



NextGen



Web



Session: 8

*Creating Navigational Aids
and Division-Based Layout*

- Explain HTML5 semantic tags
- Explain HTML5 semantic tag layouts
- Explain the usage of navigation bar
- Describe a text-based and graphic navigation bar
- Explain image mapping
- Explain divisions in HTML5



Introduction

Designing a Web site requires the use of a number of elements and principles to get the desired results.

Using these principles and elements helps to develop a rich, attractive, efficient, and aesthetically pleasing Web site.

Using some HTML tags and graphics does help to develop a useful and efficient Web site.

Navigation bar plays an important role in making the Web page user-friendly.

HTML5 Semantic Tags

HTML5 has evolved by introducing new elements that brought semantics to higher level.

New tags were developed to create stable semantic structure.

Earlier version of HTML had the universal tag `div` which was used to accomplish various tasks in the HTML structure.

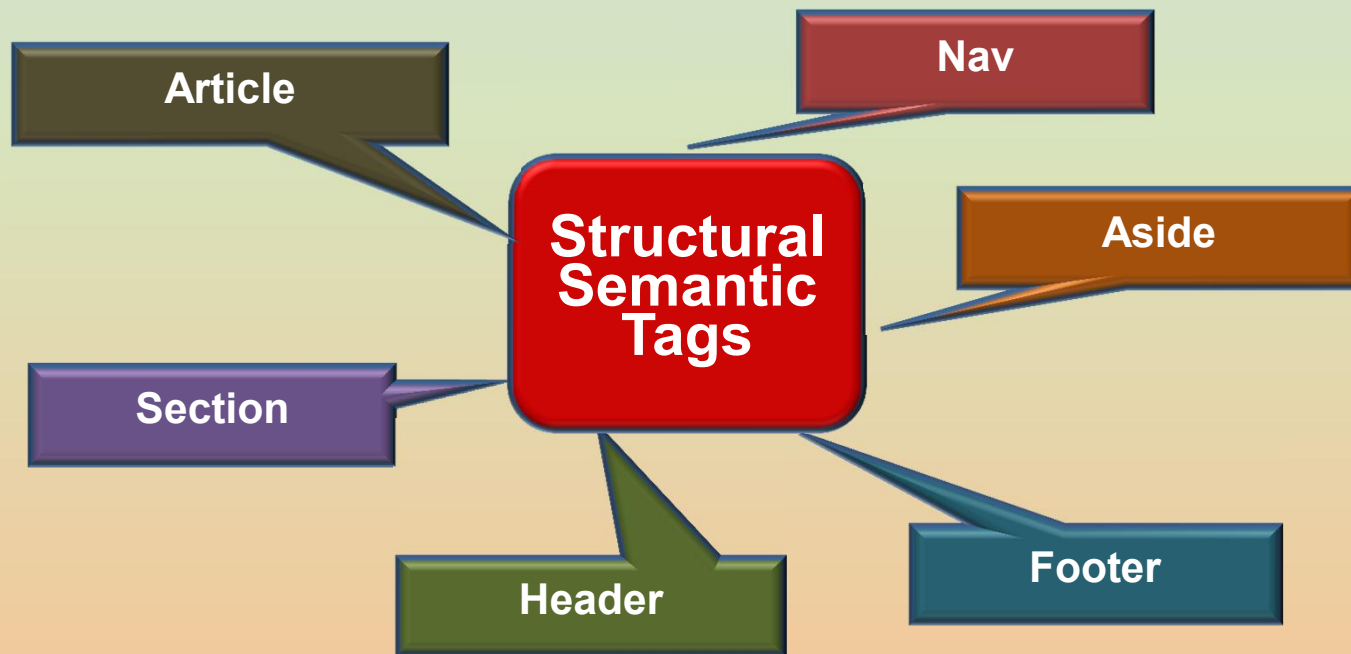
Constraint with `div` tag is that, it confused the user when multiple `div` tag was used in large coding.

