

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

WEB TECHNOLOGY LAB

BCSL504

EXPERIMENT – 05
HTML5 SEMANTIC ELEMENTS
NEWSPAPER WEBPAGE

5th Semester

Header • Section • Article • Aside
Figure • Table • Footer • CSS Styling

Prepared by Search Creators

Learn • Practice • Execute

1. Experiment 05

Aim

Develop an HTML5 webpage named `newspaper.html` using semantic elements such as `figure`, `table`, `aside`, `section`, `article`, `header`, and `footer`.
Apply suitable background colours, text colours and text sizes to the webpage.

2. Requirements

- Search Creators Compiler / Code Studio (Recommended)

<https://searchcreators.org/compiler/>

- Modern web browser such as Chrome, Edge or Firefox
- Internet connection for accessing Search Creators Compiler
- Alternatively, VS Code, Notepad or another suitable HTML/CSS editor
- Basic knowledge of HTML5 and CSS

3. Search Creators Compiler

Run This Program on Search Creators

Practice this Web Technology Lab experiment using the **Search Creators Compiler / Code Studio**.

Open Search Creators Compiler

<https://searchcreators.org/compiler/>

Create the HTML program, execute it and verify the semantic newspaper webpage using the coding environment.

4. Problem Statement

Create an HTML5 webpage named:

`newspaper.html`

The webpage should demonstrate the use of:

1. header
2. section
3. article
4. aside
5. figure
6. figcaption
7. table
8. footer
9. Background colours
10. Text colours
11. Different text sizes

5. Introduction to HTML5 Semantic Elements

HTML5 provides semantic elements that describe the meaning and purpose of different parts of a webpage.

A semantic element clearly describes its role to both the browser and the developer.

For example:

```
1 <header>
2 <section>
3 <article>
4 <aside>
5 <footer>
```

These tags are more meaningful than using only generic `div` elements for every part of a webpage.

6. Advantages of Semantic Elements

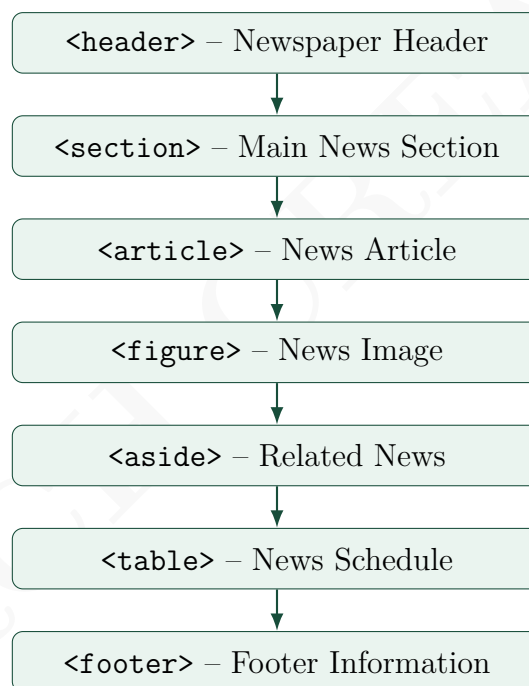
Semantic HTML provides several advantages:

- Makes webpage structure easy to understand.
- Improves code readability.
- Helps organize webpage content.
- Makes maintenance easier.
- Provides meaningful structure to browsers and other software.

7. Important Semantic Elements

Element	Purpose
<header>	Represents introductory or heading content.
<section>	Groups related content into a section.
<article>	Represents independent content such as a news article.
<aside>	Represents related or supplementary content.
<figure>	Contains self-contained content such as an image.
<figcaption>	Provides a caption for a figure.
<table>	Displays information in rows and columns.
<footer>	Represents footer information.

