

# CSE417: WEB ENGINEERING

Daffodil International University

# You Will Be Able To

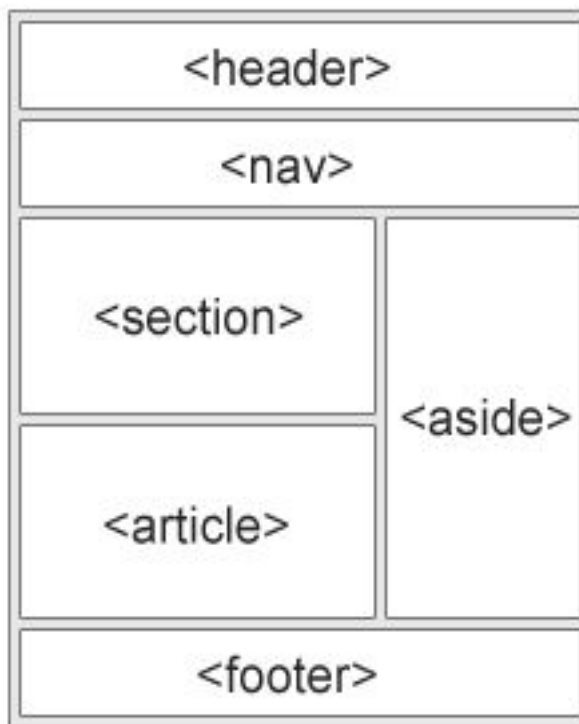
- ✓ Understand and Apply Layout
- ✓ To design your webpage efficiently

# Contents

- Layout
  - HTML Layout - Using <div> tag
  - HTML Layout - Using Tables
  - CSS Box Model
  - Others

# Website Layout Using HTML5

- HTML5 offers new semantic elements that define different parts of a web page:



- `<header>` - Defines a header for a document or a section
- `<nav>` - Defines a container for navigation links
- `<section>` - Defines a section in a document
- `<article>` - Defines an independent self-contained article
- `<aside>` - Defines content aside from the content (like a sidebar)
- `<footer>` - Defines a footer for a document or a section
- `<details>` - Defines additional details
- `<summary>` - Defines a heading for the `<details>` element

# HTML Layouts , <div> tag

## Layout

- A webpage layout is very important to give better look to your website.
- It takes considerable time to design a website's layout with great look and feel.
- you can create a good layout using simple HTML tables or division tags in combination with other formatting tags.

## <div> tag

- The <div> tag defines a division or a section in an HTML document.
- The <div> tag is nothing more than a container unit
- Used to group block-elements to *format them with CSS and layout a web page.*
- By default, browsers always place a line break before and after the <div> element. However, this can be changed with CSS.

# HTML <div> tag

- Probably the most common use for the <div> tag is for navigation bars
- <div> is a block-level tag (like a paragraph)
- Can contain any number of block-level tags or inline tags
  - Can group paragraphs, with lists, with tables, e.g.
- <div> tags will most often be used inside the <body> tag and inside other <div> tags
  - Can be nested
- Often <div> tags are modified using the id attribute, rather than class
  - You only have one navigation bar
  - The properties you want for a certain portion of your page are unique
- Can't place a <div> tag inside a paragraph

# HTML <div> tag

```
<div id="myDiv" name="myDiv" title="Example Div Element"
  style="font-family: Helvetica; font-size: 12pt;
  border: 1px solid black;">
```

```
<div id="subDiv1" name="subDiv1" title="Subdivision Div Element"
  style="color: #FF0000; border: 1px dotted black;">
```

```
  <h5>Section 1</h5>
```

```
    <p>This paragraph would be your content paragraph...</p>
```

```
    <p>Here's another content article right here.</p>
```

```
</div>
  <br />
```

```
<div id="subDiv2" name="subDiv2" title="Subdivision Div Element"
  style="color: #FF00FF;border: 1px dashed black;">
```

```
  <h5>Section 2</h5>
```

```
    <p>This paragraph would be your content paragraph...</p>
```

```
    <p>Here's another content article right here.</p>
```

```
</div>
```

```
</div>
```

# HTML <div> Tag

## Section 1

This paragraph would be your content paragraph...