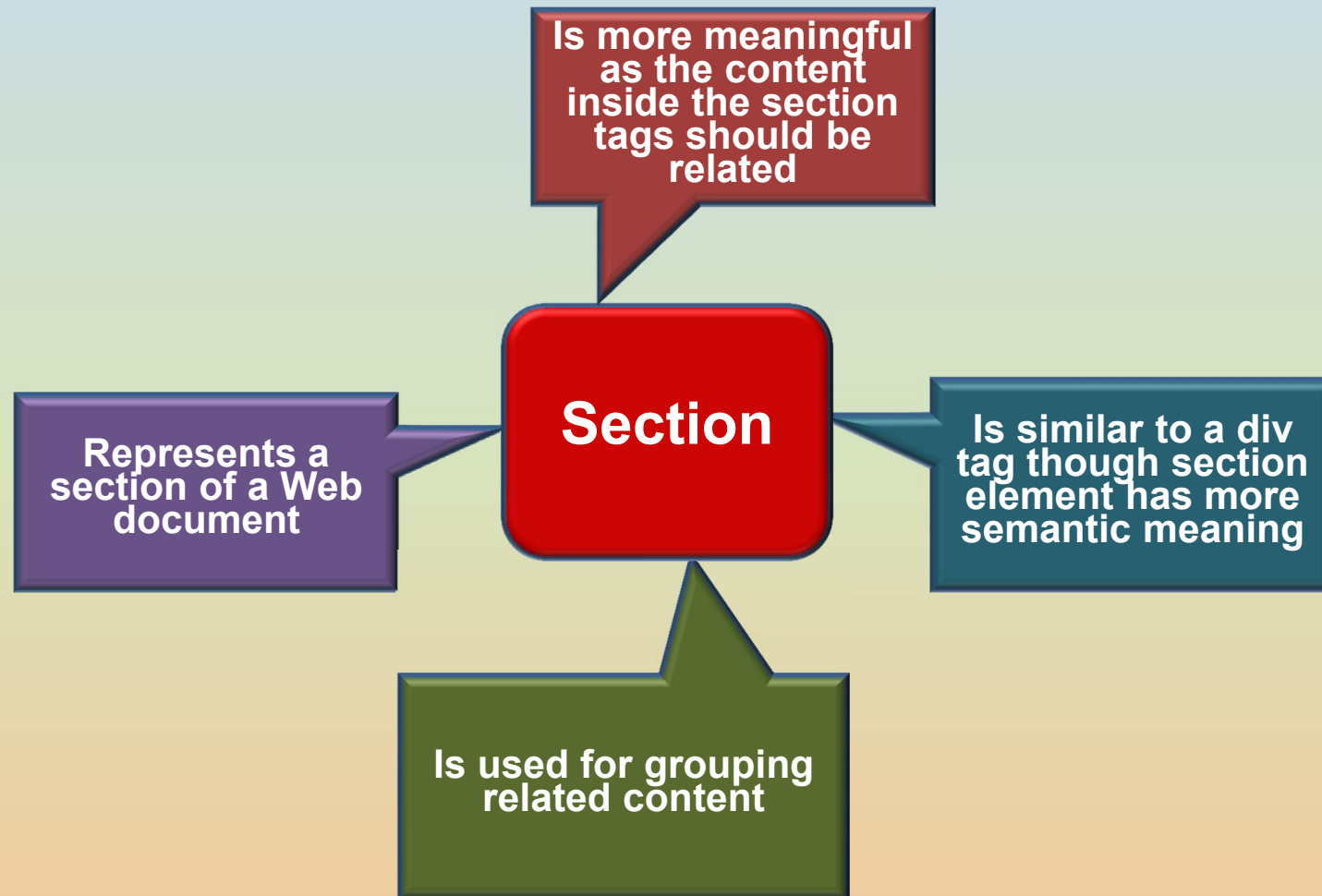
HTML5 has introduced two types of semantic tags namely, text-level and structural.

