

# Computer Science Principles

## Web Programming

### Web-Content Programming with HTML

CHAPTER 4/5: CREATING FIRST PAGE AND BASIC DOCUMENT STRUCTURE

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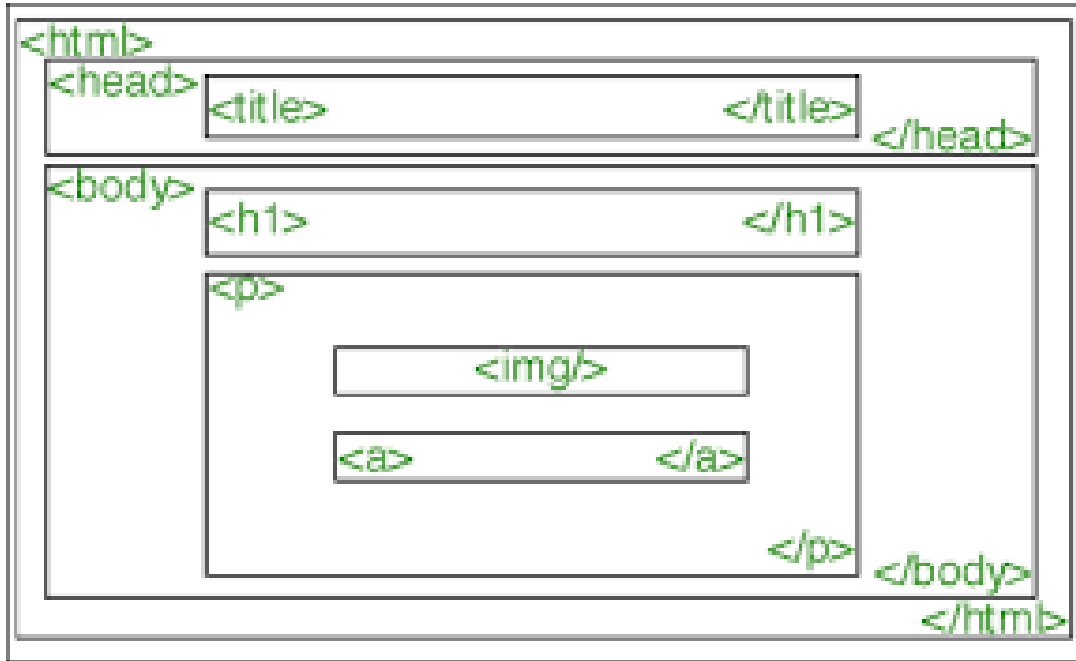
IEEE SENIOR MEMBER