8. Structure of the Webpage



9. HTML Program – newspaper.html

Important

Create the file exactly as:

newspaper.html

Practice and execute the program using:

Search Creators Compiler / Code Studio

<https://searchcreators.org/compiler/>

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5
6     <meta charset="UTF-8">
7
8     <title>Daily Tech News</title>
9
10    <style>
11
12        body {
13            margin: 0;
14            font-family: Arial, sans-serif;
15            background-color: #f5f5f5;
16            color: #222222;
17        }
18
19        header {
20            background-color: darkgreen;
21            color: white;
22            text-align: center;
23            padding: 20px;
24        }
25
26        header h1 {
27            font-size: 36px;
28        }
29
30        header p {
31            font-size: 18px;
32        }
33
34        section {
35            background-color: white;
36            margin: 20px;
37            padding: 20px;
38        }
```

```
39
40     article {
41         background-color: #eaf4ef;
42         padding: 15px;
43         margin-bottom: 15px;
44     }
45
46     article h2 {
47         color: darkgreen;
48         font-size: 26px;
49     }
50
51     article p {
52         color: #333333;
53         font-size: 17px;
54         line-height: 1.6;
55     }
56
57     figure {
58         text-align: center;
59         background-color: #fff8dc;
60         padding: 15px;
61     }
62
63     figure img {
64         width: 350px;
65         height: 200px;
66         border: 3px solid darkgreen;
67     }
68
69     figcaption {
70         color: brown;
71         font-size: 15px;
72         margin-top: 8px;
73     }
74
75     aside {
76         background-color: lightyellow;
77         border-left: 5px solid orange;
78         padding: 15px;
79         margin: 20px;
80     }
81
82     aside h3 {
83         color: darkred;
84         font-size: 22px;
85     }
86
```

```
87     table {
88         width: 80%;
89         margin: 20px auto;
90         border-collapse: collapse;
91         background-color: white;
92     }
93
94     th {
95         background-color: darkgreen;
96         color: white;
97         font-size: 18px;
98     }
99
100    th, td {
101        border: 1px solid #333333;
102        padding: 10px;
103        text-align: center;
104    }
105
106    td {
107        font-size: 16px;
108    }
109
110    footer {
111        background-color: #222222;
112        color: white;
113        text-align: center;
114        padding: 15px;
115        font-size: 15px;
116    }
117
118    </style>
119
120    </head>
121
122    <body>
123
124        <!-- Header -->
125        <header>
126
127            <h1>Daily Tech News</h1>
128
129            <p>
130                Technology | Education | Innovation
131            </p>
132
133        </header>
134
```

```
135
136 <!-- Main News Section -->
137 <section>
138
139     <h2>Today's Technology News</h2>
140
141     <!-- Article -->
142     <article>
143
144         <h2>
145             Web Technology is Changing
146             Modern Education
147         </h2>
148
149         <p>
150             Web technologies are widely used
151             to build educational platforms,
152             online learning systems and
153             interactive applications.
154         </p>
155
156         <p>
157             HTML provides webpage structure,
158             CSS controls presentation and
159             JavaScript adds interactivity
160             to modern websites.
161         </p>
162
163     </article>
164
165     <!-- Figure -->
166     <figure>
167
168         
171
172         <figcaption>
173             Technology and Web Development
174         </figcaption>
175
176     </figure>
177
178 </section>
179
180
181 <!-- Aside -->
182
```

```
183 <aside>
184
185     <h3>Related News</h3>
186
187     <p>
188         Students can practice HTML, CSS and
189         programming using the Search Creators
190         Compiler / Code Studio.
191     </p>
192
193     <p>
194         Visit:
195         https://searchcreators.org/compiler/
196     </p>
197
198 </aside>
199
200
201 <!-- Another Section -->
202 <section>
203
204     <h2>Latest Updates</h2>
205
206     <article>
207
208         <h2>
209             Importance of HTML5
210         </h2>
211
212         <p>
213             HTML5 provides semantic elements
214             such as header, section, article,
215             aside, figure and footer.
216         </p>
217
218     </article>
219
220 </section>
221
222
223 <!-- Table -->
224 <section>
225
226     <h2>Technology News Schedule</h2>
227
228     <table>
229
230         <tr>
```