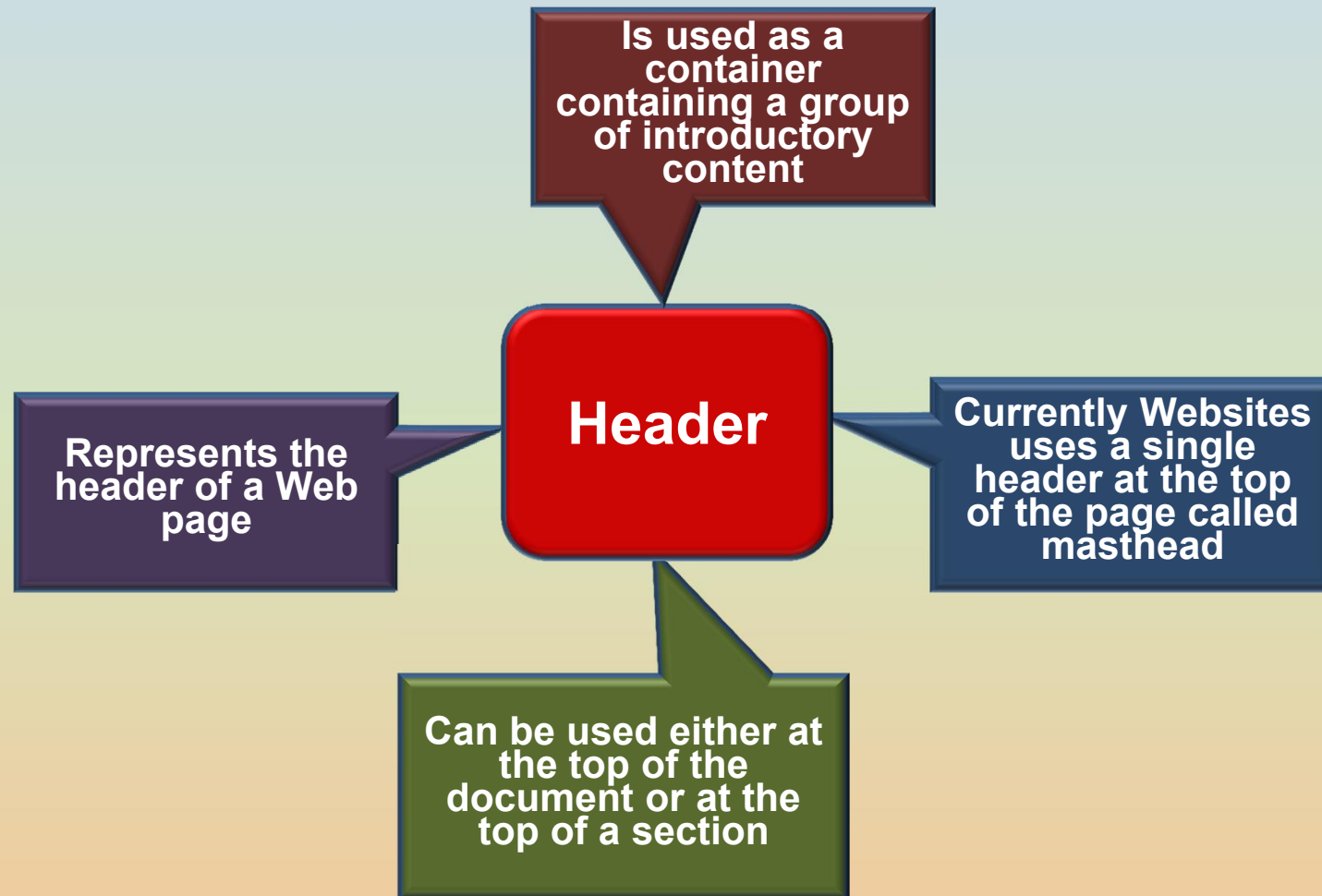
Structural Semantic Tags 1-7

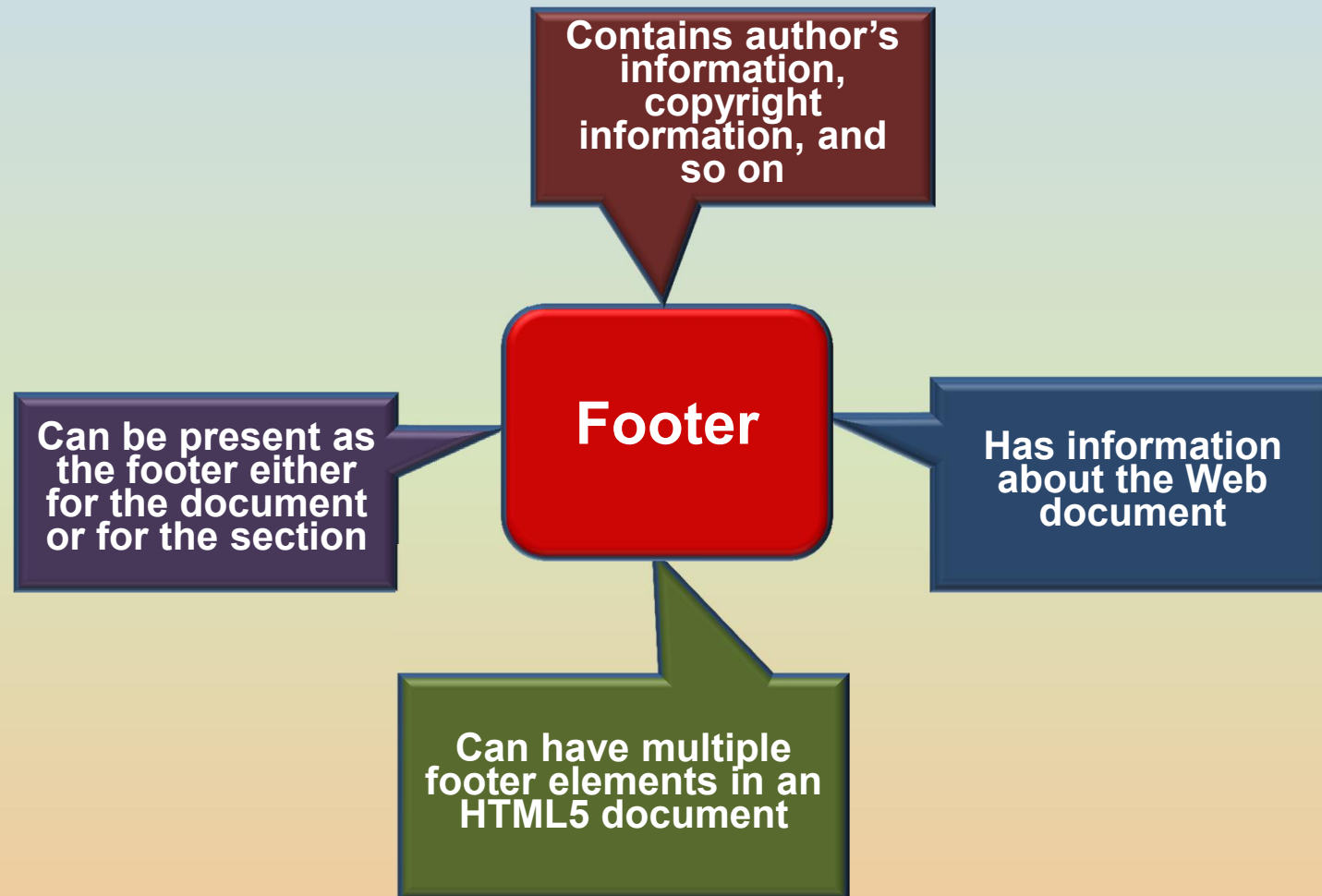
Are block level elements and are used to structure pages.

