Web Technologies

Unit2 / Part-2

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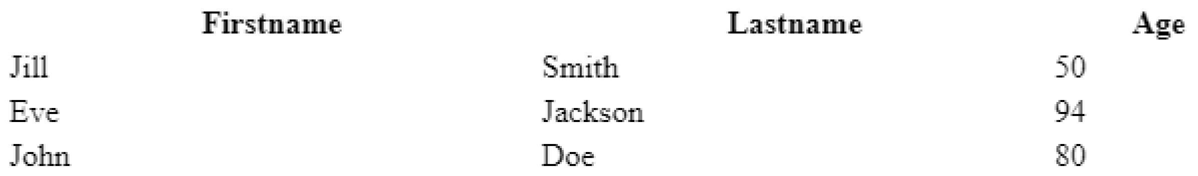
HTML Tables

The <table> tag defines an HTML table.

Each table row is defined with a <tr> tag. Each table header is defined with a <th> tag. Each table data/cell is defined with a <td> tag.

By default, the text in <th> elements are bold and centered.

By default, the text in <td> elements are regular and left-aligned.



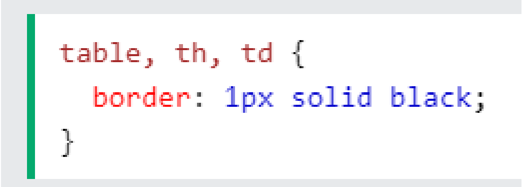
Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

Note: The <td> elements are the data containers of the table.
They can contain all sorts of HTML elements; text, images, lists, other tables, etc.

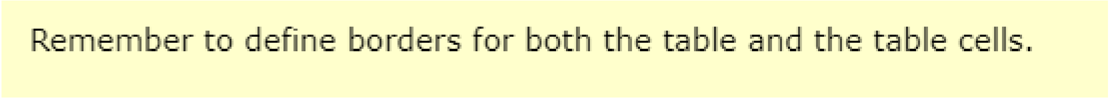
```html
<table style="width:100%">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
```

HTML Table - Add a Border

To add a border to a table, use the CSS `border` property:



```
table, th, td {
  border: 1px solid black;
}
```



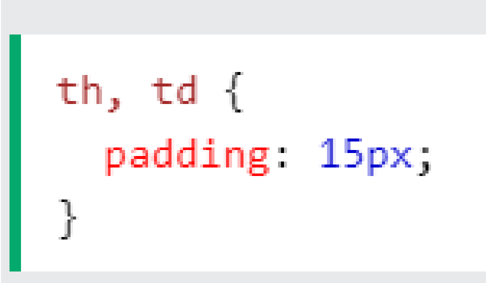
Remember to define borders for both the table and the table cells.

HTML Table - Add Cell Padding

Cell padding specifies the space between the cell content and its borders.

If you do not specify a padding, the table cells will be displayed without padding.

To set the padding, use the CSS `padding` property:

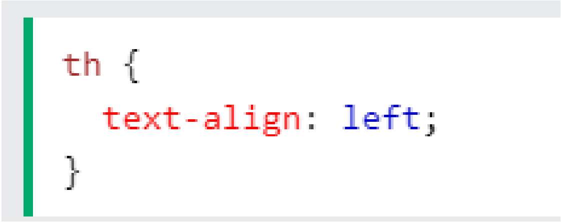


```
th, td {
  padding: 15px;
}
```

HTML Table - Left-align Headings

By default, table headings are bold and centered.

To left-align the table headings, use the CSS `text-align` property:

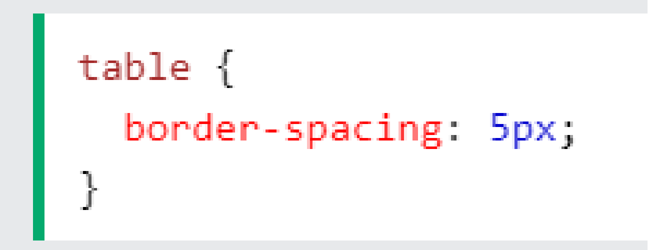


```
th {
  text-align: left;
}
```

HTML Table - Add Border Spacing

Border spacing specifies the space between the cells.

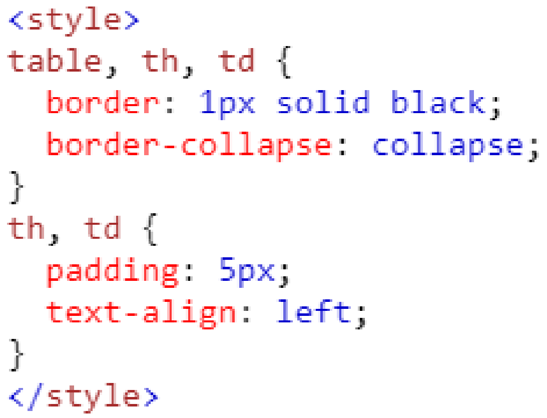
To set the border spacing for a table, use the CSS `border-spacing` property:



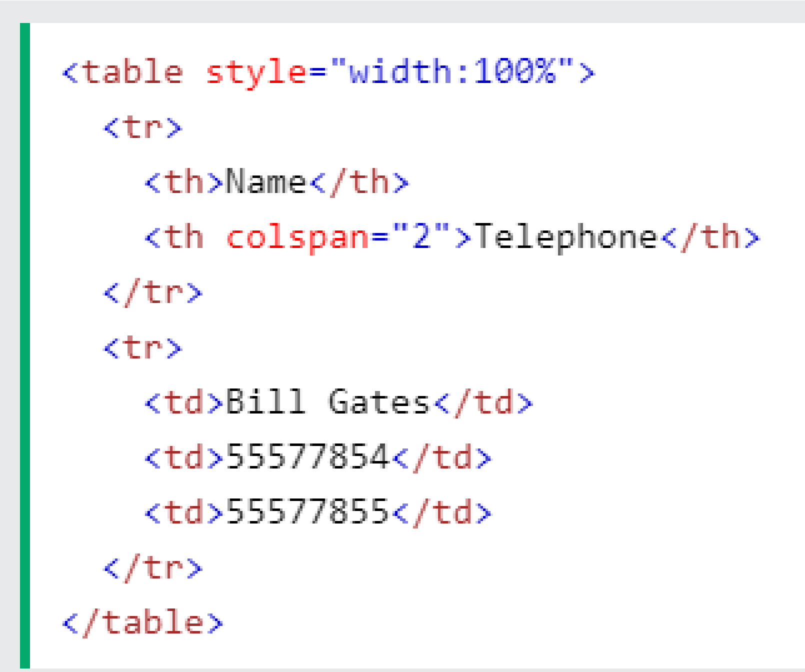
```
table {
  border-spacing: 5px;
}
```

HTML Table - Cell that Spans Many Columns

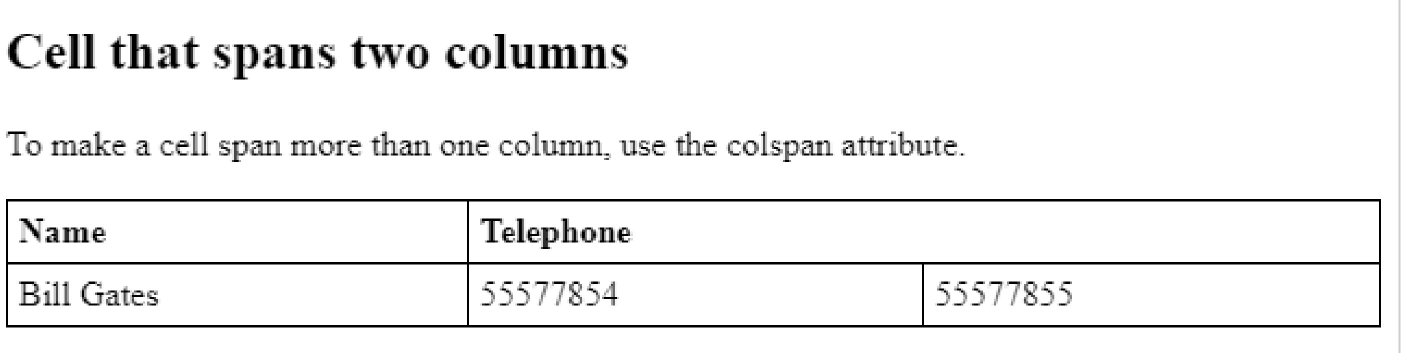
To make a cell span more than one column, use the `colspan` attribute:



```
<style>
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
}
th, td {
  padding: 5px;
  text-align: left;
}
</style>
```



```
<table style="width:100%">
  <tr>
    <th>Name</th>
    <th colspan="2">Telephone</th>
  </tr>
  <tr>
    <td>Bill Gates</td>
    <td>55577854</td>
    <td>55577855</td>
  </tr>
</table>
```



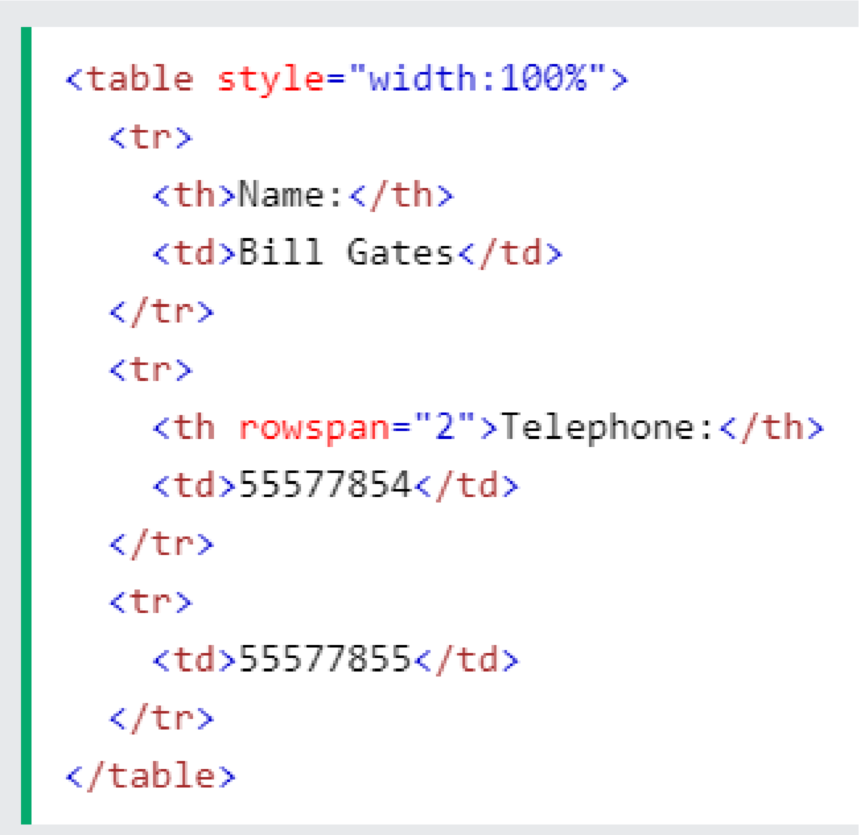
Cell that spans two columns

To make a cell span more than one column, use the colspan attribute.