# Creating First Page

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CHAPTER 4



## HTML Page Structure

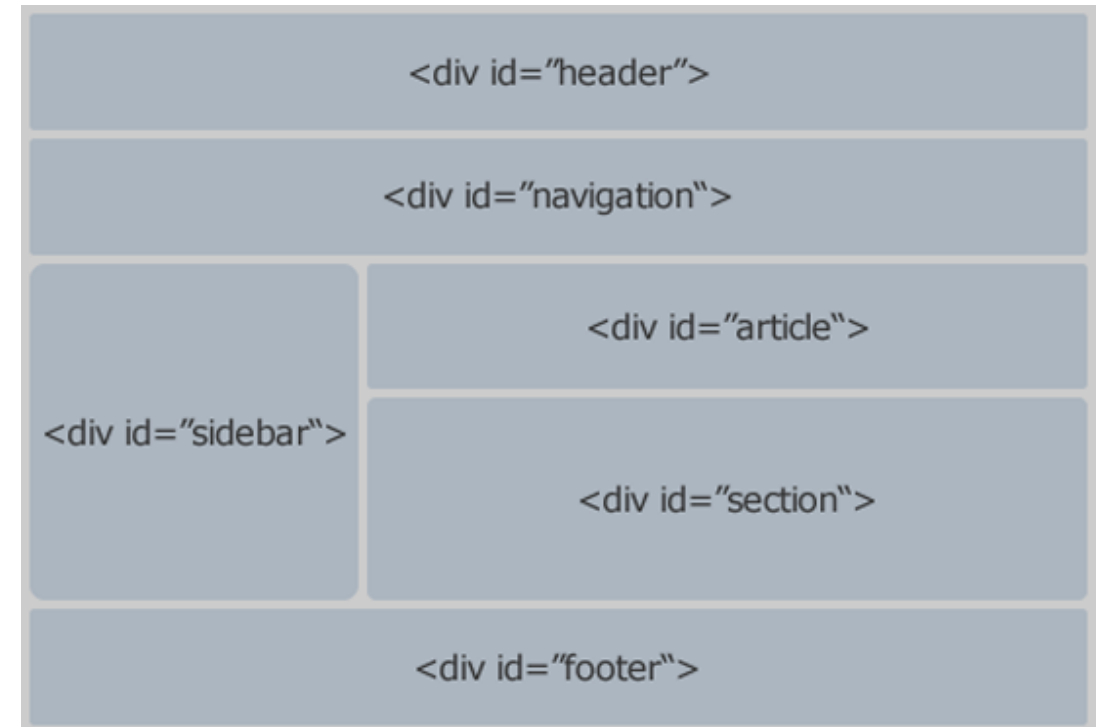
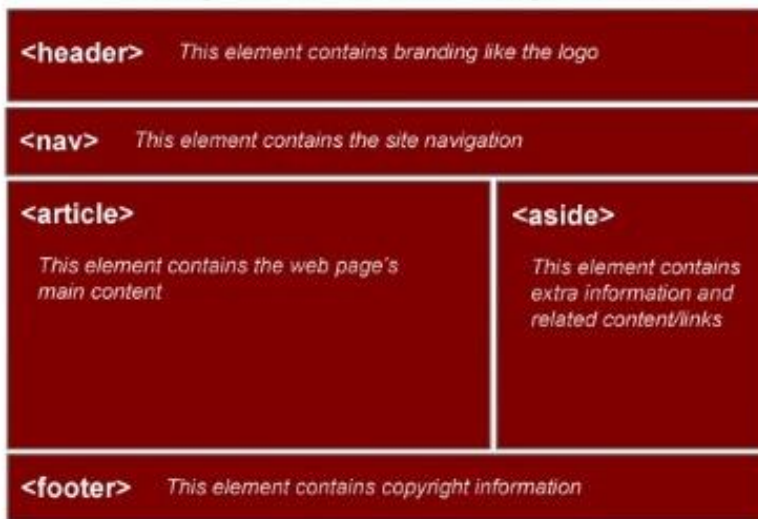
- That's all you need for a basic web page!

```
<!DOCTYPE HTML PUBLIC
  "-//W3C//DTD HTML 4.01//EN"
  "http://www.w3.org/TR/html4/strict.dtd">
<html>
  <head>
    <title>My Title</title>
  </head>
  <body>
    <p>This is my first web page.</p>
  </body>
  <footer>
    <p>This is footer section of page.</p>
  </footer>
</html>
```