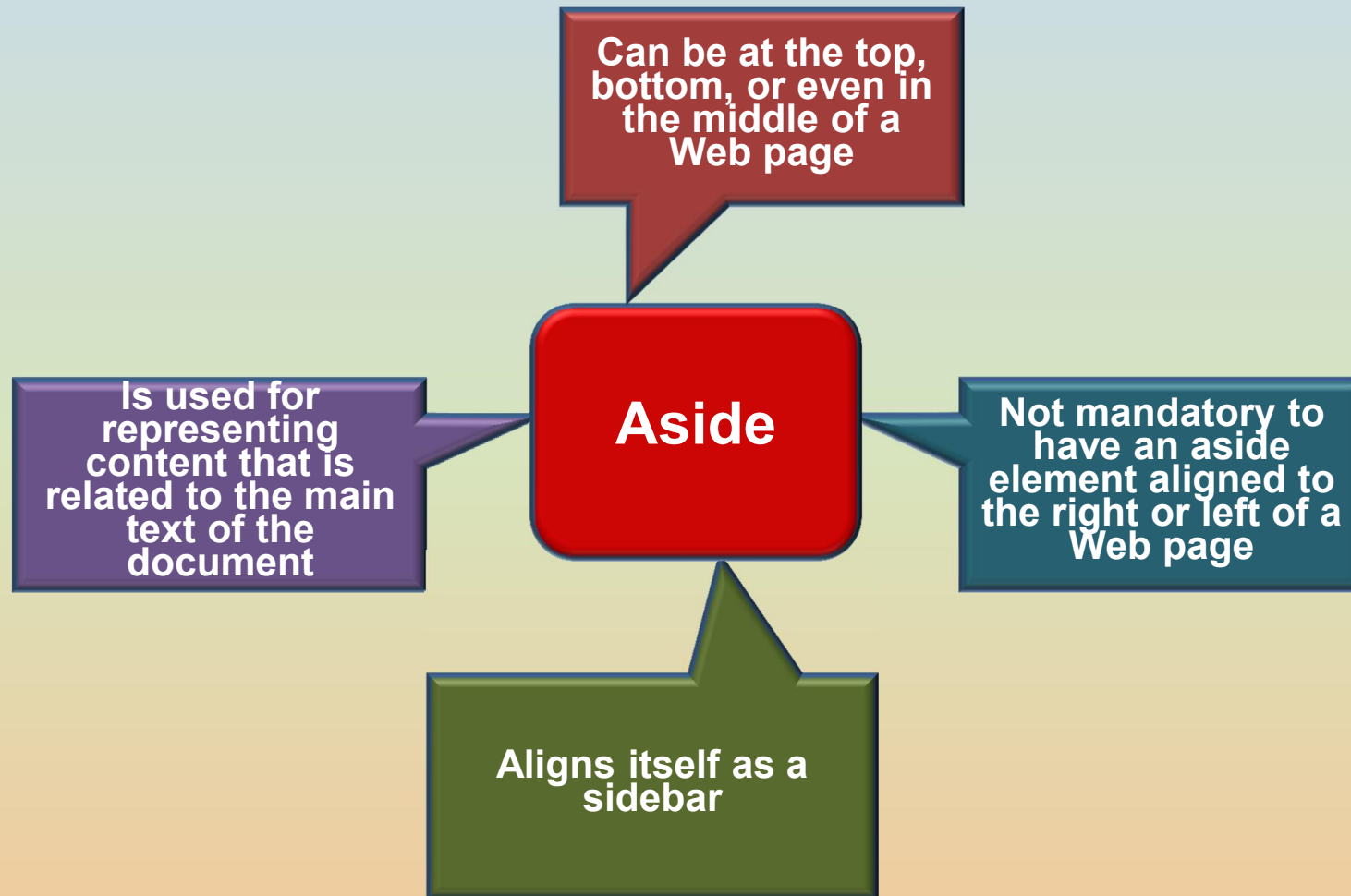
New structural semantic elements are as follows:



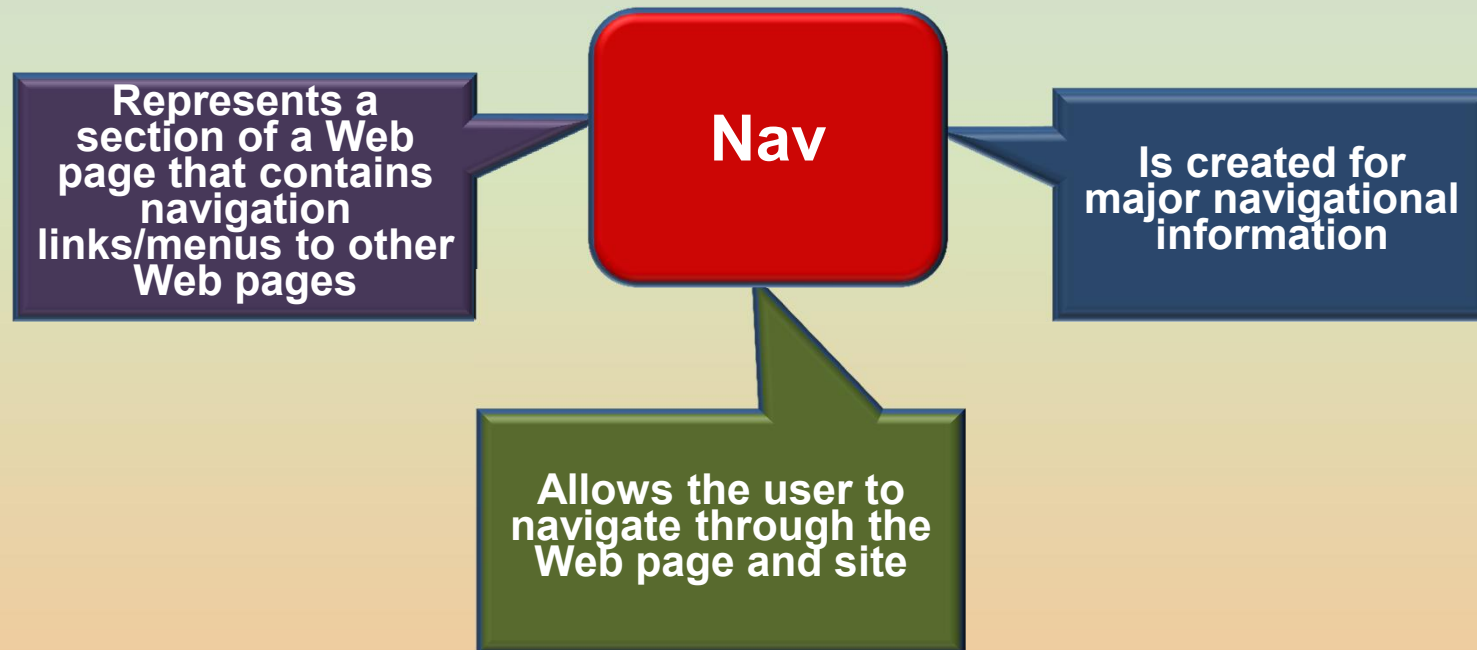


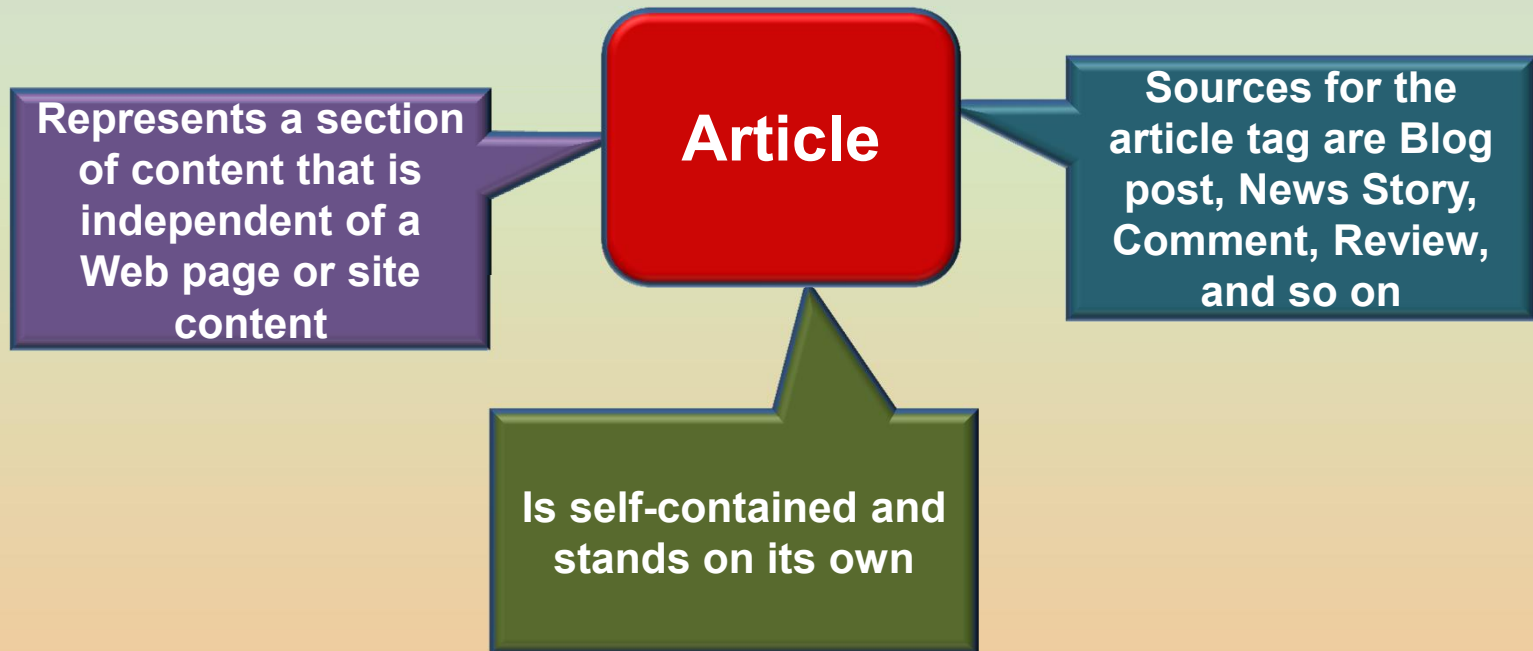






Structural Semantic Tags 6-7

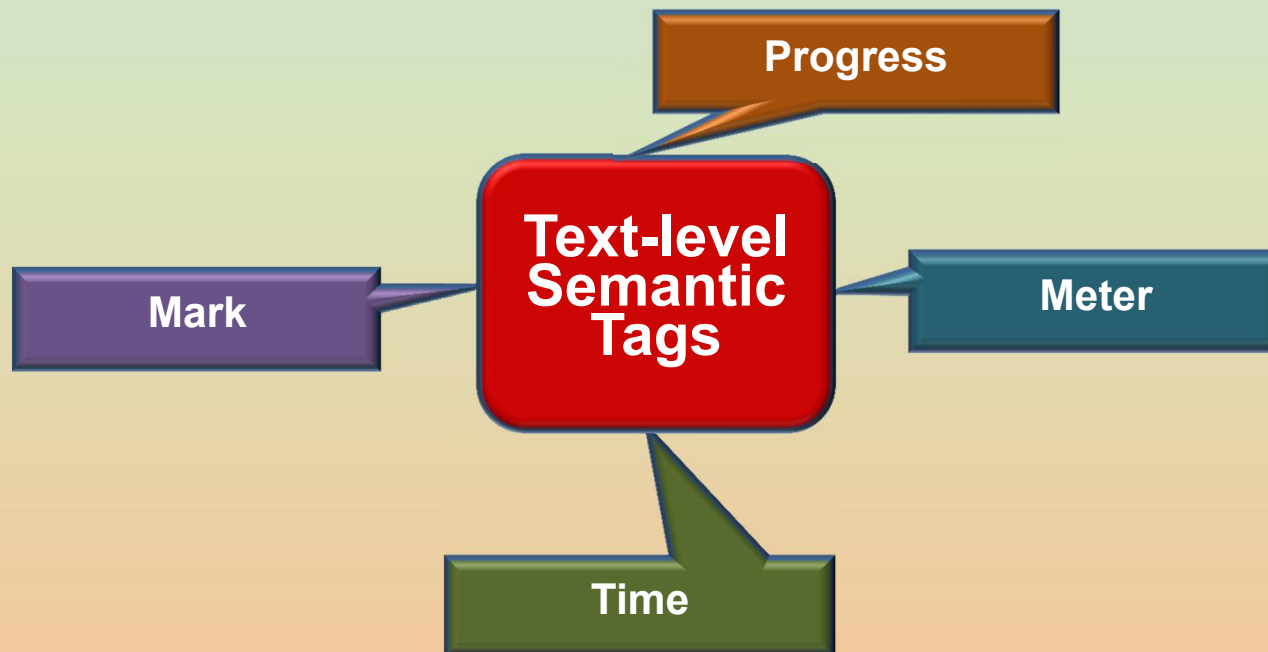




Text-level Semantic Tags 1-7

Are currently inline elements.

New text-level semantic elements are as follows:





Text-level Semantic Tags 2-7

`<mark>` tag is used for defining marked or highlighted text.

`<mark>` tag can be used for highlighting words in a Web page that a visitor searched for.

Text-level Semantic Tags 3-7

`<time>` tag is used for defining either the time, or a date in the Gregorian calendar.

Can be used to encode dates and times in a machine-readable format and is used optionally with a time and a time-zone offset.

- Following table lists attribute and value of `<time>` tag.

| Attribute | Value | Description |
|-----------|----------|----------------------------------------------------------------------|
| datetime | datetime | Provides the date/time given by the element's content. |
| pubdate | pubdate | It is used for specifying publication date and time of the document. |

Text-level Semantic Tags 4-7

- The Code Snippet demonstrates how to display the date and time.

```
<!DOCTYPE html>
<html>
  <body>
    <time datetime="13:00">1pm</time>
    <time datetime="2011-07-15">July 15th, 2011</time>
    <time datetime="2011-07-15T13:00">1pm on July 14th</time>
  </body>
</html>
```

Text-level Semantic Tags 5-7

`<meter>` tag displays markup or scalar measurement within a defined range.

Absolute scalar values, such as height or weight, are not represented automatically by the meter tag.

It is also used for displaying fractional value.

- The Code Snippet demonstrates how to display the `<meter>` tag.