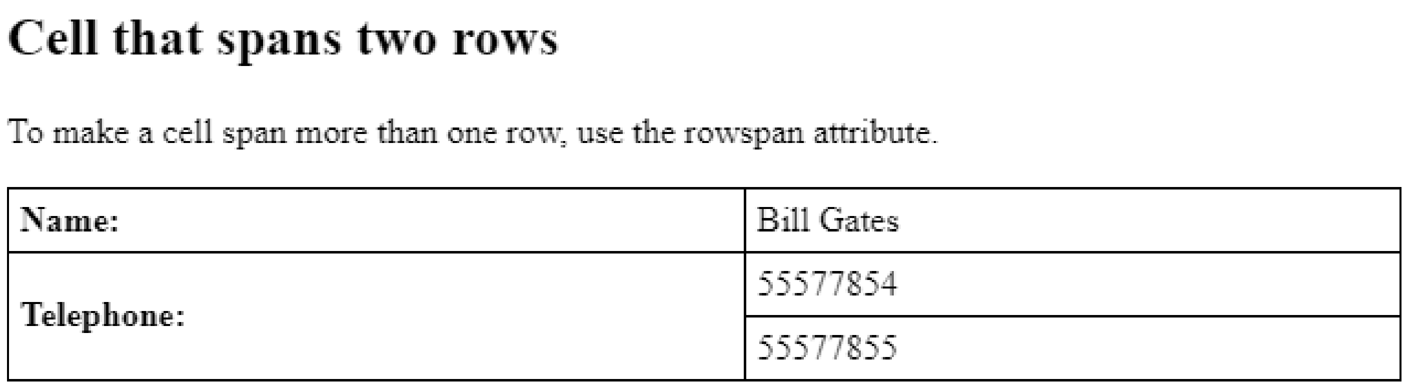
Name	Telephone	
Bill Gates	55577854	55577855

HTML Table - Cell that Spans Many Rows

To make a cell span more than one row, use the `rowspan` attribute:



```
<table style="width:100%">
  <tr>
    <th>Name:</th>
    <td>Bill Gates</td>
  </tr>
  <tr>
    <th rowspan="2">Telephone:</th>
    <td>55577854</td>
  </tr>
  <tr>
    <td>55577855</td>
  </tr>
</table>
```



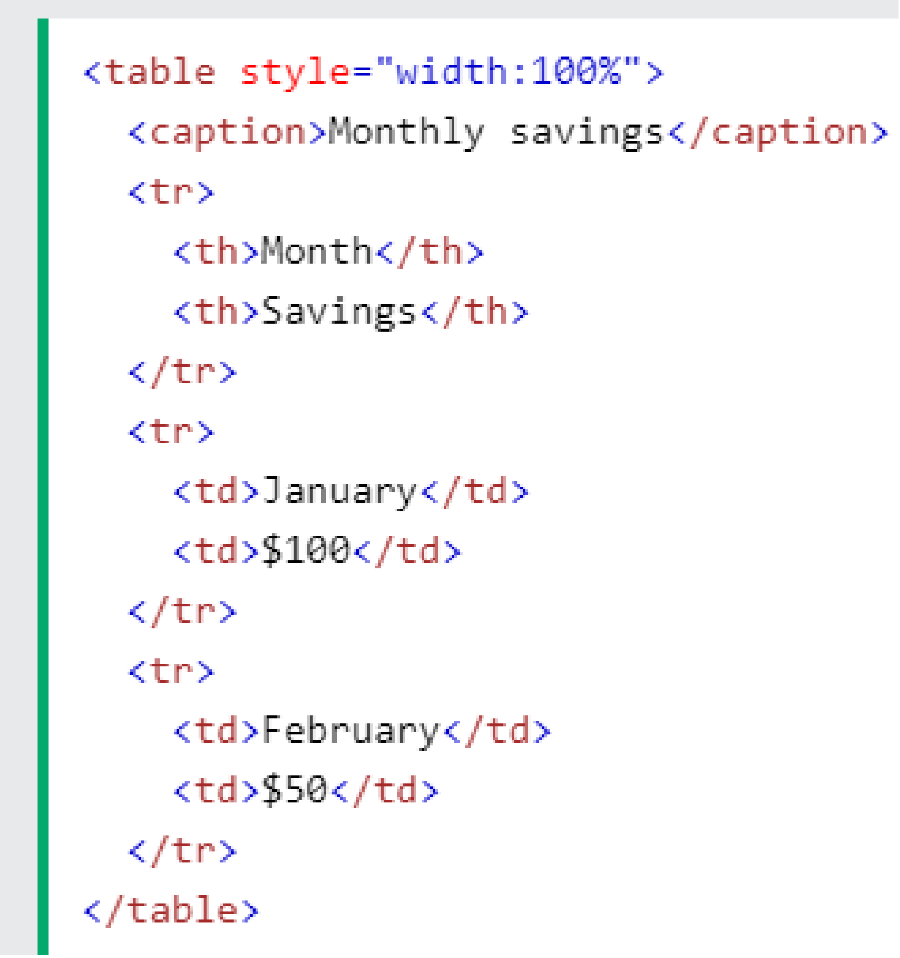
Cell that spans two rows

To make a cell span more than one row, use the rowspan attribute.

Name:	Bill Gates
Telephone:	55577854
	55577855

HTML Table - Add a Caption

To add a caption to a table, use the `<caption>` tag:



```
<table style="width:100%">
  <caption>Monthly savings</caption>
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$50</td>
  </tr>
</table>
```

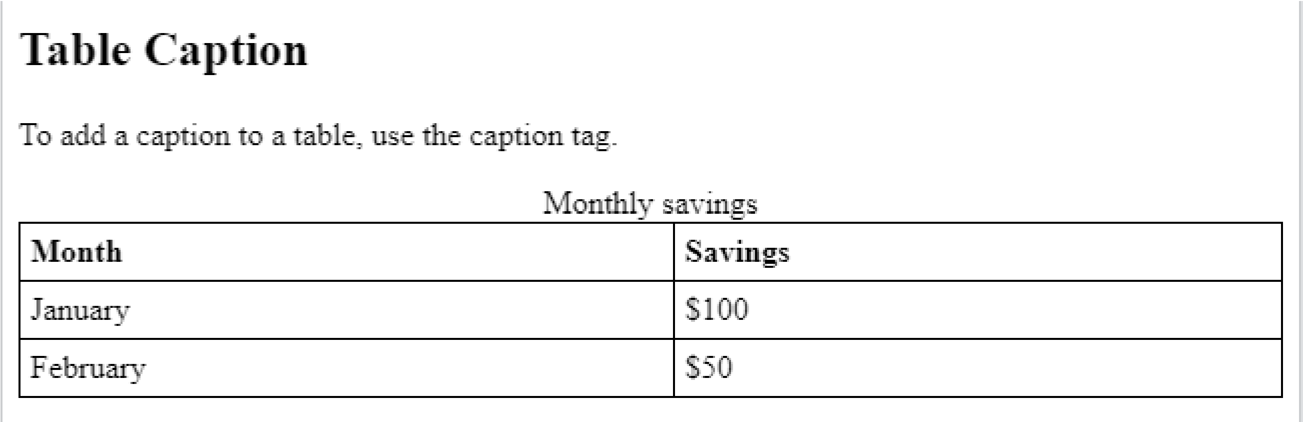


Table Caption

To add a caption to a table, use the caption tag.

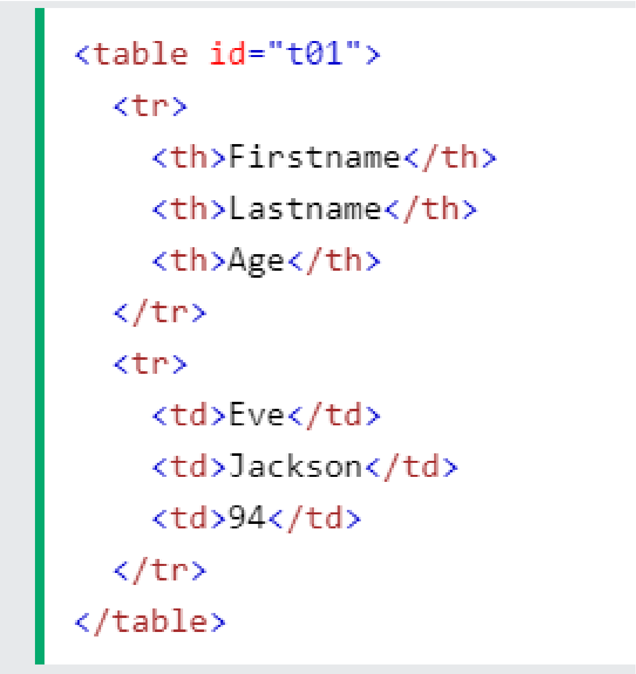
Monthly savings

Month	Savings
January	$100
February	$50

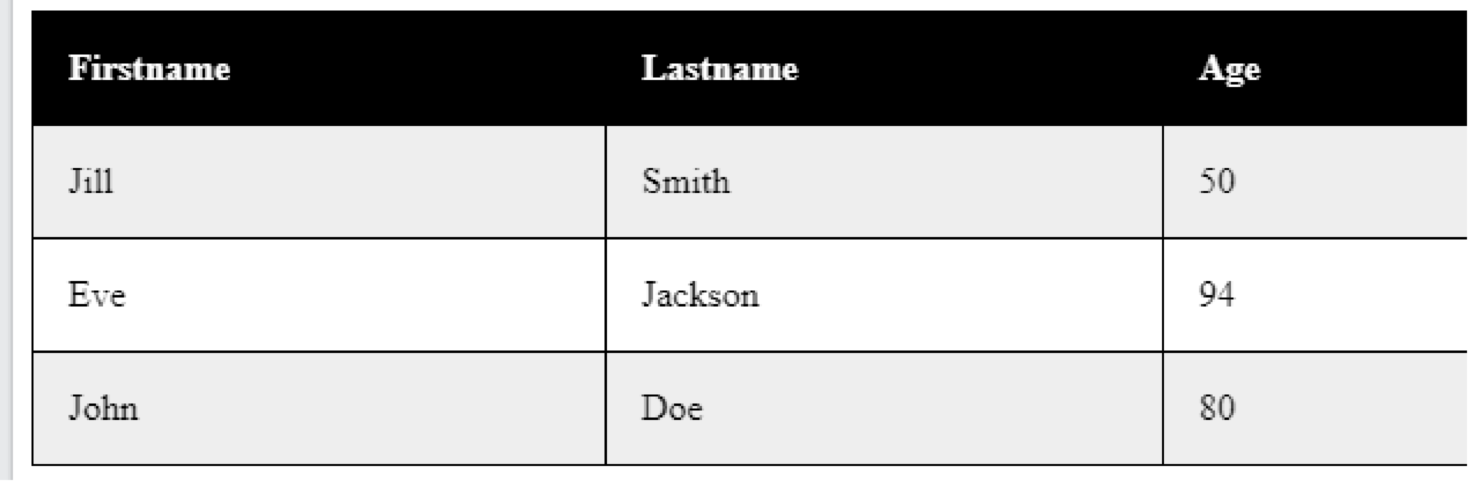
Note: The `<caption>` tag must be inserted immediately after the `<table>` tag.

A Special Style for One Table

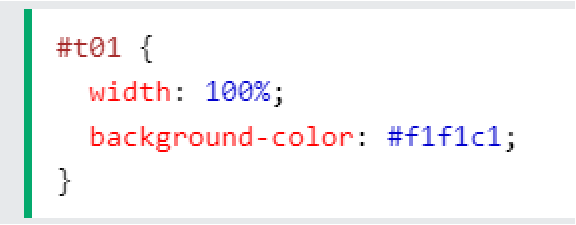
To define a special style for one particular table, add an `id` attribute to the table:



```
<table id="t01">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
```

