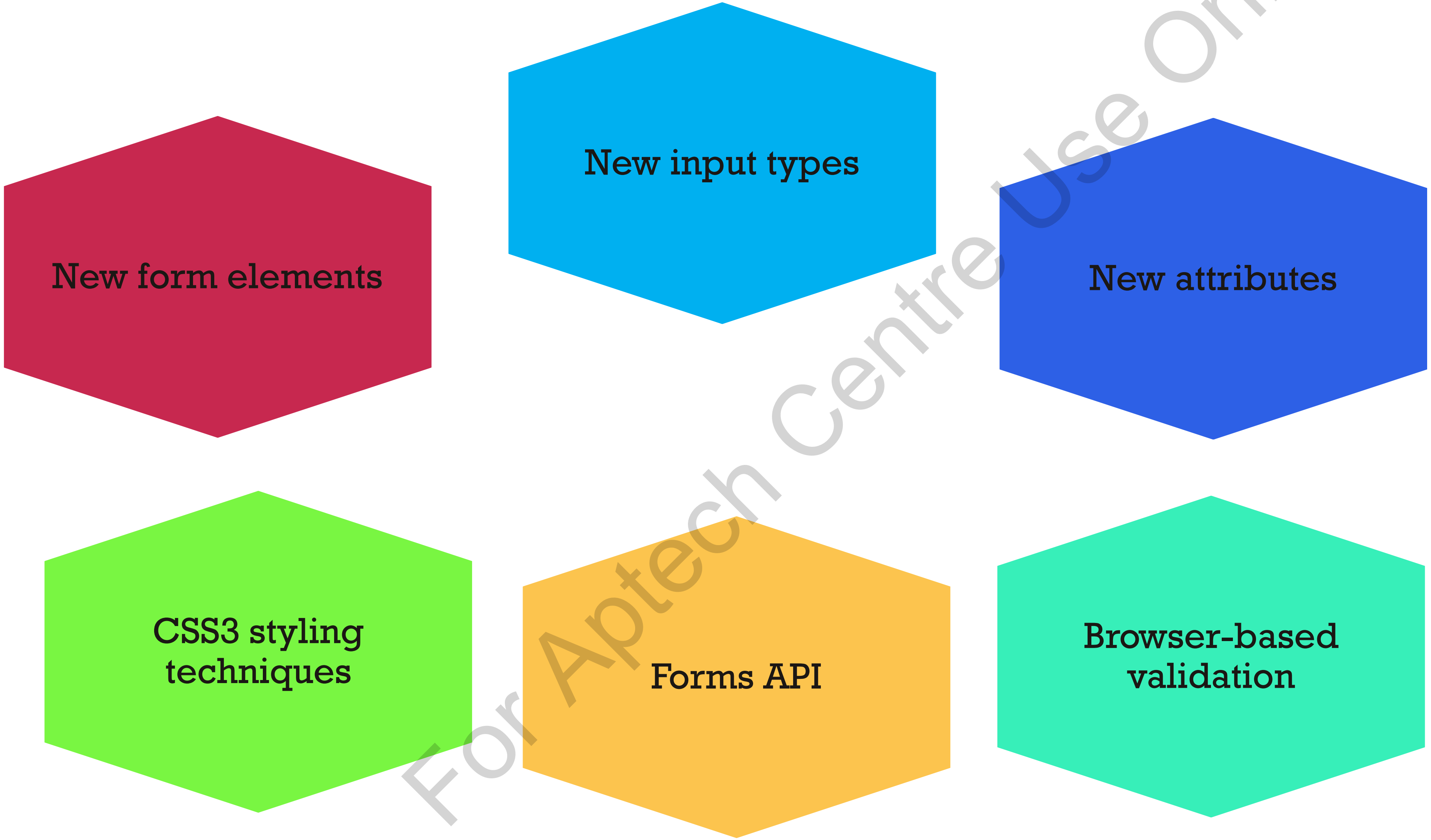
Are You an Employed Person:

○ Yes

○ No

Output Showing HTML Form

New Features in HTML5 Forms



New form elements

New input types

New attributes

CSS3 styling techniques

Forms API

Browser-based validation

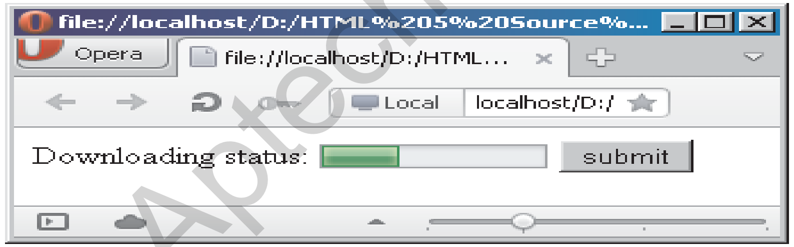
New Form Elements 1-2

Element	Description
`progress`	Represents the completion progress of a task on the page
`meter`	Represents a scale of known range
`datalist`	Represents a set of options used with list attribute to make a drop-down control
`output`	Represents the result of a calculation

New Elements in HTML5

New Form Elements 2-2

```
<label> Downloading status: </label>
 <progress value="35" max="100" >
 </progress>
 <input type="submit" value="submit"/>
```


file://localhost/D:/HTML%205%20Source%...
Opera
file://localhost/D:/HTML...
Local
localhost/D:/
submit

Downloading status:

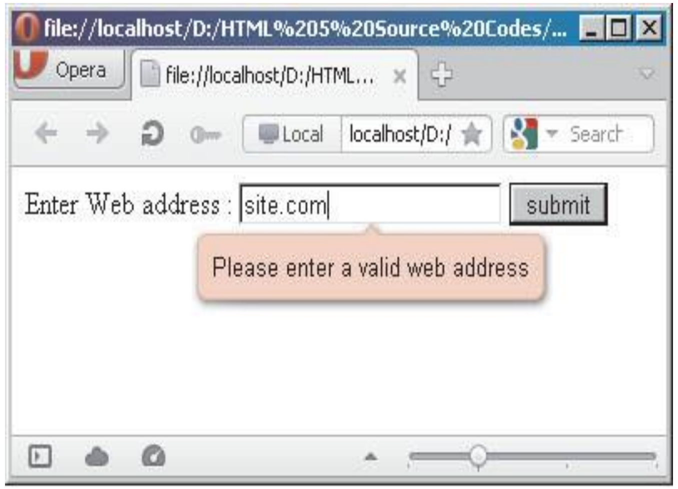
Progress Element

New Input Types 1-2

Type	Description
`email`	Represents the completion progress of a task on the page
`search`	Represents a scale of known range
`url`	Represents a set of options used with list attribute to make a drop-down control
`tel`	Represents the result of a calculation
`number`	Represents a numeric value in the input field
`range`	Represents a numeric value to be selected from a range of numbers
`date`	Represents a calendar which is shown at each click upon the field
`week`	Represents date in year-week format
`month`	Represents a value with year-month format
`time`	Represents a value in hours and minutes format
`datetime`	Represents a full date and time input field with a time zone
`color`	Represents a predefined interface for selecting color

New Input Types 2-2

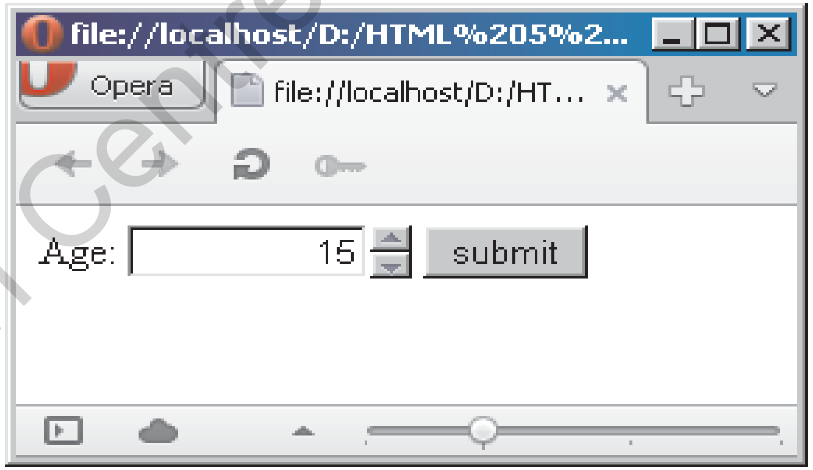
```
<label for="url">Enter your Web page address:</label>
 <input type="url" value="" id="urlname" name="urltext"
       maxlength="255" />
 <input type="submit" value="submit"/>
```