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# HTML4 Page Structure

Describing the structure of a web page in HTML 5



# HTML4 to HTML5 body section Enhancement

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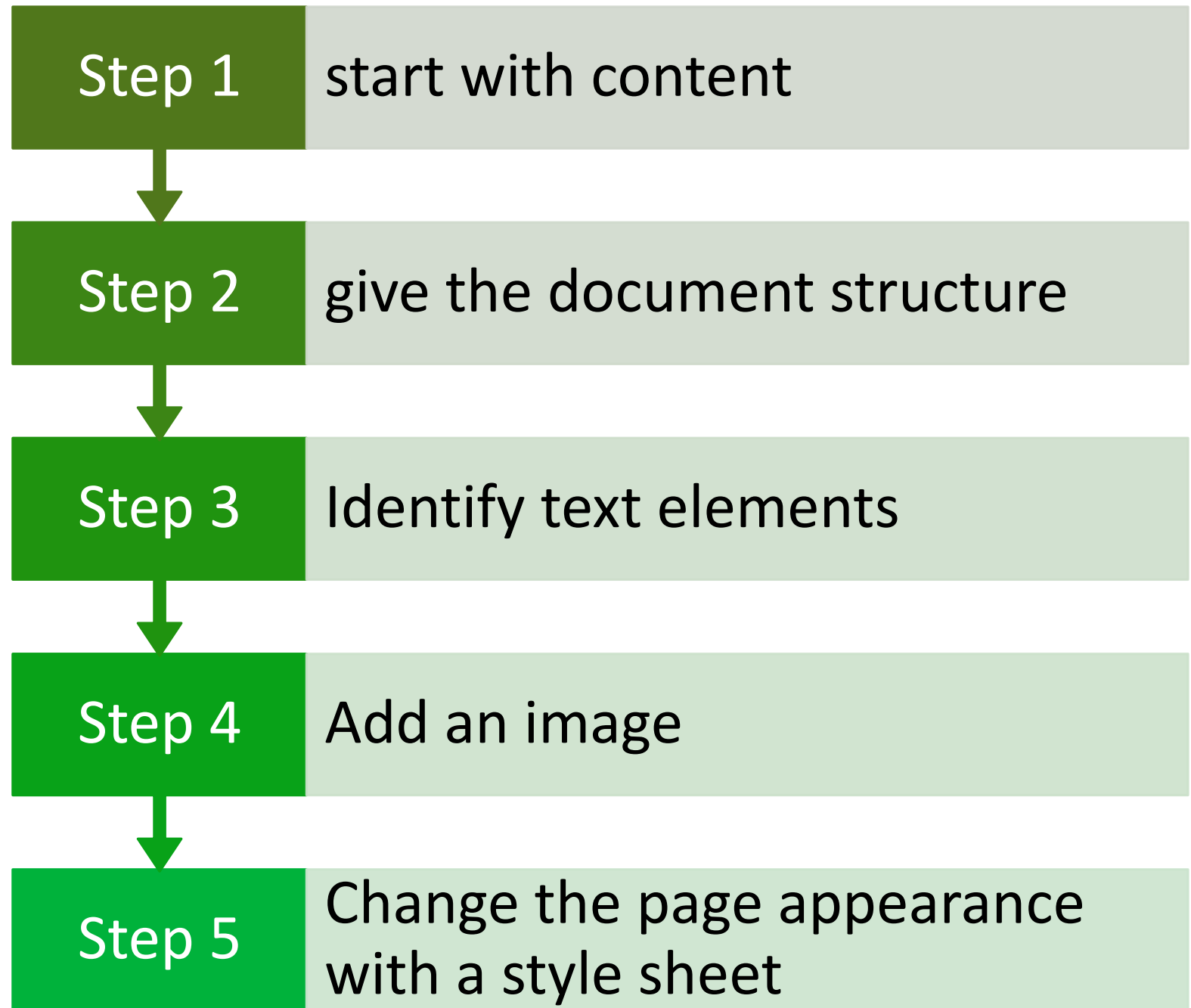
# HTML <tag> and Elements



## What is a tag?

- A tag is a boundary mark. It is used to represent some features, as markup for contents for an element or as an element.
- Tag for a feature (also called empty element): `<br>` for 1 carriage return character as break of a line, `<wbr>` for 1 word break, `<hr>` thematic break
- Tag for an element (also called empty element) definition: `<img>`, `<meta>`
- Tag as a markup for elements: `<html></html>`, `<body></body>`, `<head></head>`, `<title></title>`, `<h1></h1>`, `<p></p>`, `<ul></ul>`
- An element is some text content in the HTML page
- `<!-- put your comments here -->` is a comment which is hidden from the html page view for users.

## Step by Step Web Page Creation





## Exercise 4.1 Entering Content

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Create a new web  
page in Coffee  
Cup or Notepad



Do Exercise 4.1 as  
in the book.

## Exercise 4.2: Adding Basic Structures

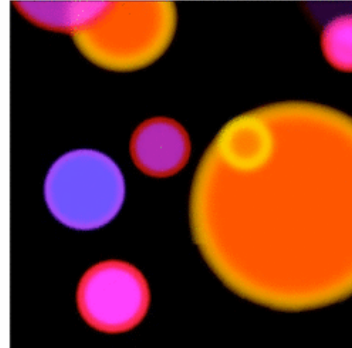
Change the  
!doctype definition  
to html5  
compatible



Work on exercise  
4.2



<img>



## Chapter 3

### <title> HTML5 Structural and Semantic Elements

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- <p> The term "semantic web" is definitely not new. The creator of the World Wide Web himself, Tim Berners-Lee, used it for the first time when talking about the transformation of the World Wide Web into an environment where published documents are associated with information and data that specify their semantic context in an interpretable format.
- <p> With HTML5, a lot of work has been done on this aspect of the World Wide Web, and a great number of new elements have been introduced to provide a better definition and structure to web pages. Still, there are more elements to address.
- <p> In this chapter, we focus on the techniques and elements used to create a semantic structure for a web page using microdata, the figure container, and the aside element.