Here's another content article right here.

## Section 2

This paragraph would be your content paragraph...

Here's another content article right here.



# Website Layout

## City Gallery

London

Paris

Tokyo

### London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.

# Website Layout

```
<style>
#header {
  background-color:black;
  color:white;
  text-align:center;
  padding:5px;
}
#nav {
  line-height:30px;
  background-color:#eeeeee;
  height:300px;
  width:100px;
  float:left;
  padding:5px;
}
#section {
  width:350px;
  float:left;
  padding:10px;
}
#footer {
  background-color:black;
  color:white;
  clear:both;
  text-align:center;
  padding:5px;
}
</style>
```

```
</head>
<body>

<div id="header">
<h1>City Gallery</h1>
</div>

<div id="nav">
London<br>
Paris<br>
Tokyo
</div>

<div id="section">
<h2>London</h2>
<p>London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.</p>
<p>Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.
</p>
</div>

<div id="footer">
Copyright © W3Schools.com
</div>
```

## <span> tag

- Inline style element
- Changes the style of the text it encloses.
- Useful for modifying a specific portion of text
- But without any style attributes, the <span> tag won't change the enclosed items at all

```
<p>This one is <span style="color:red; font-weight:bold">only a test</span>.</p>
```

```
<p>This one is another <span style="font-size:32px; font-weight:bold">TEST</span>.</p>
```

# Differences between the `<span>` and `<div>` tag

- `<span>` doesn't do any formatting of its own.
- The `<div>` tag acts like a paragraph break
  - because it is defining a logical division in the document.
- The `<span>` tag simply tells the browser to apply the style rules to whatever is within the `<span>`
- a `span` element is in-line whereas `div` (division) element is block-line
- `<span>` is used for a small chunk of in-line HTML but `<div>` tag is used to group larger chunks of code.

# HTML Layout - Using Tables

- The simplest way of creating layouts is using HTML <table> tag.
- Tables are arranged in columns and rows, can be utilized
- **BUT NOT recommend for complex layout!!!**

|                                     |                                    |
|-------------------------------------|------------------------------------|
| This is Web Page Main title         |                                    |
| Main Menu<br>HTML<br>PHP<br>PERL... | Technical and Managerial Tutorials |
| Copyright © 2007 Tutorialspoint.com |                                    |

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Layout using Tables</title>
</head>
<body>
<table width="100%" border="0">
  <tr>
    <td colspan="2" bgcolor="#b5dcb3">
      <h1>This is web Page Main title</h1>
    </td>
  </tr>
  <tr valign="top">
    <td bgcolor="#aaa" width="50">
      <b>Main Menu</b><br />
      HTML<br />
      PHP<br />
      PERL...
    </td>
    <td bgcolor="#eee" width="100" height="200">
      Technical and Managerial Tutorials
    </td>
  </tr>
  <tr>
    <td colspan="2" bgcolor="#b5dcb3">
      <center>
        Copyright © 2007 Tutorialspoint.com
      </center>
    </td>
  </tr>
</table>
</body>
</html>
```

# The CSS Box Model

- All HTML elements can be considered as boxes. In CSS, the term "box model" is used when talking about design and layout.
- The CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content.
- Explanation of the different parts:
  - **Content** - The content of the box, where text and images appear
  - **Padding** - Clears an area around the content. The padding is transparent
  - **Border** - A border that goes around the padding and content
  - **Margin** - Clears an area outside the border. The margin is transparent

# The CSS Box Model



The diagram illustrates the CSS Box Model with four distinct layers. From the outermost to the innermost, they are: Margin (a light gray area bounded by a dashed line), Border (a solid green ring), Padding (a light gray ring), and Content (a white area bounded by a dashed line). The labels are positioned to the right of their respective layers.

Margin

Border

Padding

Content

# More CSS properties

- CSS Border Properties

- The CSS border properties allow you to specify the style, width, and color of an element's border.

```
p {border-style: solid;}
```

- CSS Margins

- The CSS margin properties are used to create space around elements, outside of any defined borders.
- With CSS, you have full control over the margins. There are properties for setting the margin for each side of an element (top, right, bottom, and left).