```
<meter value="2" min="0" max="10">2 out of 10</meter>
```


Text-level Semantic Tags 6-7

- Following table lists attribute and value of `<meter>` tag.

| Attribute | Value | Description |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------|
| form | form_id | Is used for specifying one or more forms that <code><meter></code> element belongs to. |
| high | number | Is used for specifying the high range value. |
| low | number | Is used for specifying a range of value that is to be considered as low and should be greater than min attribute value. |
| max | number | Is used for specifying the maximum value of the range. |
| min | number | Is used for specifying the minimum value of the range. |
| optimum | number | Is used for specifying the optimal value for the <code><meter></code> tag. |
| value | number | Is used for specifying the current value of the <code><meter></code> tag. |

Text-level Semantic Tags 7-7

`<progress>` tag can be used with JavaScript to display the progress of a task.

- Following table lists attribute and value of `<progress>` tag.

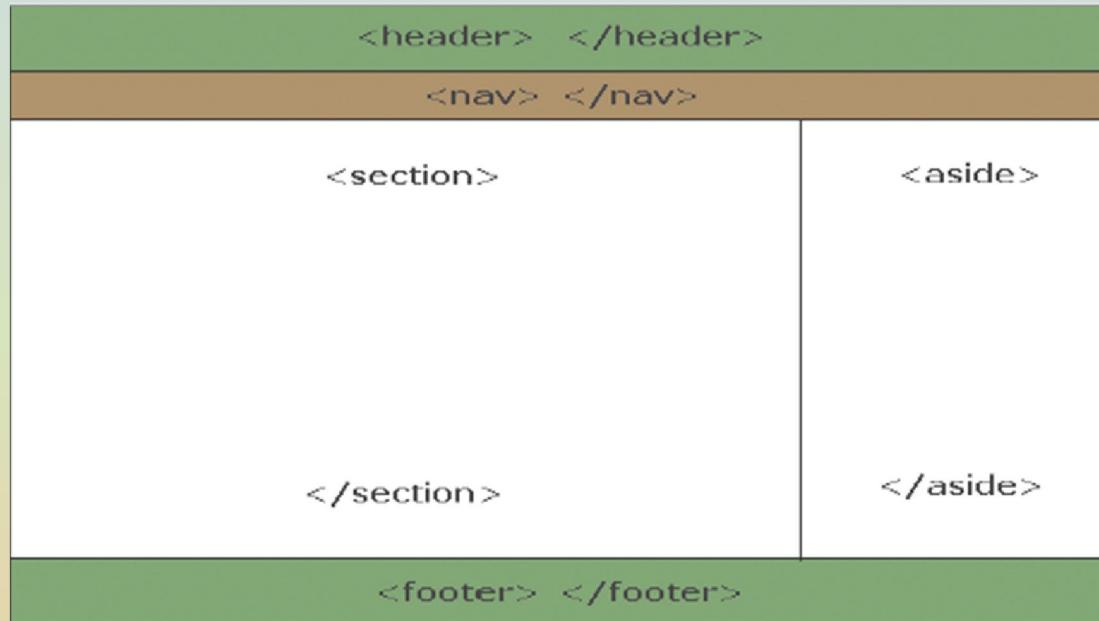
| Attribute | Value | Description |
|-----------|--------|---------------------------------------------------------------------------------------------|
| max | number | Is used for specifying the work as a floating point number that the task requires in total. |
| value | number | Is used for specifying how much task has been completed. |

- The Code Snippet demonstrates how to display the `<progress>` tag.

```
<progress value="24" max="120"></progress>
```



HTML5 Semantic Layout 1-8



`<header>` element provides introductory information.