### <h1> Understanding microdata

- <p> HTML5 introduces the possibility of defining custom semantics in a web page using microdata.
- <p> Microdata enables you to specify machine-readable custom elements in a web page by using syntax made up of name-value pairs with existing content.
- <p> The custom elements that represent the subject are called items. The values that are assigned to these items are their properties. For these custom elements to be valid, you need to define a custom vocabulary that includes the list of named properties that represent the subject.

### <footer>

M. Casario, et al., *HTML5 Solutions: Essential Techniques for HTML5 Developers*  
© Marco Casario, Peter Elst, Charles Brown, Nathalie Wormser, and Cyril Hanquez 2011

Step 3: How  
to identify  
markups in a  
document?  
Do Ex 4.3 !

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# Step 4: Add an image by <img> tag

``

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- img is the tag for image elements
- src is the source file URL location
- alt is the alternative text shown if image file is somehow not available (server down, file damaged, file removed, ...)
- src and alt are attribute (or property) of an element. An element can have many properties (attribute), in DOM format, they can also be viewed as a variable or property for an element object.
- Do Ex 4.4



# Step 5: Change the outlook by simple css style setting

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```
body {  
    background-color: #faf2e4; /* in RGB format, R is #fa, G is #f2, B is #e4 */  
    margin: 0 15%; /* no top and bottom margin, right and left margin 15% */  
}  
h1 {  
    text-align: center; /* text aligned to center */  
    font-family: serif; /* font style serif */  
    font-weight: normal; /* not bold, not italics */  
    text-transform: uppercase; /* make all letters uppercase */  
}
```

Do Ex 4.5 and validate your page by loading to a browser !!!



# Basic Document Structure

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CHAPTER 5



# Markup language was used before Web Age

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- Latex was a markup language to used to markup text file into a quality document which processes header, footer, font, bold, italics, subscript, superscript. (In fact, my own Ph.D. Dissertation was done in Latex) For more information regarding Latex, try [www.latexeditor.org](http://www.latexeditor.org)
- Hypertext Markup Language (HTML) is a markup language for hypertext which means text, image, video, audio, animation and many other multimedia component
- Micro-soft Word is also a markup authoring tool. Since 2013, Microsoft had started to use a new file format (docx), which means document file with XHTML enhancement.

# <meta charset="utf- 8"> tag

Used to pick utf-8 as the character set.

There are ASCII, extended ASCII, utf-8,  