file://localhost/D:/HTML%205%20Source%20Codes/...
Opera
file://localhost/D:/HTML...
Local
localhost/D:/
Search
submit

Enter Web address : site.com

Please enter a valid web address

Error Message for Incorrect URL



Age: 15

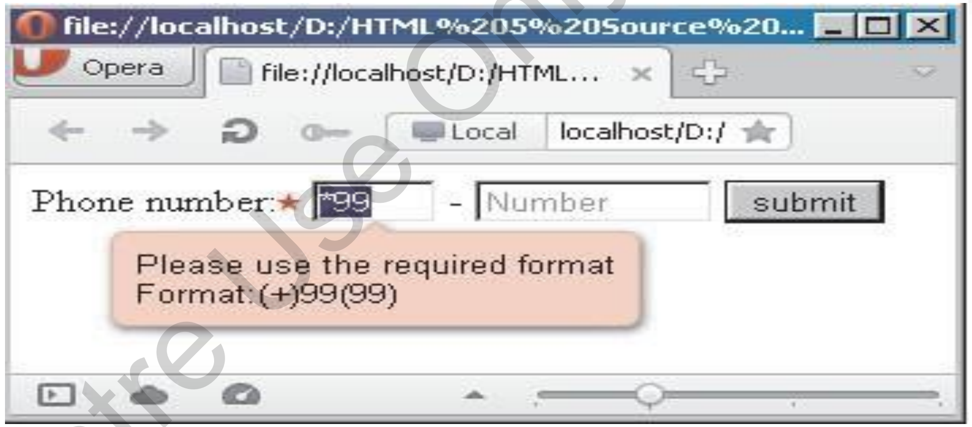
Number Input Type

New Form Attributes 1-2

Type	Description
`placeholder`	Represents a hint that help users to enter the correct data in the field
`required`	A Boolean attribute that validates the entry in the field
`multiple`	A Boolean attribute that allows multiple values to be entered in the field
`autofocus`	Focuses the input element on page load
`pattern`	Represents a regular expression for validating the field's value
`form`	Allows the elements to reference the form by including the form name

New Form Attributes 2-2

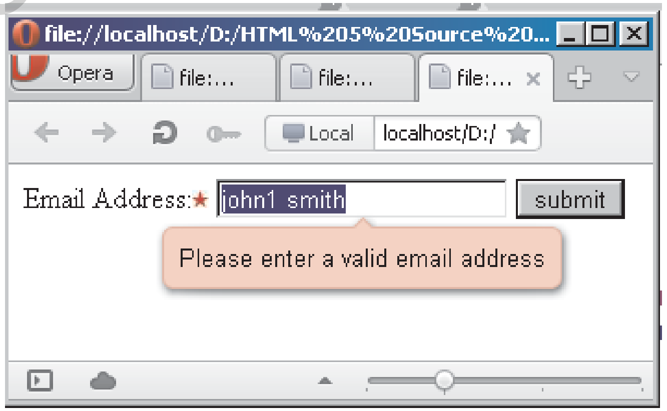
```
 <label>Phone number:<img src="required_star.gif" height="10px"
   width="10px"/></label>
 <input type="tel" value="" size="4" maxlength="5" tabindex="11"
  required="true" placeholder="Code"pattern="[+0-9]{1,4}"
  title="Format:(+)99(99)"/>
 <label>-</label>
 <input type="tel" value="" size="10" maxlength="12"
    tabindex="13" required="true" placeholder="Number"
pattern="[0-9]{8,}"  title="Minimum 8 numbers"/>
```


file://localhost/D:/HTML%205%20Source%20...
Opera
file://localhost/D:/HTML...
Local
localhost/D:/
submit