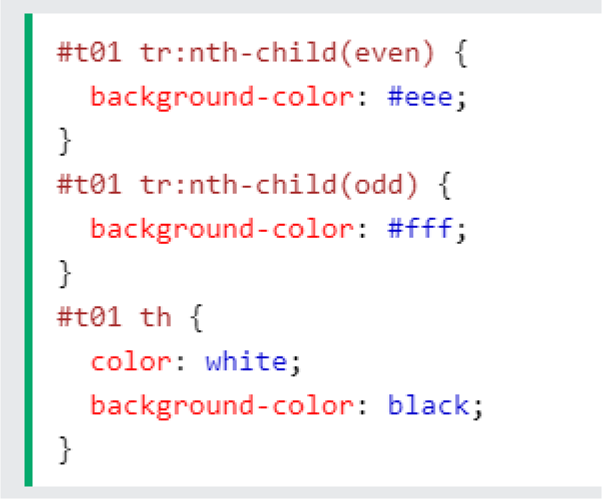


Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80



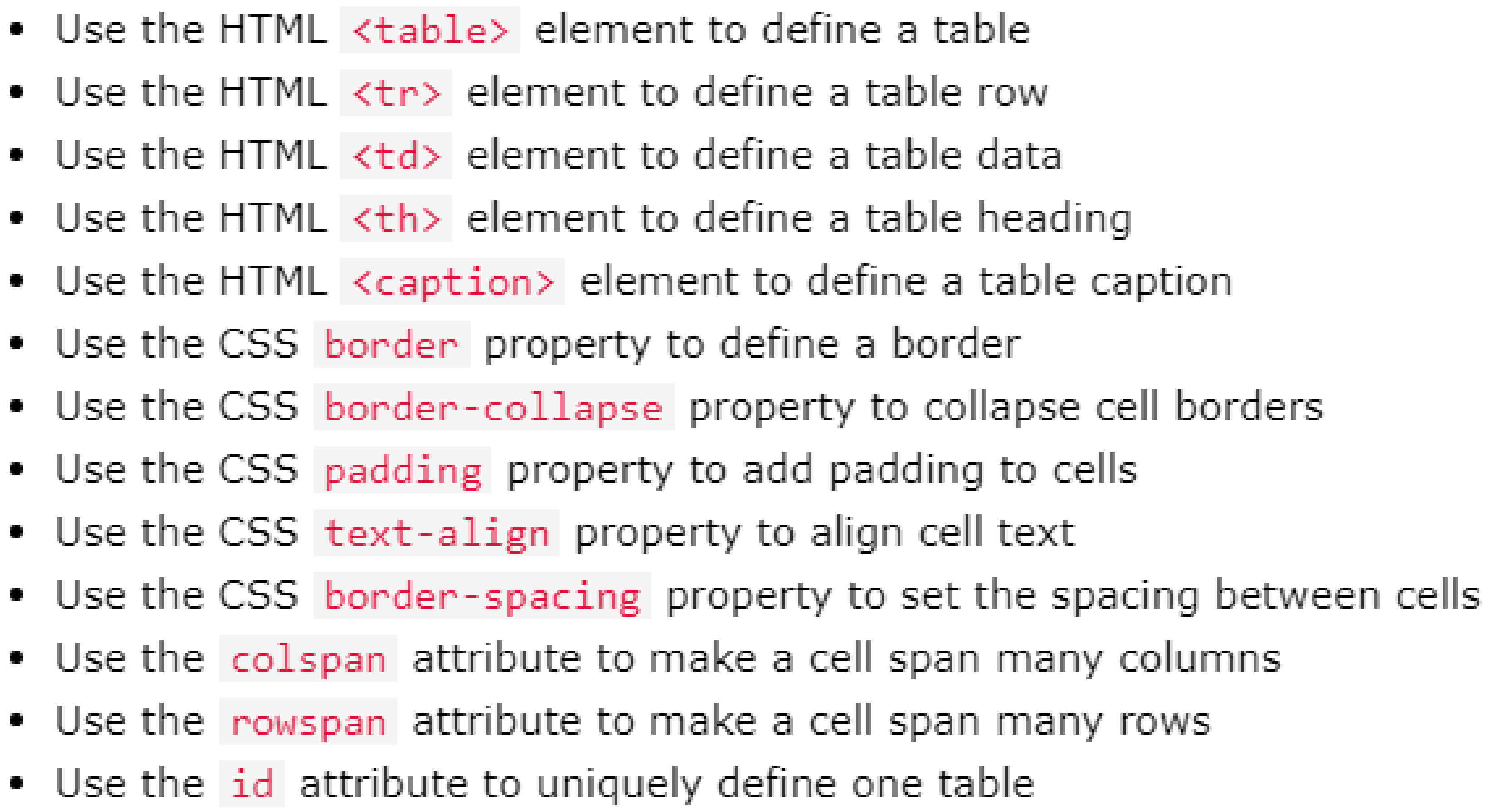
```
#t01 {
  width: 100%;
  background-color: #f1f1c1;
}
```

And add more styles:



```
#t01 tr:nth-child(even) {
  background-color: #eee;
}
#t01 tr:nth-child(odd) {
  background-color: #fff;
}
#t01 th {
  color: white;
  background-color: black;
}
```

Summary

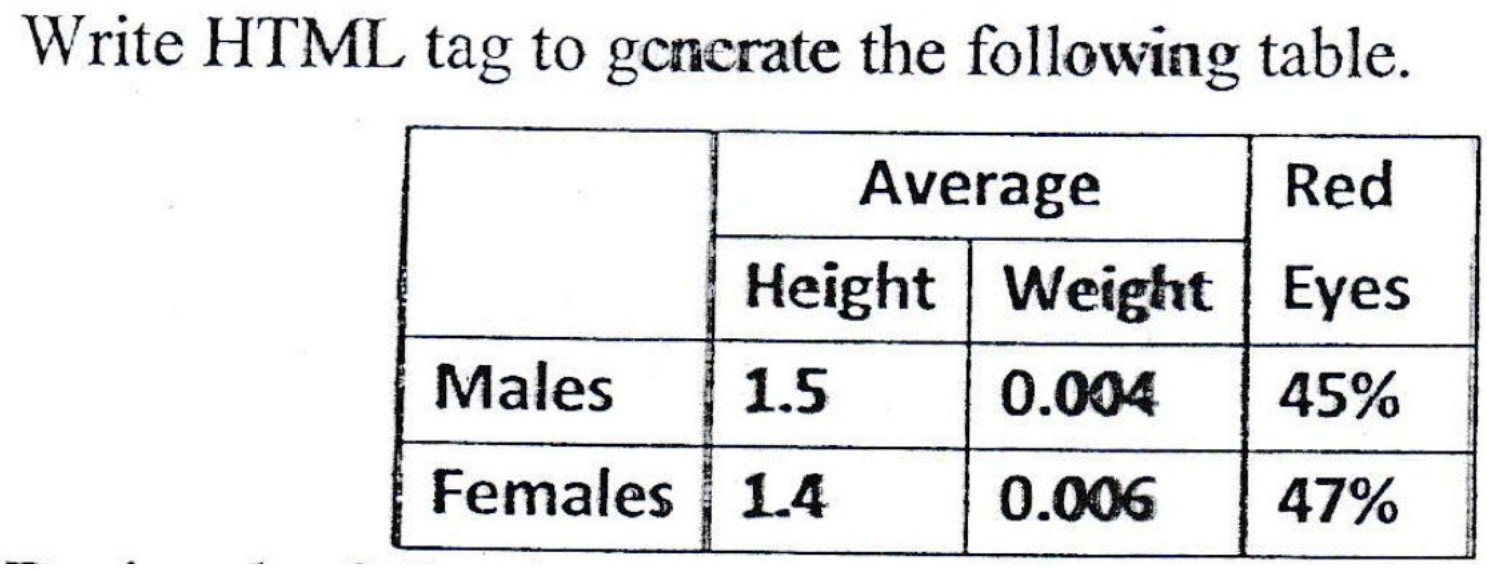


- Use the HTML `<table>` element to define a table
- Use the HTML `<tr>` element to define a table row
- Use the HTML `<td>` element to define a table data
- Use the HTML `<th>` element to define a table heading
- Use the HTML `<caption>` element to define a table caption
- Use the CSS `border` property to define a border
- Use the CSS `border-collapse` property to collapse cell borders
- Use the CSS `padding` property to add padding to cells
- Use the CSS `text-align` property to align cell text
- Use the CSS `border-spacing` property to set the spacing between cells
- Use the `colspan` attribute to make a cell span many columns
- Use the `rowspan` attribute to make a cell span many rows
- Use the `id` attribute to uniquely define one table

Lab works

Lab 07: Make your Class routine

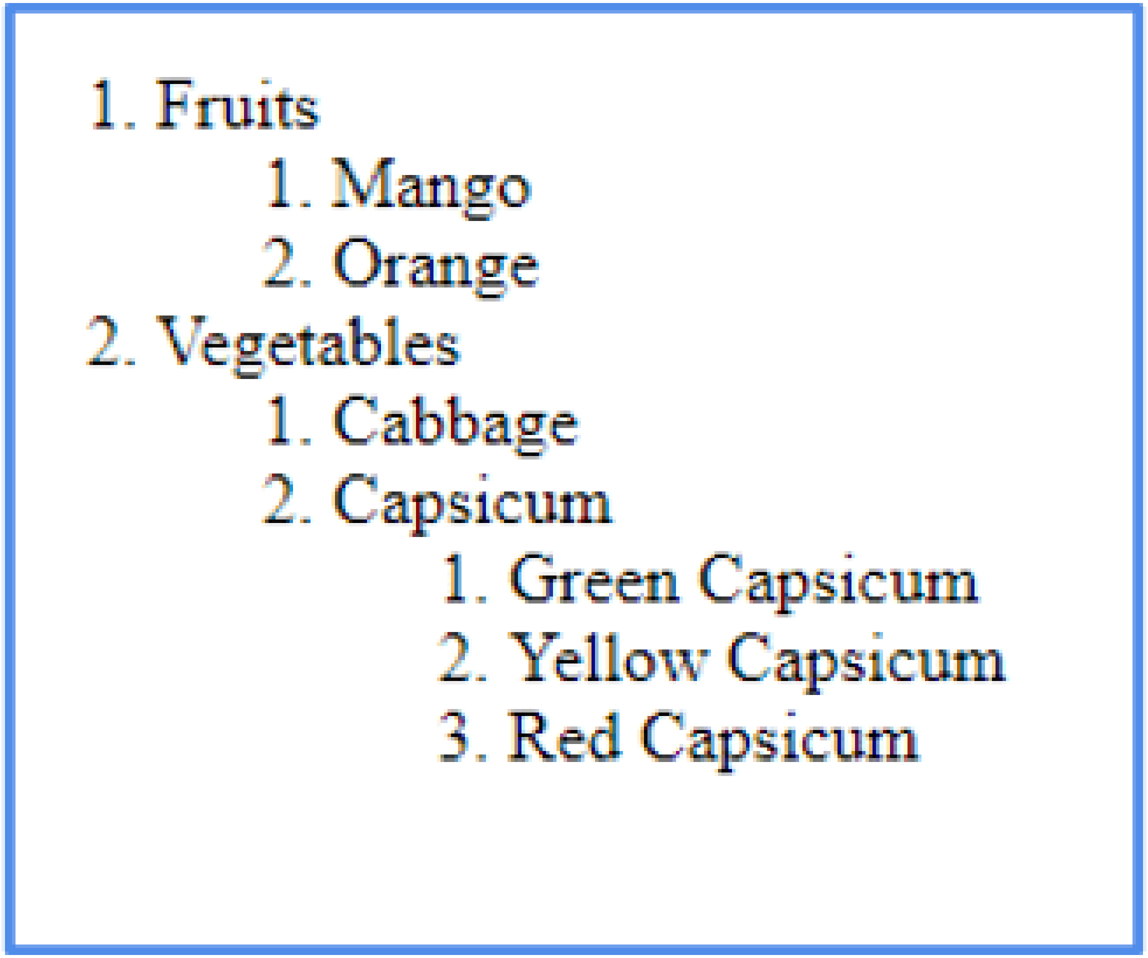
Lab 08:



Write HTML tag to generate the following table.

	Average		Red Eyes
	Height	Weight	
Males	1.5	0.004	45%
Females	1.4	0.006	47%

- Lab 09: Create the following html lists



1. Fruits
    1. Mango
    2. Orange
2. Vegetables
    1. Cabbage
    2. Capsicum
        1. Green Capsicum
        2. Yellow Capsicum
        3. Red Capsicum

HTML <div> Tag

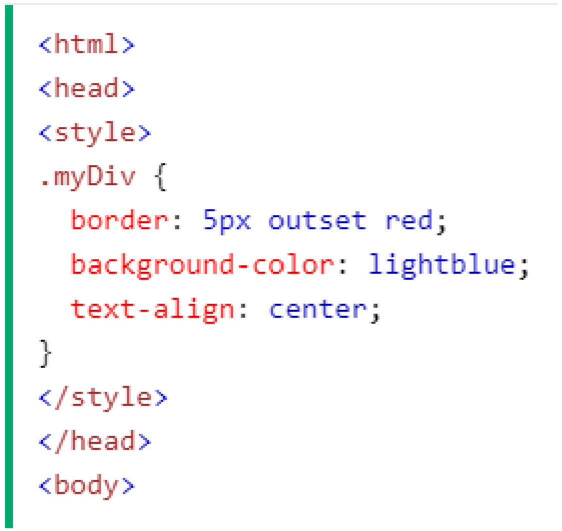
The `<div>` tag defines a division or a section in an HTML document.

The `<div>` tag is used as a container for HTML elements - which is then styled with CSS or manipulated with JavaScript.