`<head>` tag provides information about the entire document.

`<header>` tag is used only for the body of the Web page or for the sections inside the body.

- The Code Snippet demonstrates the use of `<header>` tag.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>My First Page</title>
  </head>
  <body>
    <header>
      <h1>Sample Blog </h1>
    </header>
  </body>
</html>
```

HTML5 Semantic Layout 3-8

nav element is a section which contains the link to other pages or links to different sections within the page.

It is a section containing the navigation links.

Navigational elements are helpful in identifying large blocks of navigational data.

- The Code Snippet demonstrates the use of `<nav>` tag.

```
<body>
  <header>
    <h1>Sample Blog</h1>
  </header>
  <nav>
    <ul>
      <li> home </li>
      <li> help </li>
      <li> contact </li>
    </ul>
  </nav>
```

```
</body>
```

`<section>` is the main information bar that contains the most important information of the document.

It can be created in different formats. For example, it can be divided into several blocks or columns.

- The Code Snippet demonstrates the use of `<section>` tag.

```
<body>
  <header>
    <h1>Sample Blog </h1>
  </header>
  <nav>
    <ul>
      <li> home </li>
      <li> help </li>
      <li> contact </li>
    </ul>
  </nav>
```

```
<section>
  <h1>Links</h1>
  <ul>
    <li><a href="#">Link 1</a></li>
    <li><a href="#">Link 2</a></li>
    <li><a href="#">Link 3</a></li>
  </ul>
</section>
</body>
```



`<aside>` element is a column or a section that generally contains data linked to the main information.

This element is used for typographical effects, such as for sidebars, for groups of nav elements, for advertising purposes, and so on.

- The Code Snippet demonstrates the use of `<aside>` tag.

```
<!DOCTYPE html>
<html lang="en">
  <body>
    <header>
      <h1>Sample Blog </h1>
    </header>
    <nav>
      <ul>
        <li> home </li>
        <li> help </li>
        <li> contact </li>
      </ul>
    </nav>
```

```
<section>
  <h1>Links</h1>
  <ul>
    <li><a href="#">Link 1</a></li>
    <li><a href="#">Link 2</a></li>
    <li><a href="#">Link 3</a></li>
  </ul>
</section>
```

```
<aside>
  <blockquote>Archive Number One</blockquote>
  <br>
  <blockquote>Archive Number Two</blockquote>
</aside>
```

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



HTML5 Semantic Layout 6-8


`<footer>` element give an end to the document's body.

A footer typically contains information about the sections.

Can include the author or company details, links to related documents, copyright data, and so on.

- The Code Snippet demonstrates the use of <footer> tag.

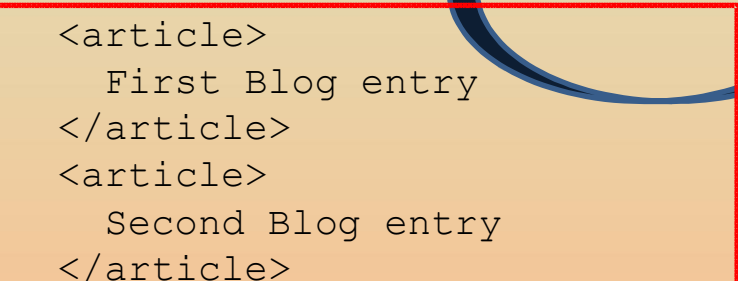
```
<body>
<header>
  <h1>Sample Blog</h1>
</header>
<nav>
  <ul>
    <li> home </li>
    <li> help </li>
    <li> contact </li>
  </ul>
</nav>
<section>
  <h1>Links</h1>
  <ul>
    <li><a href="#">Link 1</a></li>
    <li><a href="#">Link 2</a></li>
    <li><a href="#">Link 3</a></li>
  </ul>
</section>
<aside>
  <blockquote>Archive Number One</blockquote>
  <br>
  <blockquote>Archive Number Two</blockquote>
</aside>
  <footer>
    Copyright &copy; 2012-2013
  </footer>
</body>
</html>
```



`<article>` element helps to insert a self-contained composition in an application, page, document, or site.

- The Code Snippet demonstrates the use of `<article>` tag.