utf-16, utf-32 character sets

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL 000	STX 001	SOT 002	ETX 003	EOT 004	ENQ 005	ACK 006	BEL 007	BS 008	HT 009	LF 010	VT 011	FF 012	CR 013	SO 014	SI 015
10	DLE 016	DC1 017	DC2 018	DC3 019	DC4 020	NAK 021	SYN 022	ETB 023	CAN 024	EM 025	SUB 026	ESC 027	FS 028	GS 029	RS 030	US 031
20	SP 032	!	#	\$	%	&	(	)	*	+	,	-	.	/		
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[	]			
60	080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
70	.	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
80	096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
90	p	q	r	s	t	u	v	w	x	y	z	{	}	~		
A0	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
B0	Ж	Г	,	і	„	…	†	Y	X	У	Љ	«	»	Ѓ	Ѕ	Ї
C0	128	129	8218	402	8222	8230	8224	8225	710	8240	352	8249	338	141	142	143
D0	ж	.	„	„	„	„	„	„	™	љ	»	„	ќ	ћ	и	
E0	144	8216	8217	8220	8221	8226	8211	8212	732	8482	353	8250	339	157	158	376
F0	Š	š	Ј	Љ	Ѓ	Ѕ	Ї	Ї	Ї	©	©	«	»	-	@	Ї
	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
	°	±	І	і	г	е	ђ	·	џ	№	ѕ	»	ј	ѕ	ѕ	Ї
	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255



# Text Content Tags (I)

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**Heading:** `<h1></h1>` /\* heading of different level: h1, h2, h3,h4, ...\*/

**Paragraph:** `<p></p>`

**Unordered list:** `<ul><li>List Item 1</li>  
                  <li>List Item 2</li>  
                  </ul>`

**Ordered list:** `<ol><li>List Item 1</li>  
                  <li>List Item 2</li>  
                  </ol>`

**Description list:** `<dl><dt>Term</dt>  
                  <dd>Definition</dd>  
                  </dl>`



# Text Content Tag (II)

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**Quotation:** `<blockquote></blockquote>` /\* text will be shown in quotation format \*/

**Preformatted Text:** `<pre></pre>` /\* Text will shown as you type \*/

**Figures:** `<figure></figure>` /\* include figure in text, normally image \*/

**Figure Caption:** `<figcaption> </figcaption>` /\* description of the figure \*/



## Special Text blocks (I)

**Text division:** <div></div> /\* division for html 4 \*/

**Span:** <span></span> /\* to define a span of text for special format or link \*/

<strong></strong> /\* text in **emphasized** format \*/

<small></small> /\* text in small letter small \*/

**Subscripts:** <sub></sub> /\* text in subscripts CO<sub>2</sub> \*/

**Superscripts:** <sup></sup> /\* text in superscripts x<sup>2</sup> \*/

**Strike through:** <s></s> /\* text in ~~strike-through~~-format \*/

**Bold:** <b></b>; Italics: <i></i>; underline: <u></u>;  
**emphasized text:** <em></em>; short quotation: <q></q>

**Hyperlink:** <a></a> /\* define a link to another page \*/

<br>: line break; <wbr>: word break; <abbr></abbr>:  
abbreviation;

**Special character:** &nbsp; & & /\* see table 5-2 for details \*/



# Special Text Blocks (II): Text in special style

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**Machine Readable Data:** `<data></data>`