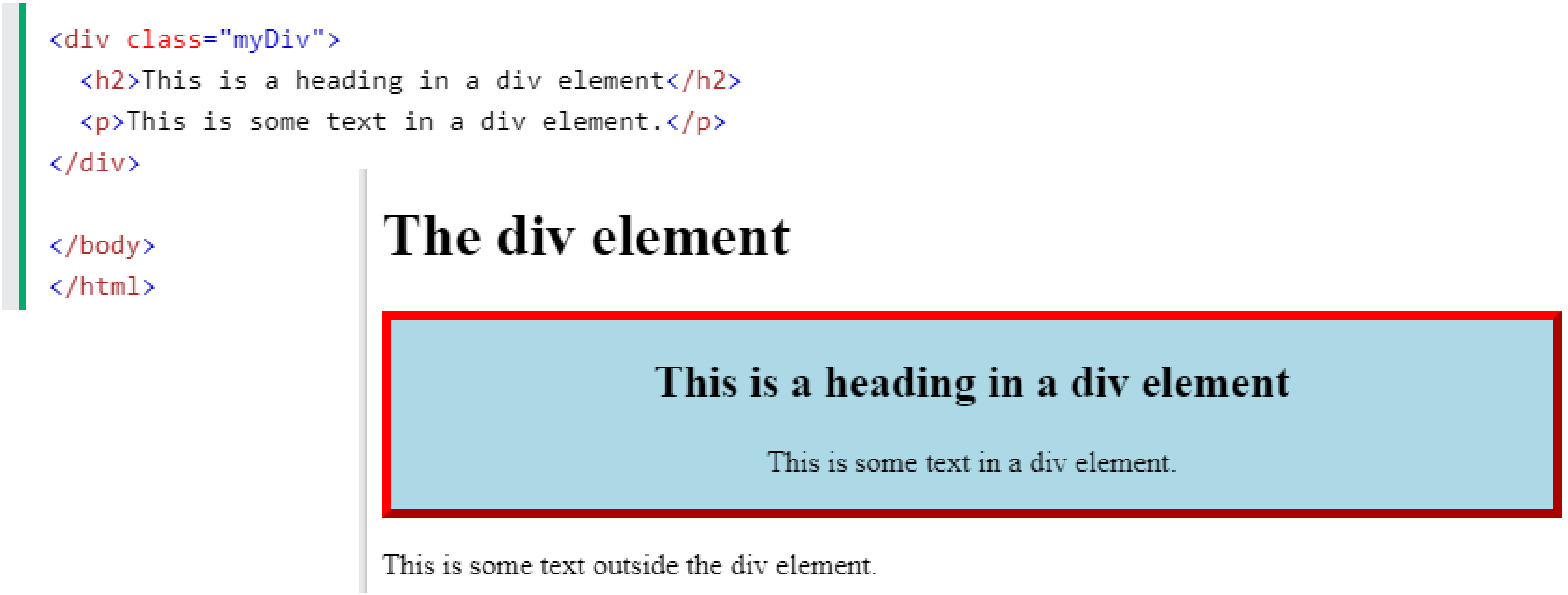
The `<div>` tag is easily styled by using the class or id attribute.

Any sort of content can be put inside the `<div>` tag!

Note: By default, browsers always place a line break before and after the `<div>` element.



```html
<html>
<head>
<style>
.myDiv {
  border: 5px outset red;
  background-color: lightblue;
  text-align: center;
}
</style>
</head>
<body>
```



```html
<div class="myDiv">
  <h2>This is a heading in a div element</h2>
  <p>This is some text in a div element.</p>
</div>

</body>
</html>
```

The div element

This is a heading in a div element

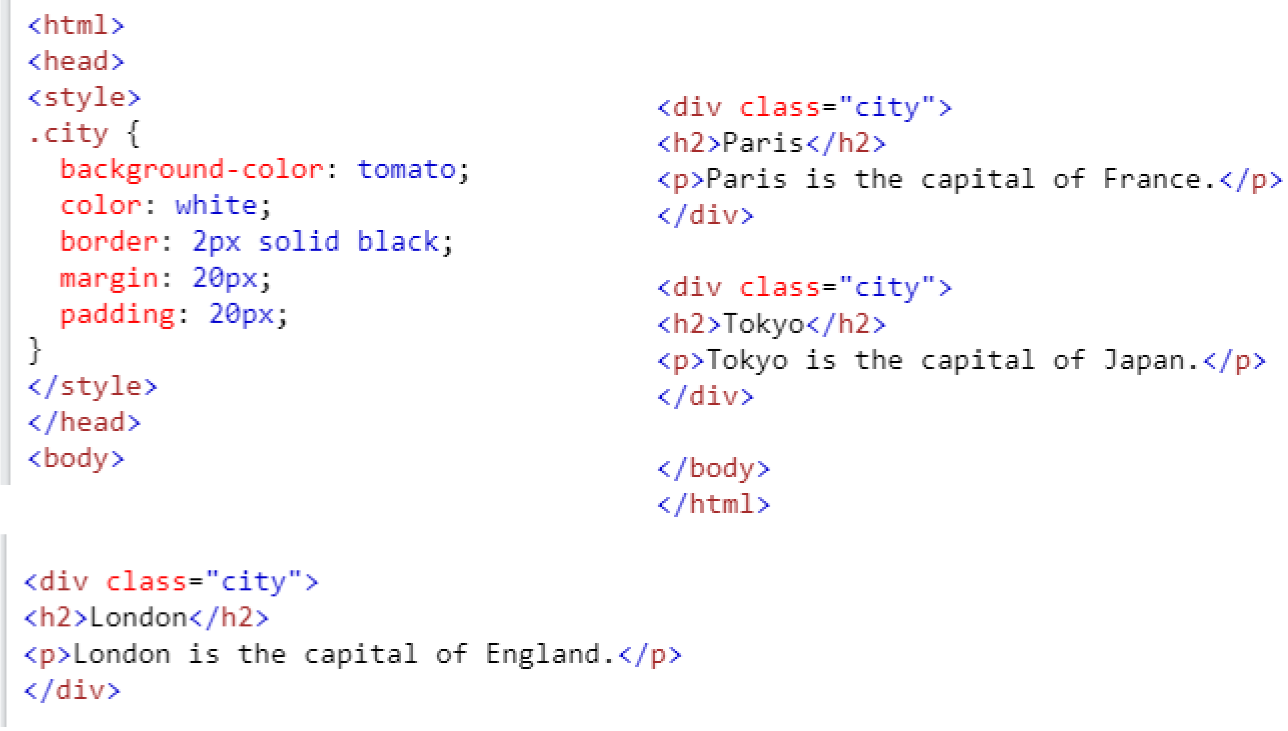
This is some text in a div element.

This is some text outside the div element.

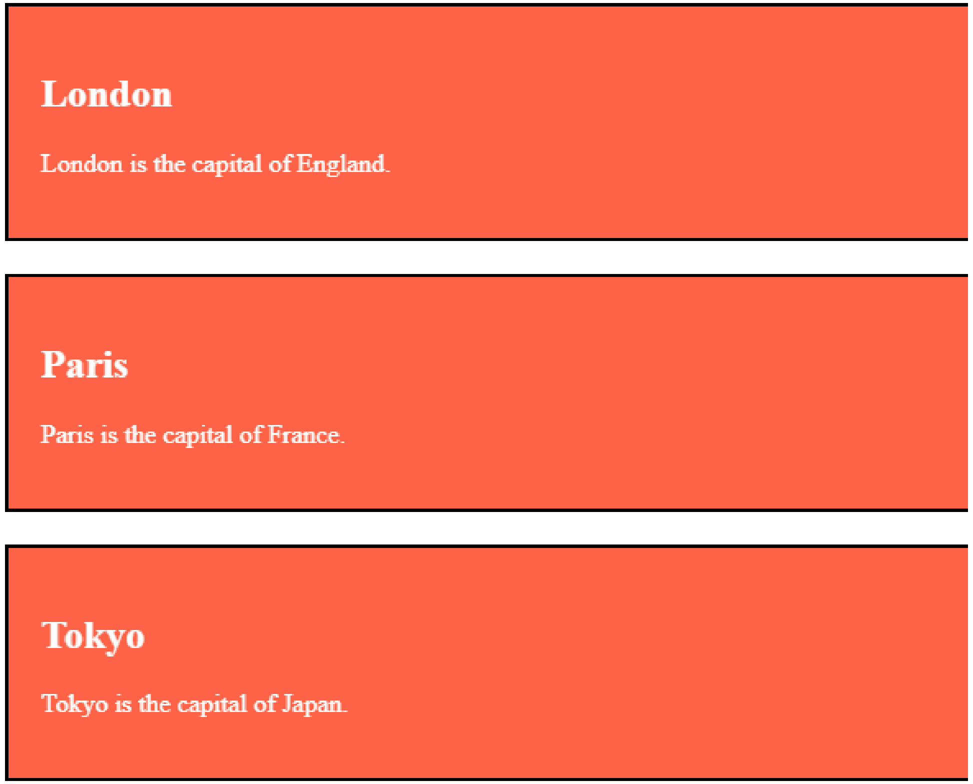
HTML class Attribute

The `class` attribute is often used to point to a class name in a style sheet. It can also be used by a JavaScript to access and manipulate elements with the specific class name.

In the following example we have three `<div>` elements with a `class` attribute with the value of "city". All of the three `<div>` elements will be styled equally according to the `.city` style definition in the head section:



```
<html>
<head>
<style>
.city {
  background-color: tomato;
  color: white;
  border: 2px solid black;
  margin: 20px;
  padding: 20px;
}
</style>
</head>
<body>

<div class="city">
<h2>London</h2>
<p>London is the capital of England.</p>
</div>

<div class="city">
<h2>Paris</h2>
<p>Paris is the capital of France.</p>
</div>

<div class="city">
<h2>Tokyo</h2>
<p>Tokyo is the capital of Japan.</p>
</div>

</body>
</html>
```



London

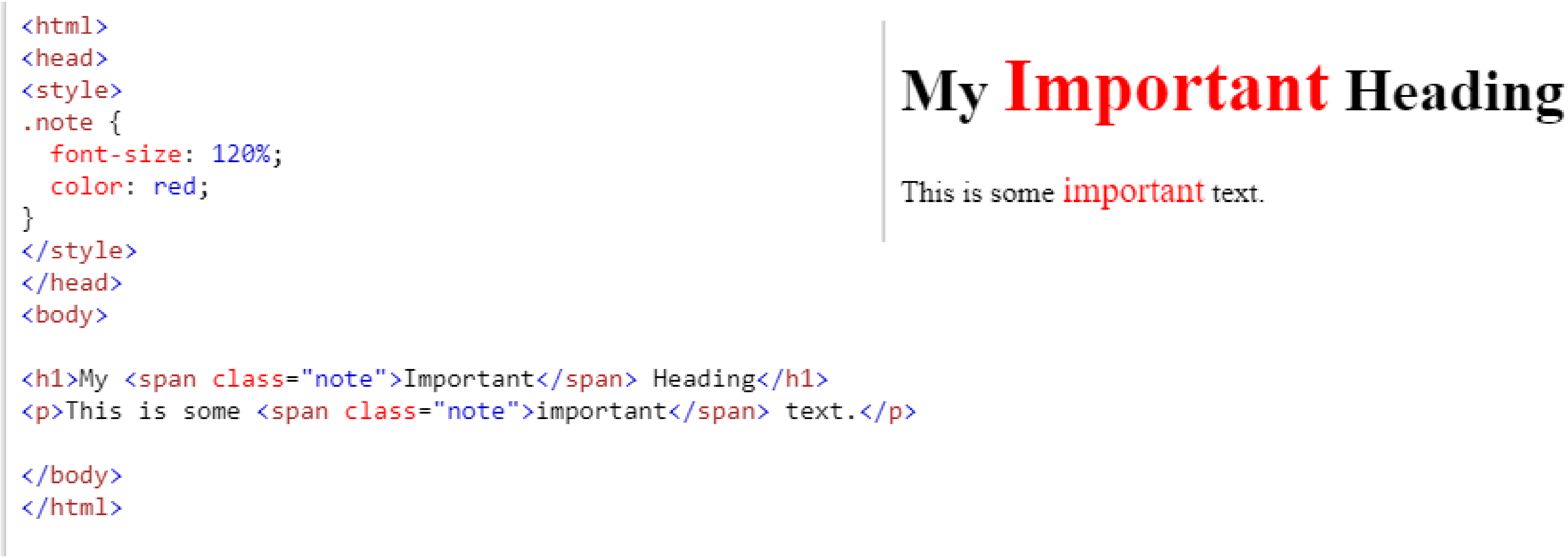
London is the capital of England.

Paris

Paris is the capital of France.

Tokyo

Tokyo is the capital of Japan.