```
231         <th>Time</th>
232         <th>Category</th>
233         <th>Topic</th>
234
235     </tr>
236
237     <tr>
238
239         <td>9:00 AM</td>
240         <td>Web</td>
241         <td>HTML5</td>
242
243     </tr>
244
245     <tr>
246
247         <td>12:00 PM</td>
248         <td>Design</td>
249         <td>CSS</td>
250
251     </tr>
252
253     <tr>
254
255         <td>3:00 PM</td>
256         <td>Programming</td>
257         <td>JavaScript</td>
258
259     </tr>
260
261 </table>
262
263 </section>
264
265
266 <!-- Footer -->
267 <footer>
268
269     <p>
270         Daily Tech News
271     </p>
272
273     <p>
274         Web Technology Lab - BCSL504
275     </p>
276
277 </footer>
```

```
279
280 </body>
281
282 </html>
```

10. Program Explanation

10.1 Header Element

The **header** element represents introductory content.

Example:

```
1 <header>
2
3   <h1>Daily Tech News</h1>
4
5   <p>
6     Technology | Education | Innovation
7   </p>
8
9 </header>
```

The CSS applied to the header is:

```
1 header {
2   background-color: darkgreen;
3   color: white;
4   text-align: center;
5   padding: 20px;
6 }
```

Therefore, the header has a dark-green background and white text.

10.2 Section Element

The **section** element groups related content.

Example:

```
1 <section>
2
3   <h2>Today's Technology News</h2>
4
5   ...
6
7 </section>
```

A webpage may contain multiple sections.

10.3 Article Element

The **article** element represents independent content.

In a newspaper webpage, an article can represent a complete news story.

Example:

```
1 <article>
2
3   <h2>
4     Web Technology is Changing
5     Modern Education
6   </h2>
7
8   <p>
9     Web technologies are widely used...
10  </p>
11
12 </article>
```

10.4 Figure Element

The **figure** element is used for self-contained content such as an image.

Example:

```
1 <figure>
2
3   
6
7   <figcaption>
8     Technology and Web Development
9   </figcaption>
10
11 </figure>
```

The **figcaption** element provides a caption for the figure.

Important

If `news.jpg` is used, place the image in the same project/folder as `newspaper.html`.
If the coding environment supports file upload, upload the image to the same project before previewing the page.

10.5 Aside Element

The **aside** element represents content related to the main content.

Example:

```
1 <aside>
2
3     <h3>Related News</h3>
4
5     <p>
6         Students can practice HTML and CSS
7         using Search Creators Compiler.
8     </p>
9
10 </aside>
```

In this program, the aside section displays related information.

10.6 Table Element

The **table** element displays data in rows and columns.

Example:

```
1 <table>
2
3     <tr>
4         <th>Time</th>
5         <th>Category</th>
6         <th>Topic</th>
7     </tr>
8
9     <tr>
10        <td>9:00 AM</td>
11        <td>Web</td>
12        <td>HTML5</td>
13    </tr>
14
15 </table>
```

Here:

- **tr** creates a row.
- **th** creates a heading cell.
- **td** creates a data cell.

10.7 Footer Element

The **footer** element represents footer information.

Example:

```
1 <footer>
2
3   <p>Daily Tech News</p>
4
5   <p>
6       Web Technology Lab - BCSL504
7   </p>
8
9 </footer>
```

It is generally displayed near the bottom of the webpage.

11. CSS Styling Used

The experiment requires different:

- Background colours
- Text colours
- Text sizes

These are applied using CSS.

11.1 Background Colour

Example:

```
1 header {
2     background-color: darkgreen;
3 }
```

The CSS property:

background-color

changes the background colour of an element.

11.2 Text Colour

Example:

```
1 header {
2     color: white;
3 }
```

The CSS property:

color

changes the text colour.

11.3 Text Size

Example:

```
1 header h1 {  
2     font-size: 36px;  
3 }
```

The CSS property:

font-size

controls the size of the text.

12. Semantic Element Summary

Element	Use in this Program
header	Displays newspaper name and heading.
section	Groups related news content.
article	Displays an individual news article.
figure	Contains the news image.
figcaption	Provides the image caption.
aside	Displays related news/information.
table	Displays the technology news schedule.
footer	Displays footer information.

13. How to Execute the Program

Run This Program on Search Creators

Recommended Method – Search Creators Compiler

Open:

Search Creators Compiler / Code Studio

<https://searchcreators.org/compiler/>

Create the HTML file, enter the program, run it and verify the semantic newspaper webpage using the web preview/output environment.

14. Procedure

1. Open the **Search Creators Compiler / Code Studio**:

<https://searchcreators.org/compiler/>

2. Create a new HTML file or web project.

3. Name the HTML file:

`newspaper.html`

4. Enter the given HTML5 and CSS program.
5. Create the newspaper heading using the `header` element.
6. Create the main content using the `section` element.
7. Add news content using the `article` element.
8. Add an image using the `figure` element.
9. Add the image caption using `figcaption`.
10. Add related information using the `aside` element.
11. Create the news schedule using an HTML `table`.
12. Add footer information using the `footer` element.
13. Apply different background colours using CSS.
14. Apply different text colours using CSS.
15. Apply different text sizes using CSS.
16. If using `news.jpg`, keep it in the same project/folder as the HTML file.
17. Save the program.

18. Run or preview the webpage using the Search Creators coding environment.
19. Verify all the semantic elements and CSS styles in the output.
20. If required, the same experiment can alternatively be performed using VS Code, Notepad or another suitable HTML/CSS editor and a web browser.

15. Expected Output

The output should display a newspaper-style webpage with:

- Newspaper header
- Main news section
- News article
- Figure and caption
- Related news in an aside
- News schedule table
- Footer
- Different background colours
- Different text colours
- Different text sizes

Expected Browser Output



Related News

Students can practice HTML, CSS and programming using the Search Creators Compiler / Code Studio.

Time	Category	Topic
9:00 AM	Web	HTML5
12:00 PM	Design	CSS
3:00 PM	Programming	JavaScript

Daily Tech News
BCSL504 – Web Technology Lab

16. Important Viva Questions

Viva Questions

1. **What are semantic elements in HTML5?**

Semantic elements are HTML elements whose names describe the meaning or purpose of their content.

2. **Give examples of semantic elements.**

Examples include header, section, article, aside, figure and footer.

3. **What is the purpose of the header element?**

It represents introductory or heading content.

4. **What is the purpose of the section element?**

It groups related content into a section.

5. **What is the purpose of the article element?**

It represents independent content such as a news article.

6. **What is the purpose of the aside element?**

It represents supplementary content related to the main content.

7. **What is the use of figure?**

It is used to contain self-contained content such as an image.

8. **What is the use of figcaption?**

It provides a caption for a figure.

9. What is the purpose of the footer element?

It represents footer information.

10. Which element is used to create a table?

`<table>`

11. Which CSS property changes the background colour?

`background-color`

12. Which CSS property changes the text colour?

`color`

13. Which CSS property changes the text size?

`font-size`

14. Why are semantic elements useful?

They make the structure and purpose of webpage content easier to understand.

15. What is the filename used in this experiment?

`newpaper.html`

16. Which online coding platform can be used to practice this experiment?

Search Creators Compiler / Code Studio:

<https://searchcreators.org/compiler/>

17. Quick Revision

Concept	Remember
Required Filename	<code>newpaper.html</code>
Header	<code><header></code>
Section	<code><section></code>
News Content	<code><article></code>
Related Content	<code><aside></code>
Image Container	<code><figure></code>
Figure Caption	<code><figcaption></code>
Tabular Data	<code><table></code>
Footer	<code><footer></code>
Background Colour	<code>background-color</code>
Text Colour	<code>color</code>
Text Size	<code>font-size</code>
Practice Platform	Search Creators Compiler
Website	searchcreators.org/compiler/

18. Result

Result

The HTML5 webpage `newspaper.html` was developed successfully using semantic elements such as `header`, `section`, `article`, `aside`, `figure`, `table` and `footer`. Different background colours, text colours and text sizes were applied successfully using CSS.

The experiment can be practised and executed using the **Search Creators Compiler / Code Studio**.

<https://searchcreators.org/compiler/>

END OF EXPERIMENT – 05

BCSL504 – Web Technology Lab

Prepared by Search Creators

Practice Online: searchcreators.org/compiler/