**Inserted text:** `<ins></ins>`; deleted text: `<del></del>` `/* put text in different style so people know the text is either inserted or deleted in a new version */`

**Defining Term:**`<dfn></dfn>` `/* mark text as definition style */`

**Citation:** `<cite></cite>`



**Program code:** `<code></code>`



**Variable:** `<var></var>`



**Program sample:** `<samp></samp>`

**User-entered keyboard strokes:** `<kbd></kbd>`

## Date and Time (datetime)

2020-02-02 ▾ 23:59   UTC

 February 

2020  

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
5	27	28	29	30	31	<u>1</u>	<u>2</u>
6	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
7	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
8	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>
9	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>1</u>
10	2	3	4	5	6	7	8

Today

None

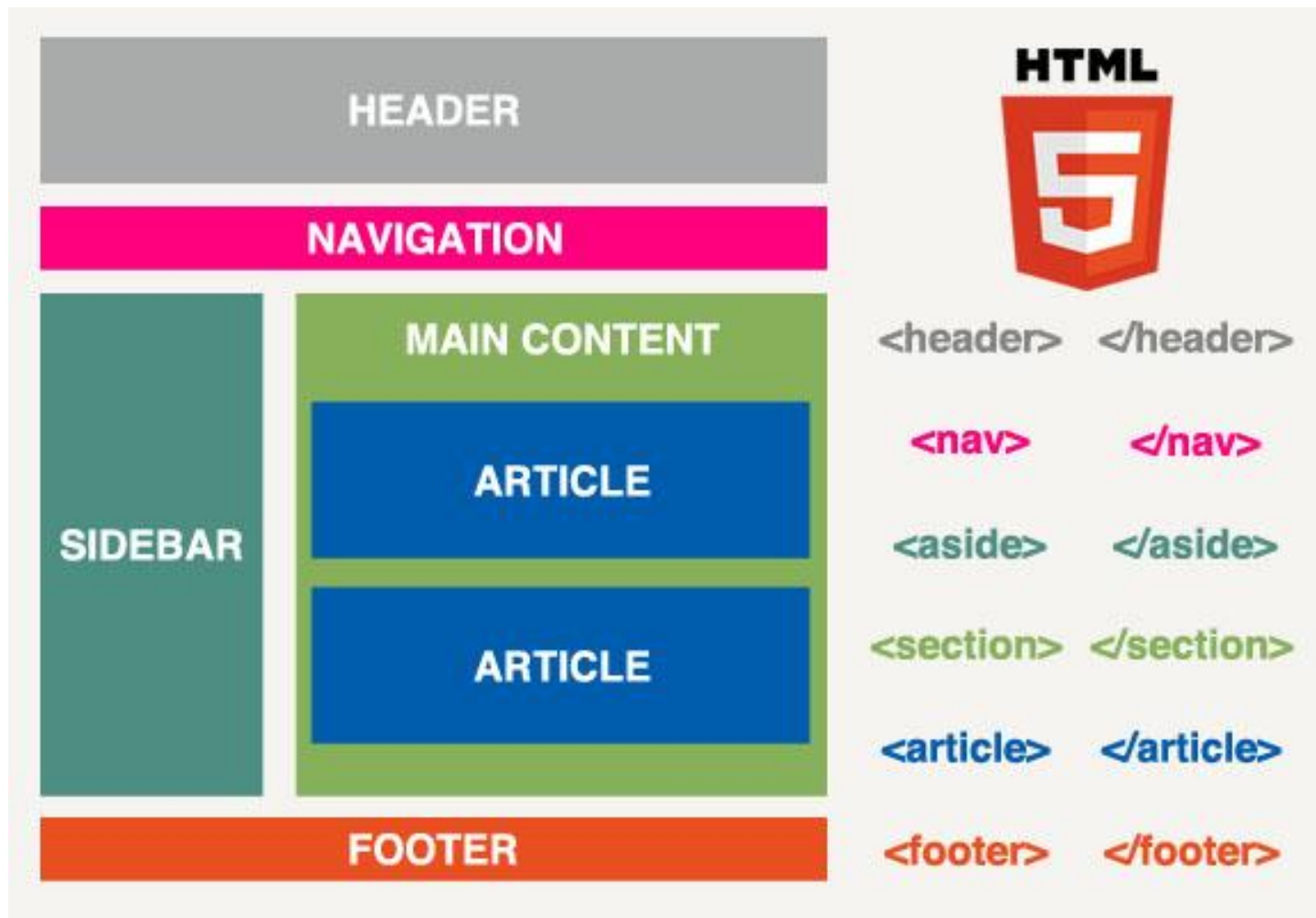
## Time (time)

# Date and Time special tag

**Time data:** `<time datetime="2012-09-01T 20:00-05:00"></time> /* this is text format */`

- Compared with Date and Time input form in html



# Tags for Essay or Reports

**Header:** `<header>`

**Division in articles:** `<section>`

**Article:** `<article>`

**Navigation Link Bar:** `<nav>`

**Side notes:** `<aside>`

**Foot notes:** `<footer>`

**Copyright words and address:** `<address>`

**Note:** These divisions are used to provide special CSS style. Otherwise HTML 4's division is good enough to provide structural information



# Properties of an Element as an identifier

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- **id** : `<div id="store">` store is the identifier for the division. id can be used to identify any individual element.
- **class**: `<div class="news">` There might be many division sharing the same class so that they can share some same features such as same background color or something. It can be viewed as a group id. This class group can share same CSS style
- **name**: name is used as variable name for an element. For example, an input form can have a variable named xxx, when the placeholder is assigned value of "bbb", then aaa = "bbb"
  - `<input name="comment" placeholder="This is one.">` Then name is assigned a value of "This is one." name can be viewed as another way of grouping a few input form as one same type to assign value to a same variable.
  - `<input type="radio" name="gender" value="boy">`
  - `<input type="radio" name="gender" value="girl">`
- **value**: default value for a input form.

# Work on the Black Goose Project Ex 5.1-5.3

Copy a template HTML from the original directory, save a copy for your own.

Perform your own changes

Step by step to finish Ex. 5.1, save a version

Step by step to finish Ex. 5.2, save a another version

Step by step to finish Ex. 5.3, save the final version

# The Document Object Model (DOM)