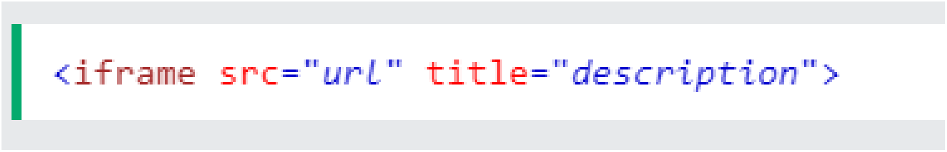
```
<html>
<head>
<style>
.note {
  font-size: 120%;
  color: red;
}
</style>
</head>
<body>

<h1>My <span class="note">Important</span> Heading</h1>
<p>This is some <span class="note">important</span> text.</p>

</body>
</html>
```

My Important Heading

This is some important text.

HTML Iframes

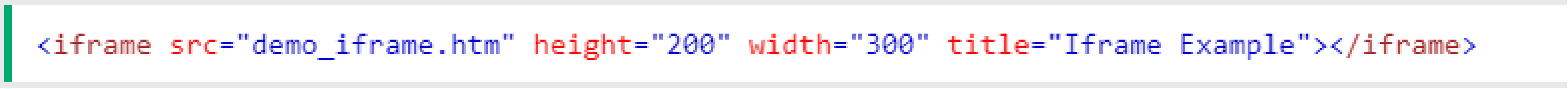
An HTML iframe is used to display a web page within a web page.



```
<iframe src="url" title="description">
```

The HTML `<iframe>` tag specifies an inline frame.

An inline frame is used to embed another document within the current HTML document.



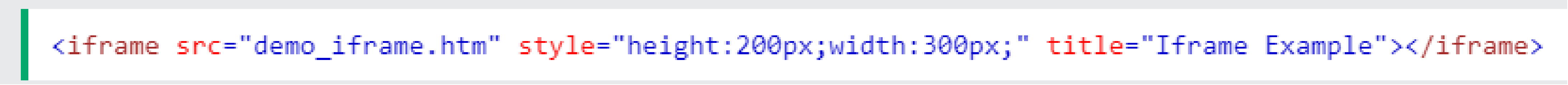
```
<iframe src="demo_iframe.htm" height="200" width="300" title="Iframe Example"></iframe>
```

Iframe - Set Height and Width

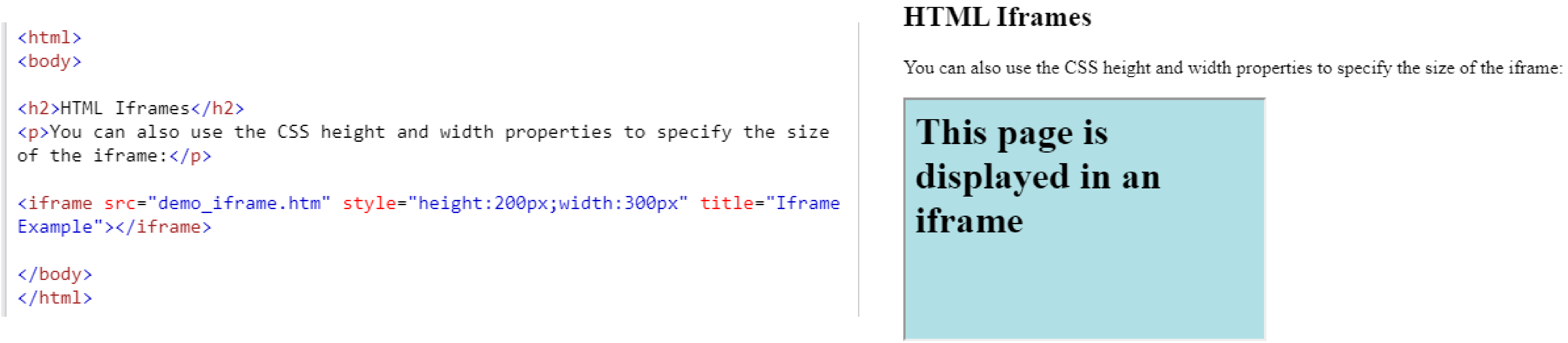
Use the `height` and `width` attributes to specify the size of the iframe.

The height and width are specified in pixels by default:

Or you can add the `style` attribute and use the CSS `height` and `width` properties:



```
<iframe src="demo_iframe.htm" style="height:200px;width:300px;" title="Iframe Example"></iframe>
```

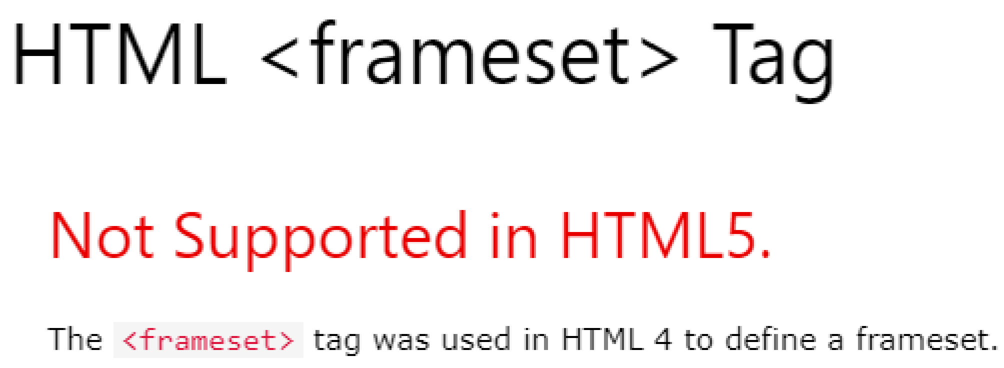


```
<html>
<body>

<h2>HTML Iframes</h2>
<p>You can also use the CSS height and width properties to specify the size
of the iframe:</p>

<iframe src="demo_iframe.htm" style="height:200px;width:300px" title="Iframe
Example"></iframe>

</body>
</html>
```

HTML Iframes

You can also use the CSS height and width properties to specify the size of the iframe:

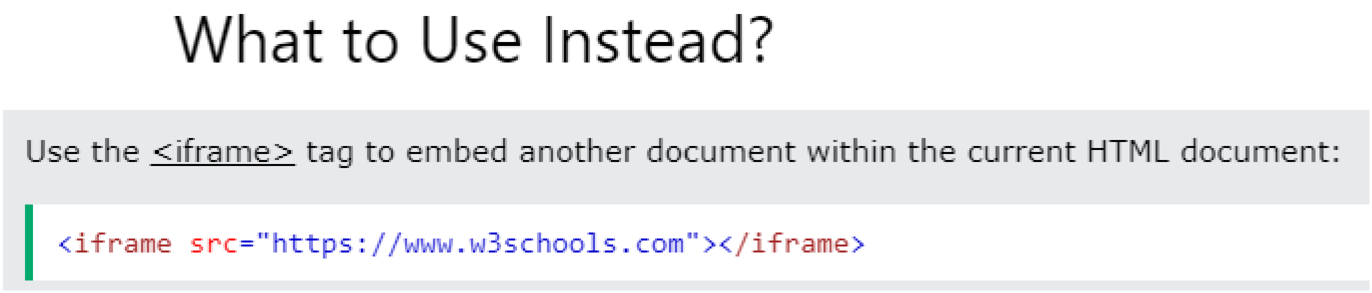
This page is displayed in an iframe



HTML <frameset> Tag

Not Supported in HTML5.

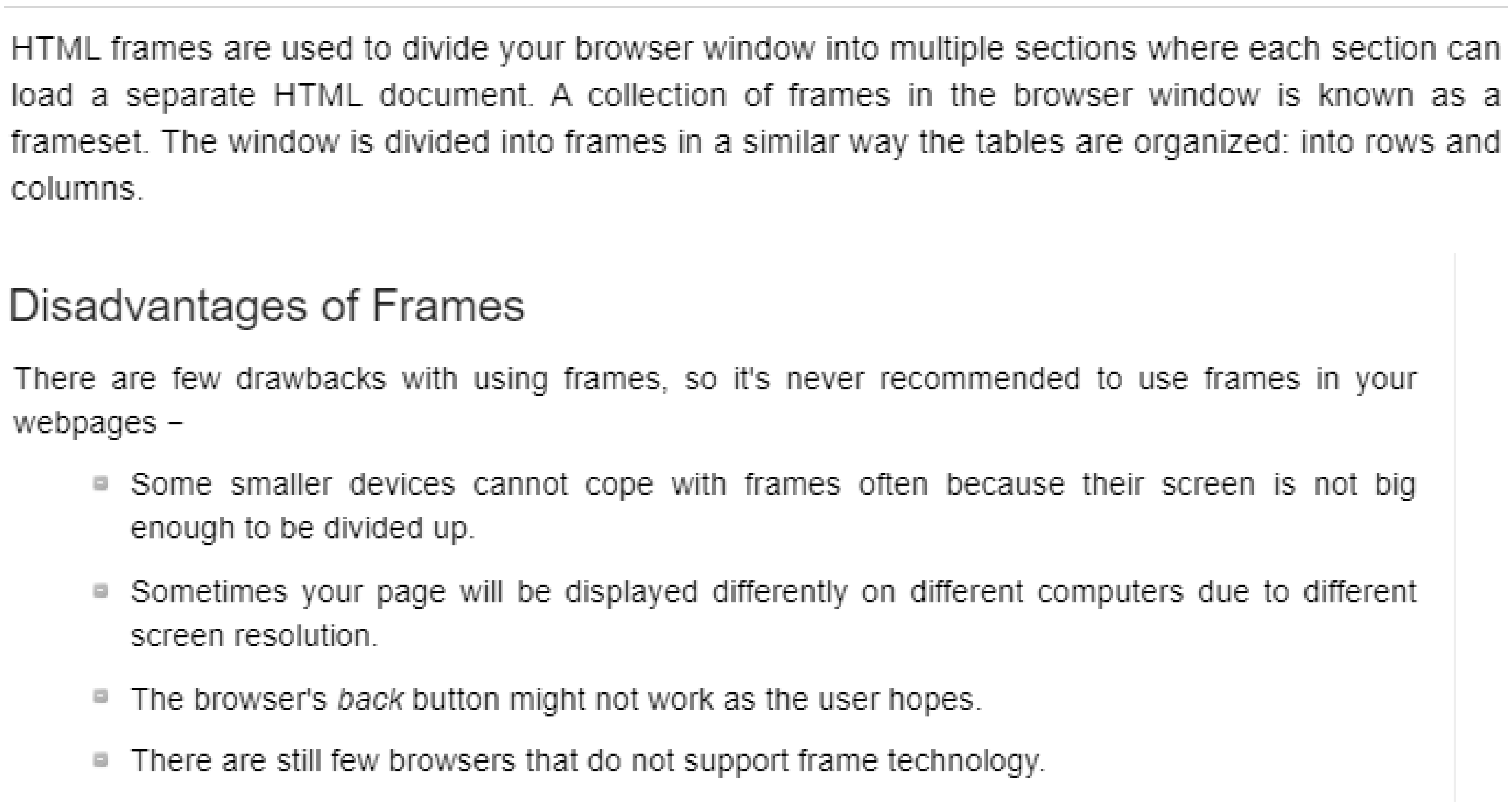
The `<frameset>` tag was used in HTML 4 to define a frameset.



What to Use Instead?