```
p {  
  margin-top: 100px;  
  margin-bottom: 100px;  
  margin-right: 150px;  
  margin-left: 80px;  
}
```

//shorthand:

```
margin: 25px 50px 75px 100px; //clockwise: top right bottom left
```



# More CSS properties

- CSS Padding

- Gspace around an element's content, inside of any defined borders.
- There are properties for setting the padding for each side of an element (top, right, bottom, and left)

```
div {  
  padding-top: 50px;  
  padding-right: 30px;  
  padding-bottom: 50px;  
  padding-left: 80px;  
}
```

//is there a shorthand to this?

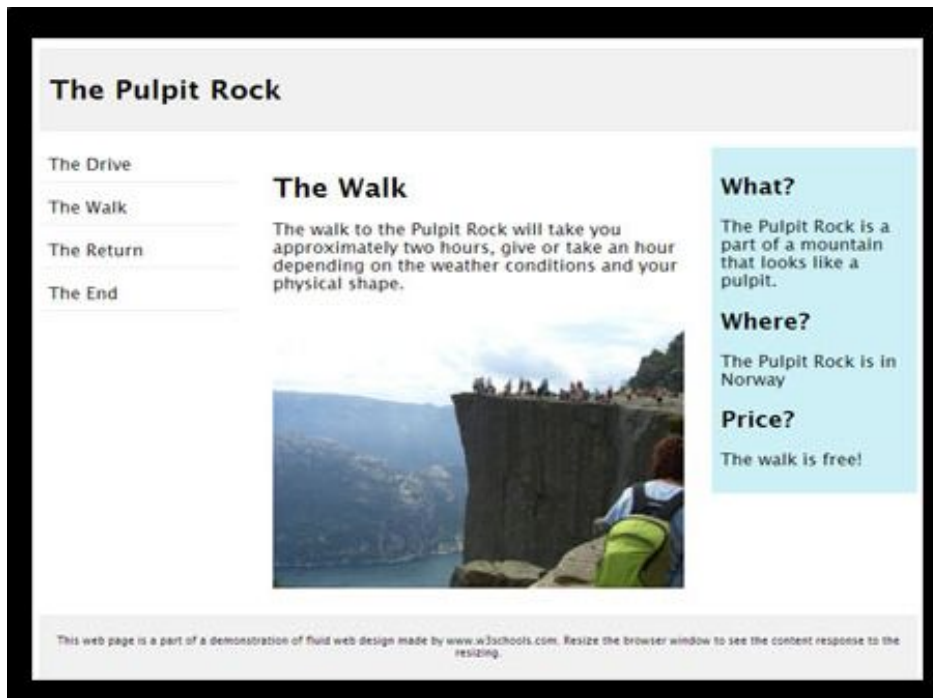
- CSS Setting height and width

- set the height and width of an element.
- dnot include padding, borders, or margins. It sets the height/width of the area inside the padding, border, and margin of the element.'

```
div{  
  height: 200px;  
  width: 50%;  
}
```

# Responsive Web Design

- Responsive Web Design makes your web page look good on all devices (desktops, tablets, and phones).
- Responsive Web Design is about using CSS and HTML to resize, hide, shrink, enlarge, or move the content to make it look good on any screen:



# Exercise

- One example of each
  - Simple left-nav bar
  - top and side nav bars
  - Inline block
  - Overflow
  - Dropdown
- **READINGS/Practice**
  - M Schafer: Ch. 12-18
  - <https://www.w3schools.com/css>
  - [https://www.w3schools.com/css/css\\_boxmodel.asp](https://www.w3schools.com/css/css_boxmodel.asp)
  - [https://www.w3schools.com/css/css\\_website\\_layout.asp](https://www.w3schools.com/css/css_website_layout.asp)

# Acknowledgement

- This module is designed and created with the help from following sources-
  - <https://cgi.csc.liv.ac.uk/~ullrich/COMP519/>
  - <http://www.csc.liv.ac.uk/~martin/teaching/comp519/>
  - Anup Majumder, Jahangirnagar University