Phone number:★ *99 - Number

Please use the required format
Format:(+)99(99)

Message of Pattern Attribute



Email Address:★ john1 smith

Please enter a valid email address

Validation of Multiple E-mail Address

Browser-based Validation and CSS Styling Techniques

- The new attributes such as `required` and `pattern` can be used with the input elements to perform validation.
- Web developers need not have to write separate JavaScript code for client-side validation.
- Input field with required attribute can be styled using CSS.
  - This makes it easier for user to navigate and complete the form.

Forms API

Events and Methods	Description
`setCustomValidity (message)`	Sets the custom error message that is displayed when the form is submitted by the user
`checkValidity()`	Checks the validity of the e-mail address entered by the user
`oninvalid`	Allows script to run only when the element is invalid
`onforminput`	Allows script to run when the form gets an input from the user
`onformchange`	Represents a regular expression for validating the field's value
`form`	Allows script to run when the form changes

Hidden Elements 1-3

- Hidden Elements remain out of the sight of user when filling out a form.
- The fields can have a default value.
- The information in hidden fields is processed by the server after the form is submitted.
- Common uses are as follows:
  - To track edited content
  - To improve Website security

Hidden Elements 2-3

```
<<div class="container">
<form>
    <div class="input-group">
        <label for="title">Post title:</label>
        <input type="text" id="title" name="title" value="My latest trip to
              Bulgaria">
    </div>
    <div class="input-group">
        <label for="content">Post content:</label>
        <textarea id="content" name="content" cols="60" rows="5">
            Hope You enjoy it!
    </textarea>
    </div >
    <div class="input-group">
        <button type="submit">Update post</button>
    </div>
    <input type="hidden" id="postId" name="postId" value="23678">
</form>
</div>
```

Hidden Elements 3-3

```
.container{
 display:
 flex;
    justify-content: center;
    align-items: center;
 height: 100vh;
}
.container form{
    padding: 50px;
    border-radius:
    2px;
    border: 1px solid black;
}
.input-group{
    margin-bottom: 10px;
    display: flex;
}
input ,
    textarea{
    flex: 6;
}
label{
    line-height: 2;
    flex: 2;
}
textarea{
 height: 60px;
}
```

```
title=My+latest+trip+to+B
ulgaria+post&content=+Hop
e+You+enjoy+it
0D%0A++++&postId=23678
```

Data Sent to Server

Data Attributes

- A data attribute helps store custom data on an HTML element.
- It can be called using JavaScript.
- **Syntax:** `<element data-<attribute_name>="value">`

Summary

- HTML5 has introduced two types of semantic tags. They are namely, text-level and structural.
- Some of the structural semantic tags include section, header, footer, and so on.
- Text-level semantic tags include mark, time, meter, and progress.
- Text-based navigation bars are created as stand-alone navigation bars that are not associated with icons. Text-based navigation bar is easy to create and can be displayed in any Web browsers.
- Graphical navigation bar is better than text-based navigation as it gives a visual appeal to the visiting users.
- Div can be used when there is no other semantically appropriate element left that suits the purpose in a Web page development.
- HTML5 introduces new form elements such as new input types, new attributes, browser-based validation, CSS3 styling techniques, and forms API.
- HTML5 provides new input types that are data-specific user interface elements such as email, URL, number, range, date, tel, and color.
- The new form elements introduced in HTML5 are namely, datalist, progress, meter, and output.
- In HTML5, one can use the submit input type for form submission.
- Hidden elements remain out of the sight of user and can be used to transmit sensitive information to the server.