Use the <iframe> tag to embed another document within the current HTML document:

```
<iframe src="https://www.w3schools.com"></iframe>
```



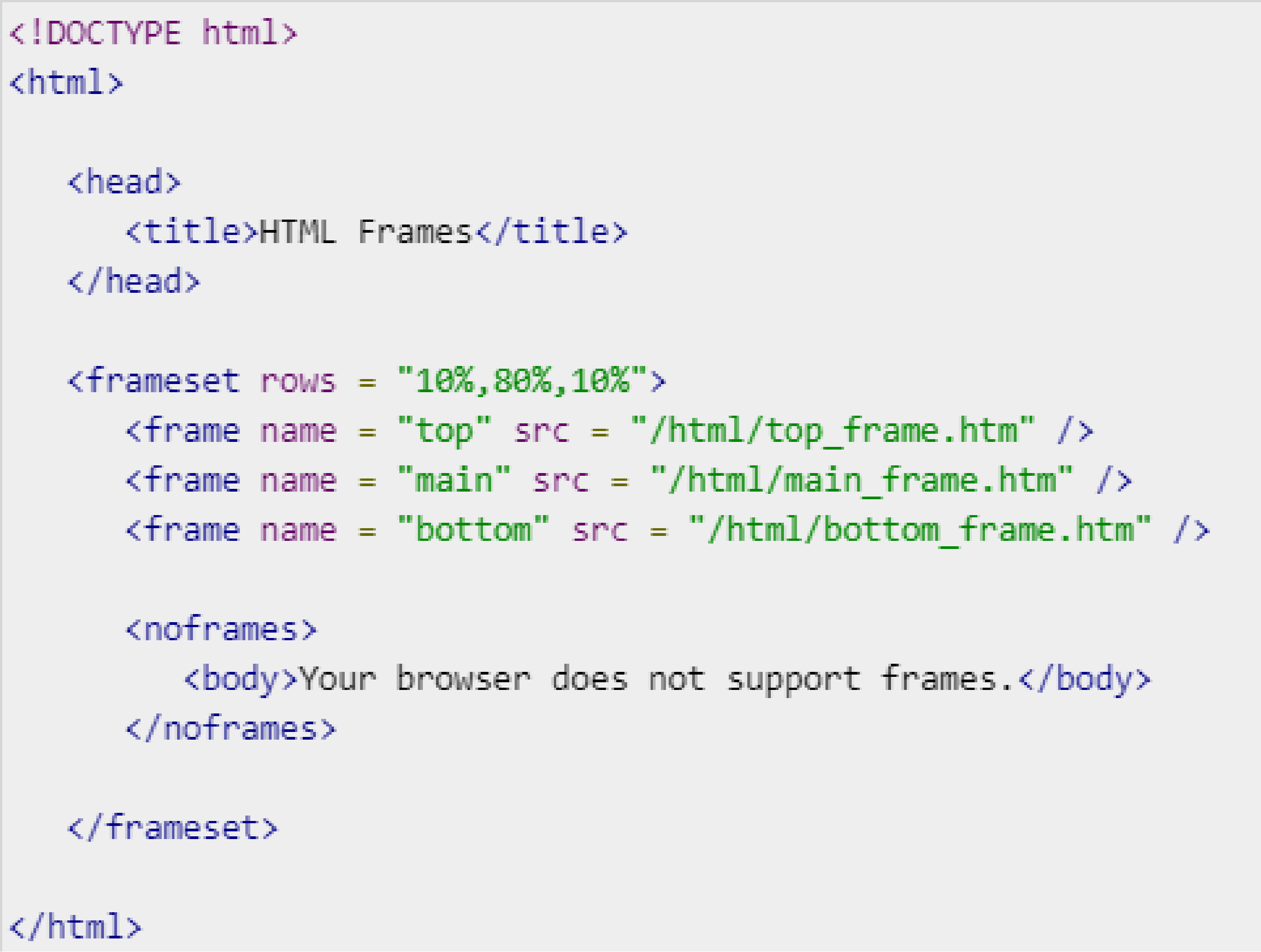
HTML frames are used to divide your browser window into multiple sections where each section can load a separate HTML document. A collection of frames in the browser window is known as a frameset. The window is divided into frames in a similar way the tables are organized: into rows and columns.

Disadvantages of Frames

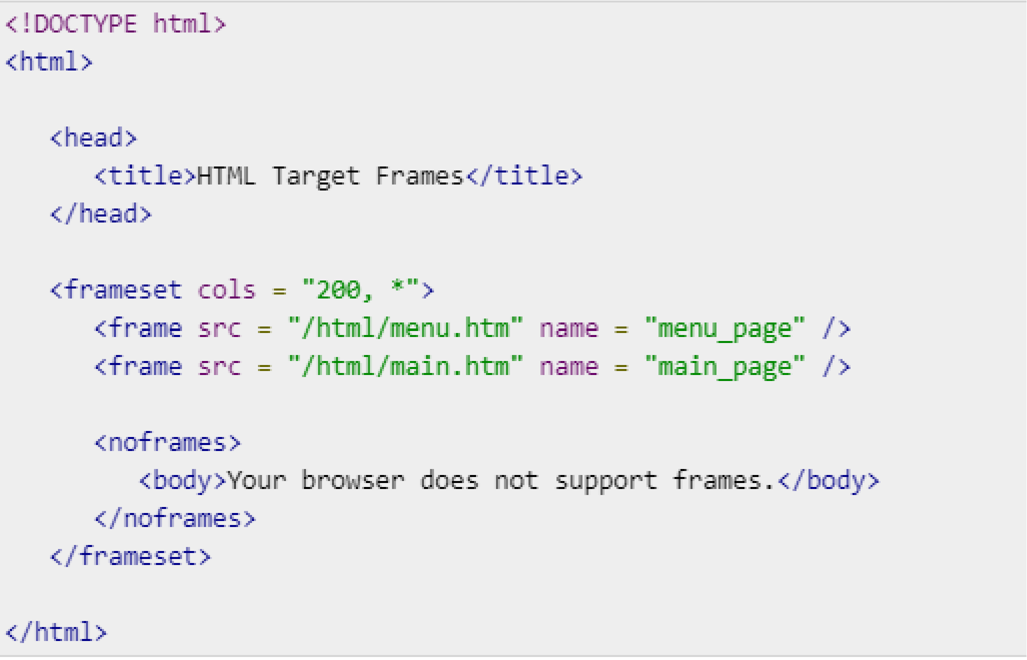
There are few drawbacks with using frames, so it's never recommended to use frames in your webpages −

- Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
- Sometimes your page will be displayed differently on different computers due to different screen resolution.
- The browser's *back* button might not work as the user hopes.
- There are still few browsers that do not support frame technology.

Following is the example to create three horizontal frames –

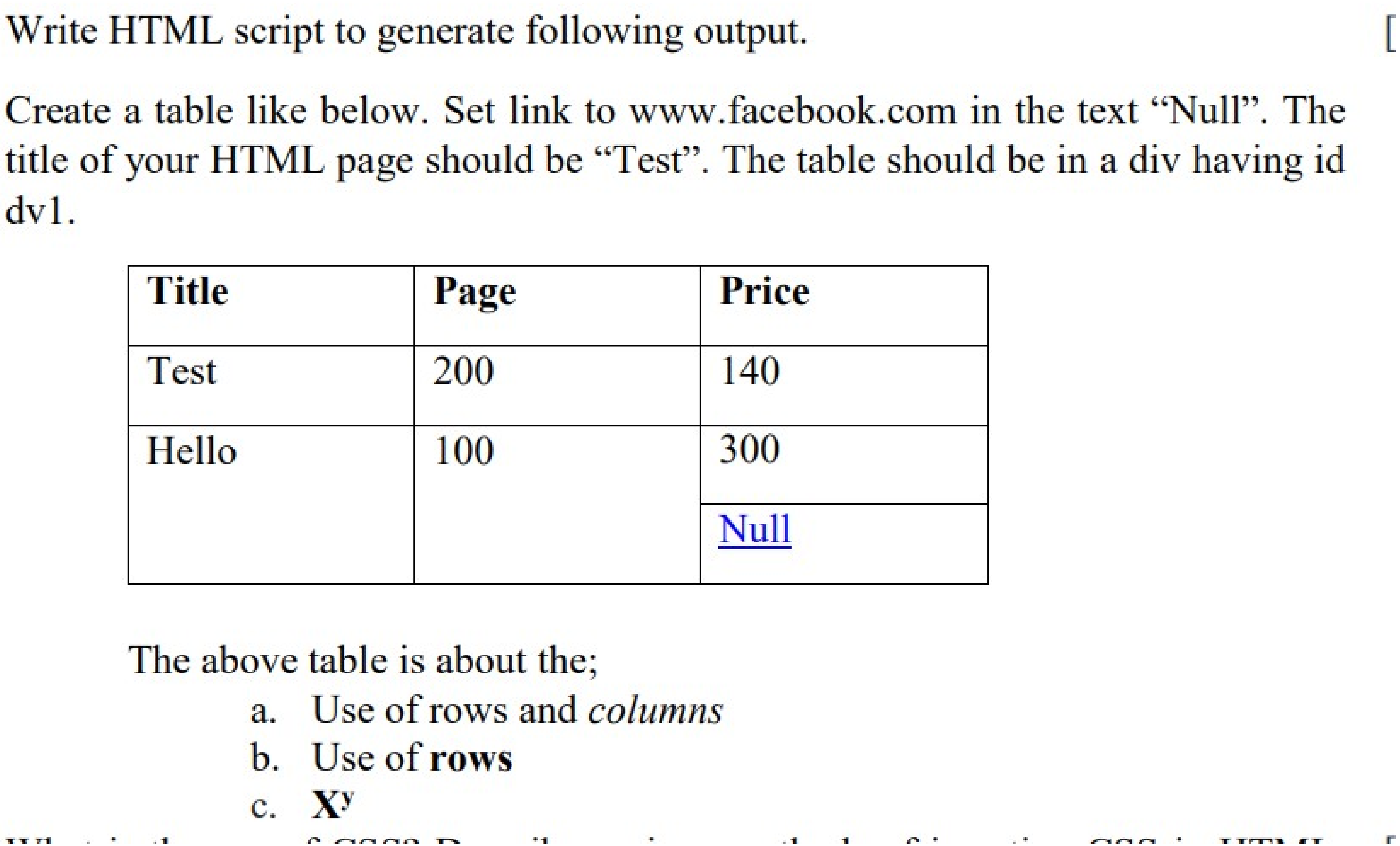


```
<!DOCTYPE html>
<html>

   <head>
      <title>HTML Frames</title>
   </head>

   <frameset rows = "10%,80%,10%">
      <frame name = "top" src = "/html/top_frame.htm" />
      <frame name = "main" src = "/html/main_frame.htm" />
      <frame name = "bottom" src = "/html/bottom_frame.htm" />

      <noframes>
         <body>Your browser does not support frames.</body>
      </noframes>

   </frameset>

</html>
```



```
<!DOCTYPE html>
<html>

   <head>
      <title>HTML Target Frames</title>
   </head>

   <frameset cols = "200, *">
      <frame src = "/html/menu.htm" name = "menu_page" />
      <frame src = "/html/main.htm" name = "main_page" />

      <noframes>
         <body>Your browser does not support frames.</body>
      </noframes>
   </frameset>

</html>
```

Lab 10: Make the following structure in html



Write HTML script to generate following output. [

Create a table like below. Set link to www.facebook.com in the text “Null”. The title of your HTML page should be “Test”. The table should be in a div having id dv1.

Title	**Page**	**Price**
Test	200	140
Hello	100	300
		Null

The above table is about the;

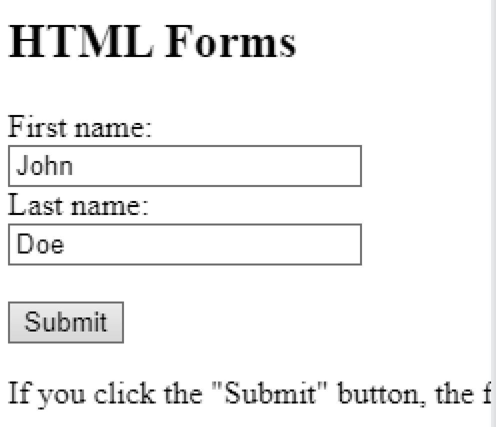
a. Use of rows and *columns*

b. Use of **rows**

c. $\mathbf{X^y}$

HTML Forms

An HTML form is used to collect user input. The user input is most often sent to a server for processing.