```
<body>
<header>
  <h1>Sample Blog</h1>
</header>
<nav>
  <ul>
    <li> home </li>
    <li> help </li>
    <li> contact </li>
  </ul>
</nav>
<section>
  <article>
    First Blog entry
  </article>
  <article>
    Second Blog entry
  </article>
</section>
<aside>
  <blockquote>Archive Number One</blockquote>
  <br>
  <blockquote>Archive Number Two</blockquote>
</aside>
  <footer>
    Copyright &copy; 2012-2013
  </footer>
</body>
</html>
```



A red rectangular box highlights the code snippet for the `<article>` tags within the `<section>` tag. A blue curved arrow points from the `<article>` tag in the box to the `<section>` tag in the code above it, indicating that the `<article>` tag is used to structure the content within the `<section>` tag.

Navigation Bar

Is one of the most important elements in Web design.

Web-layouts do not have any specific physical representation except for a consistent navigation menu.

Navigation is one segment of a Web site's information architecture.

In Web designing, navigation menu are always on navigation bars, which can be horizontal or vertical.

Navigation bar is a section of a Website or online page intended to support visitors in browsing through the online document.

Web pages will have a primary and a secondary navigation bar on all pages which will include links to the most important sections of the site.

Text-based Navigation Bar 1-2

Some users browse Web site with graphics turned off, or use browsers with minimum graphics capability.

For such situations, it is essential to provide text-based navigation bars which are created as stand-alone navigation bars.

Text-based navigation bars are not associated with icons but are easy to create, and can be displayed in any Web browsers.

Advantage of using a text-based navigation bar is that it reduces the loading time of a page.

Although a text-based navigation bar is easy to create but is not interesting, since there is very less interaction or visual appeal to the visitor.

It can be displayed either horizontally or vertically.

Text-based Navigation Bar 2-2

- The Code Snippet demonstrates the HTML code for a text-based navigation bar.

```
<!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

Graphical Navigation Bar

Is more captivating than text-based navigation bar as it uses icons.

Increases the usability of the page with a good choice of icon for the navigation bar.

Also, makes the Web site more noticeable for the user visiting the Web site.

Disadvantage is that, since it uses images, it takes longer time for a page to load.

Also, the Web page will be useless for users using a non-graphic browser.

Graphical Navigation Bar with Rollover Effects

Similar to the graphical navigation bar except for additional feature.

Moving the mouse over the linked image leads to a change in the state of image.

State change of image leads to an image swapping process.

When the mouse is moved off the image, the image swaps back to the previous view.

This rollover effect creates an interactive activity between the Web site and the visitor.

Rollover effect has two different activities that include the image in the original view and the changed image after mouse rollover.

Image Map 1-3

Are images with clickable areas.

Areas in image-maps when clicked will link to another page.

Have to be used intelligently to make it effective.

Uses the `<map>` tag to define an image-map.

`<map>` element contains a number of `<area>` elements for defining the clickable areas in the image map.

The `id` attribute of the `<map>` tag when specified, must have the same value as the `name` attribute.

Image Map 2-3

- Following table lists the `<map>` tag attribute and its value.

| Attribute | Value | Description |
|-----------|---------|-----------------------------------------------------|
| name | mapname | It is used for specifying the name of an image-map. |

Guidelines to create an image map:

- Use the `` tag to insert and link an image. In the `` tag, use the `usemap` attribute to define the image map name.
- Use the `<map>` tag to create a map with the same name. Inside this `<map>` tag, define the clickable areas with the `<area>` tag.

Image Map 3-3

- The Code Snippet demonstrates the use of image map in an HTML code.

```
<!DOCTYPE html>
<html>
  <body>
    
    <map name="cakemap">
      <area shape="circle" coords="0,0,200,600" href="4.html"
      alt="cake" />
    </map>
  </body>
</html>
```



Divisions 1-2

`<div>` tag defines a division in an HTML Web page.

Is used to group block-elements and format them with CSS.

New structural semantic tags reasonably reduce a lot of `<div>` tag's usage.

`<div>` tag can be used when there is no other semantically appropriate element left that suits the purpose in a Web page development.

It can be commonly used for stylistic purposes such as wrapping some semantically marked-up content in a CSS-styled container.

Divisions 2-2

- The Code Snippet demonstrates the use of `<div>` tag.

```
<body>
  <div id="wrapper">
    <header>
      <h1>Hello</h1>
      <nav>
        <! -- ... -->
      </nav>
    </header>
  </div>
</body>
```

- Tips for using `<div>` tag in Web site development are as follows:
 - `<div>` tag is a block-level element
 - `<div>` tag can contain any other tag
 - `<div>` tag can be found inside any element that can contain flow elements, such as other `<div>`, `<address>`, `<section>`, and `<table>`

Division Positioning and Formatting 1-2

Elements can be positioned using the top, bottom, left, and right properties.

These properties will not work unless the position of the property is set.

There are five position properties in DIV elements namely, static, relative, absolute, fixed, and inherit.

Only three properties are used namely, absolute, relative, and fixed.

Positioning can be applied to any block element.

Default position for a block element (DIV) is static.

Division Positioning and Formatting 2-2

- Following table shows the values and its description used in DIV element.

| Relative Length | Description |
|-----------------|-----------------------------------------------------------------------------------------------|
| static | Positions the element in order, as they appear in the document flow. It is the default value. |
| absolute | Positions the element relative to its first position. |
| fixed | Positions the element relative to the browser window. |
| relative | Positions the element relative to its normal position. |
| inherit | Positions the element with respect the value that is inherited from the parent element. |

Summary 1-2

- HTML 5 has introduced two types of semantic tags. They are namely, text-level and structural. Structural semantic tags are as follows:
 - Section
 - Header
 - Footer
 - Aside
 - Nav
 - Article
- Text level semantic tags are as follows:
 - Mark
 - Time
 - Meter
 - Progress
- Navigation is the most significant element in Web design. Since Web-layouts does not have any physical representation, a user can depend on consistent navigation menu.

Summary 2-2

- 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.
- The new structural semantic tags reasonably capture a lot of `<div>`'s territory, but `<div>` tag still has a place in the HTML5 world. Div can be used when there is no other semantically appropriate element left that suits the purpose in a Web page development.