HTML Forms

First name:

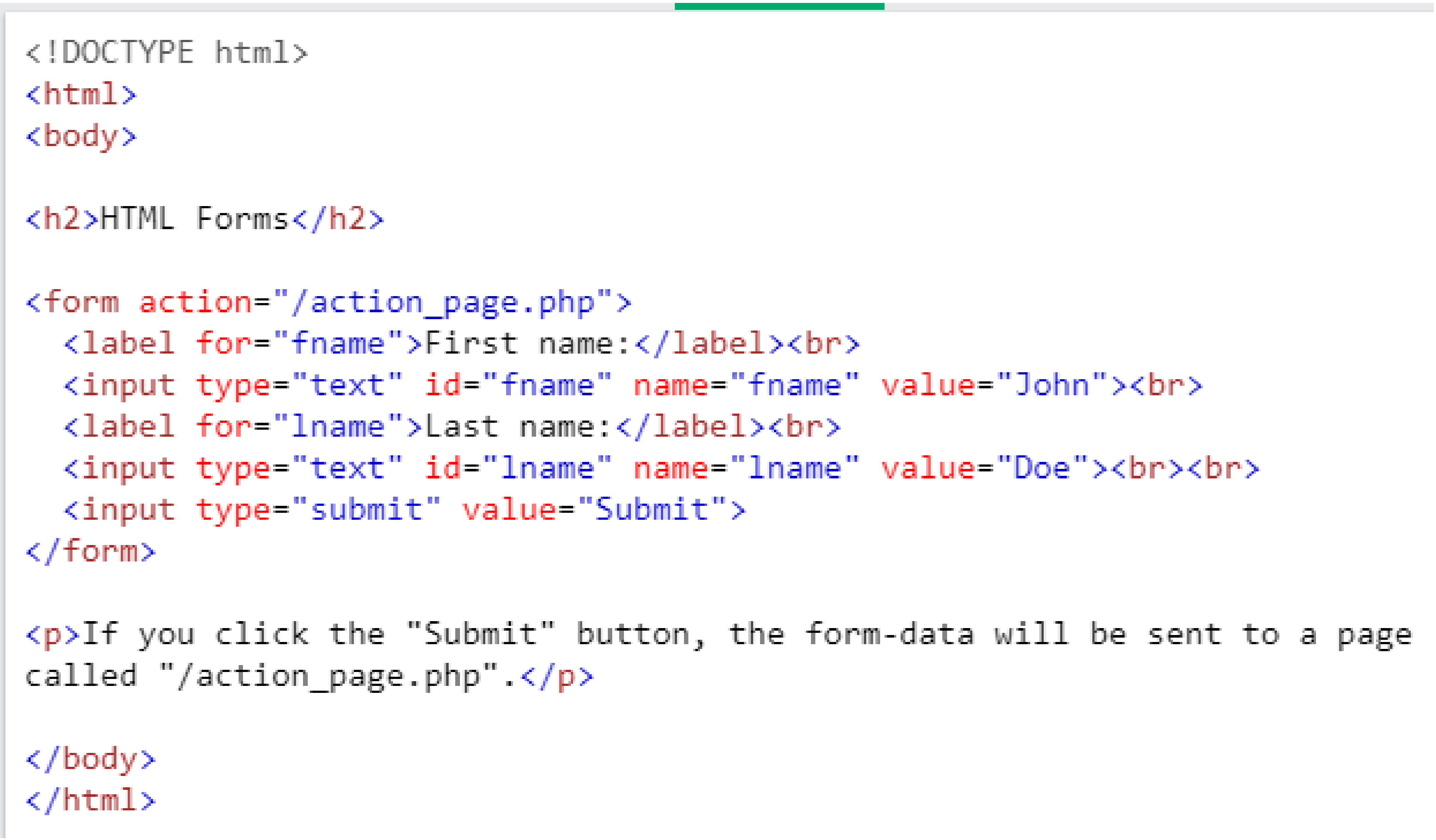
John

Last name:

Doe

Submit

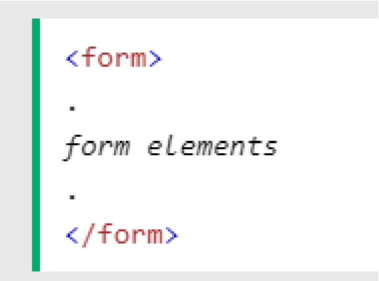
If you click the "Submit" button, the f



```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Forms</h2>

<form action="/action_page.php">
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe"><br><br>
  <input type="submit" value="Submit">
</form>

<p>If you click the "Submit" button, the form-data will be sent to a page
called "/action_page.php".</p>

</body>
</html>
```

The <form> Element

The HTML `<form>` element is used to create an HTML form for user input:



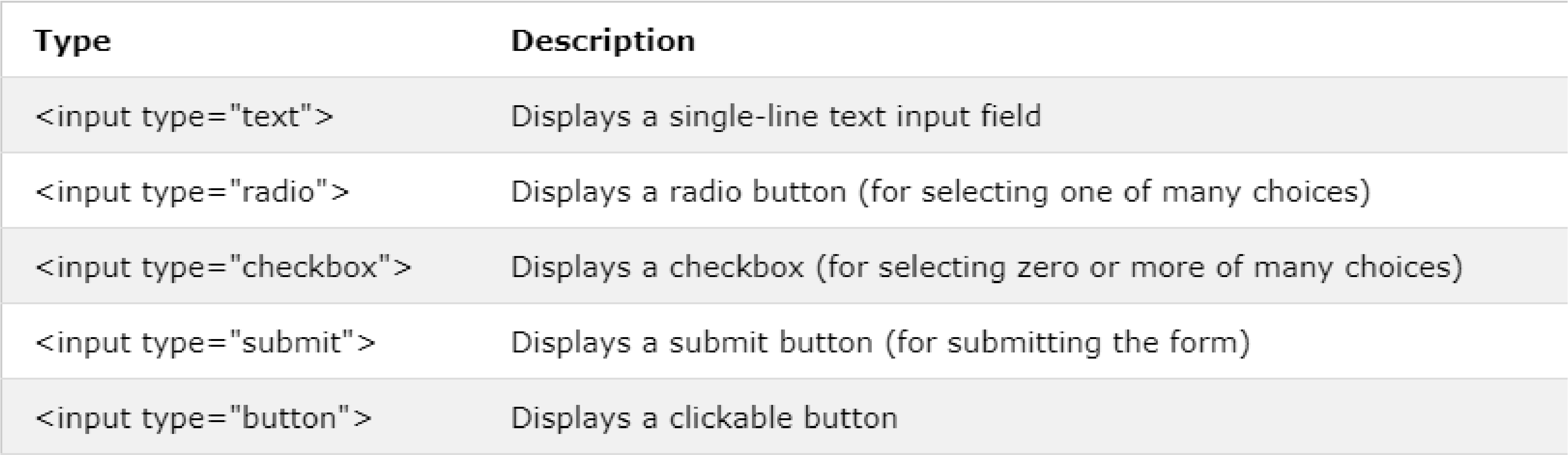
```
<form>
.
form elements
.
</form>
```

The `<form>` element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

The <input> Element

The HTML `<input>` element is the most used form element.

An `<input>` element can be displayed in many ways, depending on the `type` attribute.

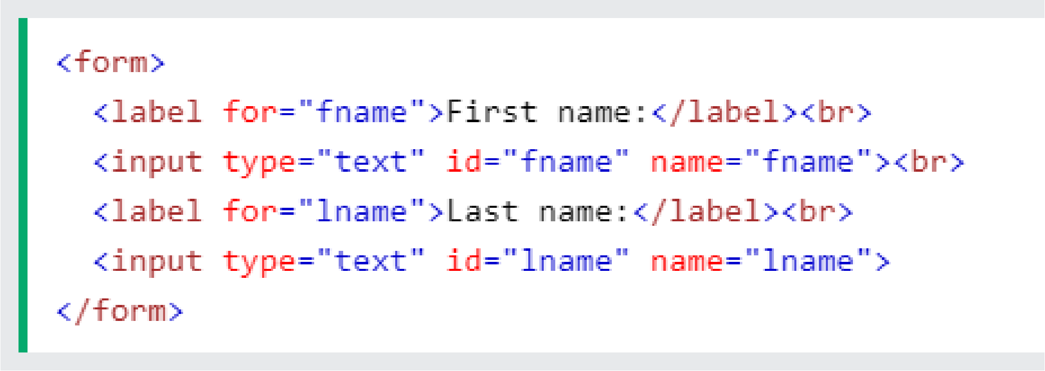


Type	Description
<input type="text">	Displays a single-line text input field
<input type="radio">	Displays a radio button (for selecting one of many choices)
<input type="checkbox">	Displays a checkbox (for selecting zero or more of many choices)
<input type="submit">	Displays a submit button (for submitting the form)
<input type="button">	Displays a clickable button

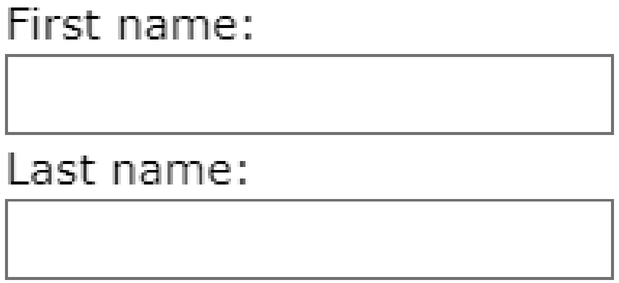
Text Fields

Note: The form itself is not visible. Also note that the default width of an input field is 20 characters.

The `<input type="text">` defines a single-line input field for text input.



```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname">
</form>
```



The <label> Element

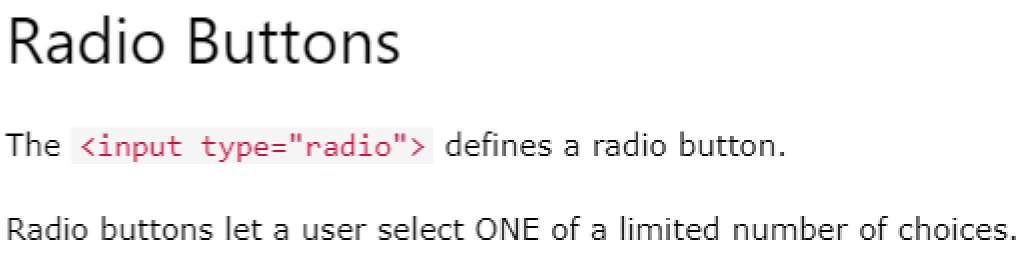
Notice the use of the `<label>` element in the example above.

The `<label>` tag defines a label for many form elements.

The `<label>` element is useful for screen-reader users, because the screen-reader will read out loud the label when the user focus on the input element.

The `<label>` element also help users who have difficulty clicking on very small regions (such as radio buttons or checkboxes) - because when the user clicks the text within the `<label>` element, it toggles the radio button/checkbox.

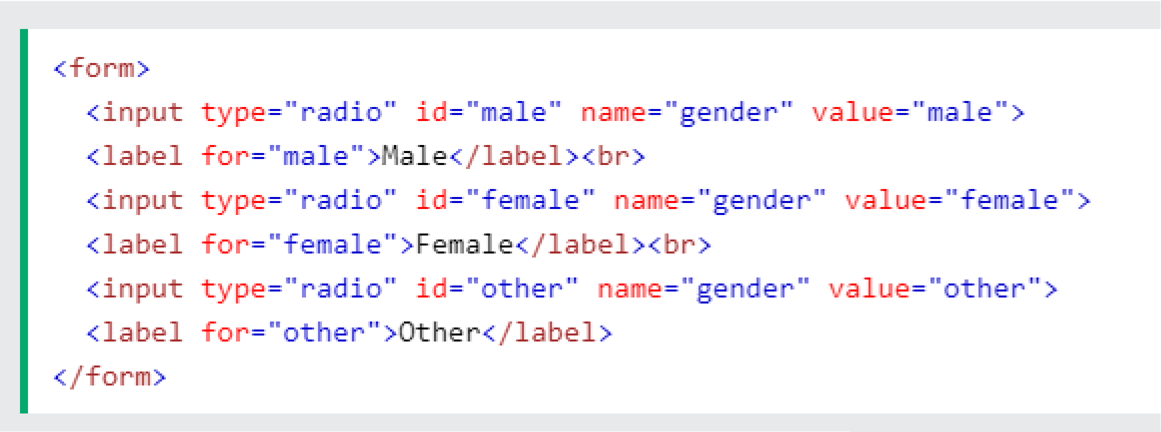
The `for` attribute of the `<label>` tag should be equal to the `id` attribute of the `<input>` element to bind them together.



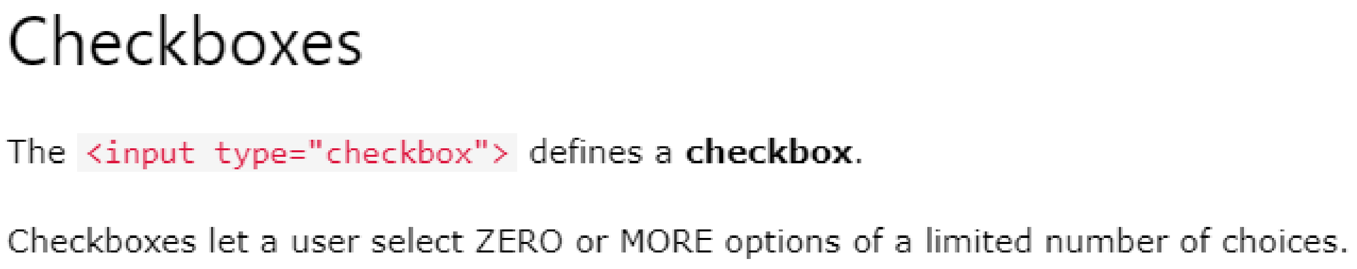
Radio Buttons

The `<input type="radio">` defines a radio button.

Radio buttons let a user select ONE of a limited number of choices.



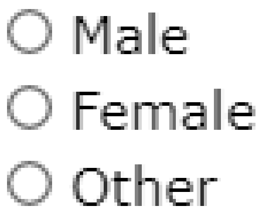
```
<form>
  <input type="radio" id="male" name="gender" value="male">
  <label for="male">Male</label><br>
  <input type="radio" id="female" name="gender" value="female">
  <label for="female">Female</label><br>
  <input type="radio" id="other" name="gender" value="other">
  <label for="other">Other</label>
</form>
```



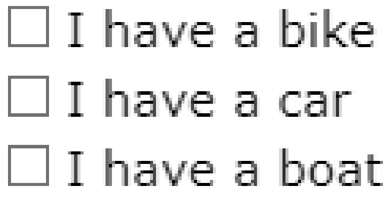
Checkboxes

The `<input type="checkbox">` defines a **checkbox**.

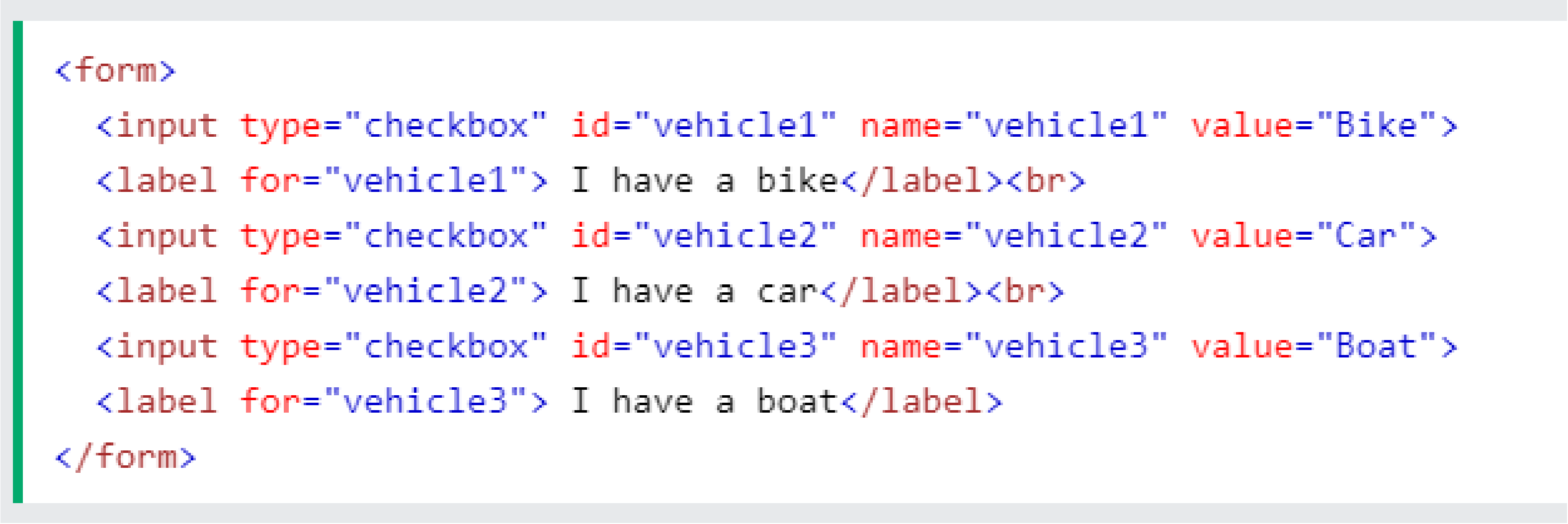
Checkboxes let a user select ZERO or MORE options of a limited number of choices.



○ Male
○ Female
○ Other



□ I have a bike
□ I have a car
□ I have a boat



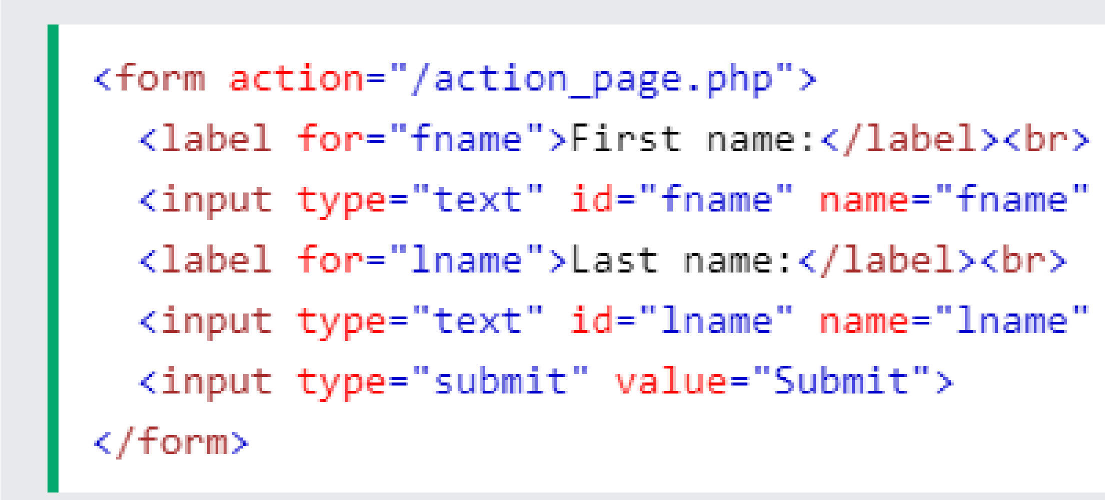
```
<form>
  <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
  <label for="vehicle1"> I have a bike</label><br>
  <input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
  <label for="vehicle2"> I have a car</label><br>
  <input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">
  <label for="vehicle3"> I have a boat</label>
</form>
```

The Submit Button

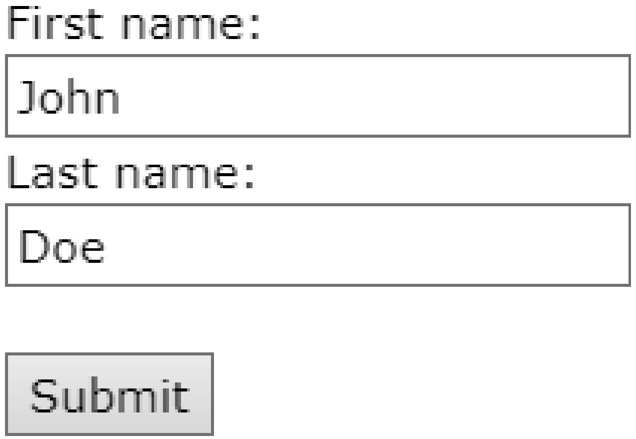
The `<input type="submit">` defines a button for submitting the form data to a form-handler.

The form-handler is typically a file on the server with a script for processing input data.

The form-handler is specified in the form's `action` attribute.



```
<form action="/action_page.php">
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe"><br><br>
  <input type="submit" value="Submit">
</form>
```



First name:

John

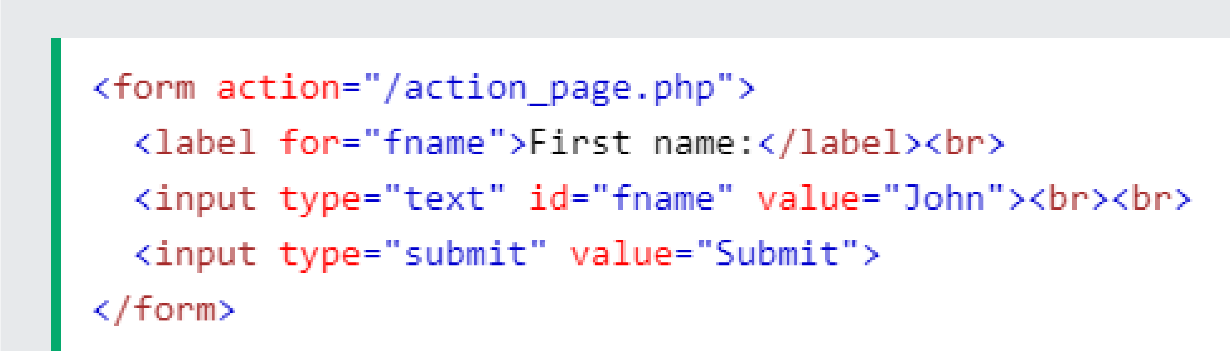
Last name:

Doe

The Name Attribute for <input>

Notice that each input field must have a `name` attribute to be submitted.

If the `name` attribute is omitted, the value of the input field will not be sent at all.



```
<form action="/action_page.php">
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" value="John"><br><br>
  <input type="submit" value="Submit">
</form>
```

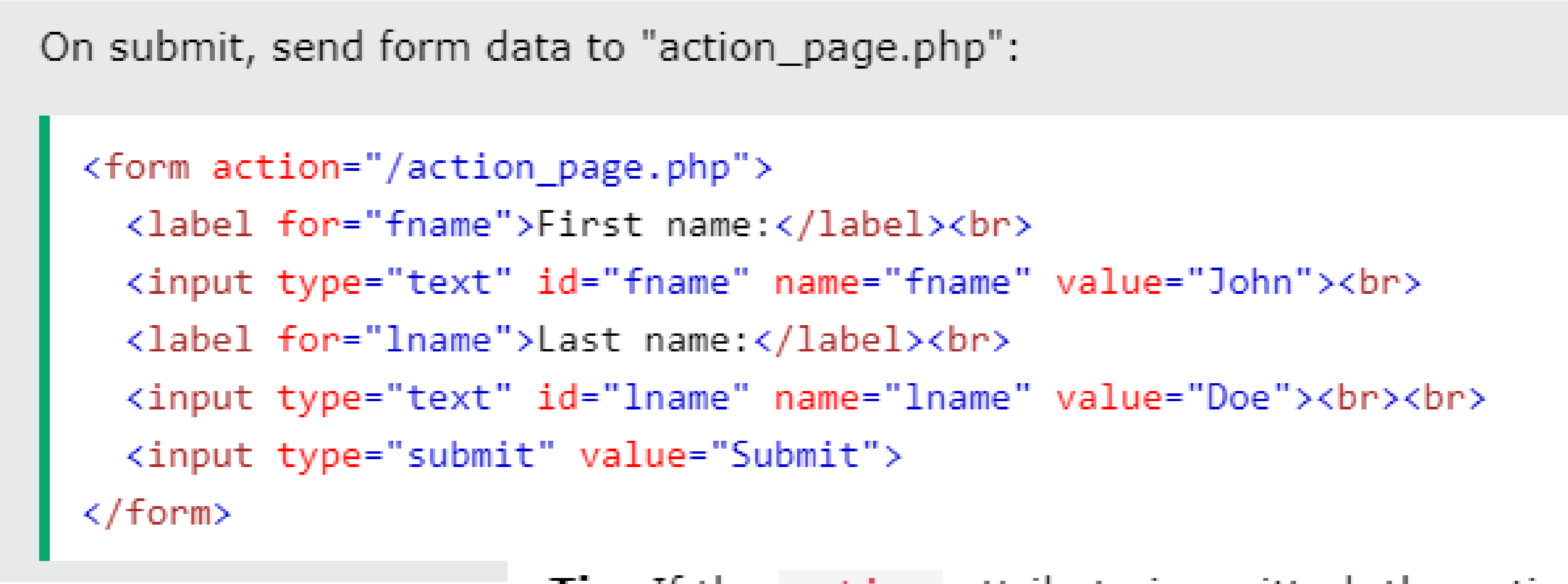
HTML Form Attributes

The Action Attribute

The `action` attribute defines the action to be performed when the form is submitted.

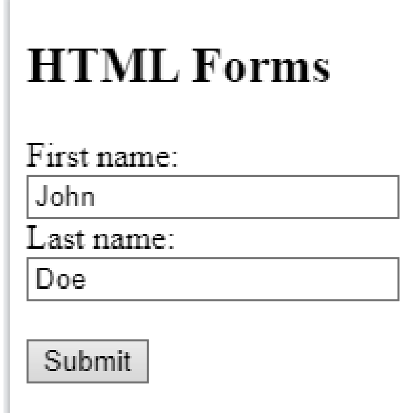
Usually, the form data is sent to a file on the server when the user clicks on the submit button.

In the example below, the form data is sent to a file called "action_page.php". This file contains a server-side script that handles the form data:



On submit, send form data to "action_page.php":

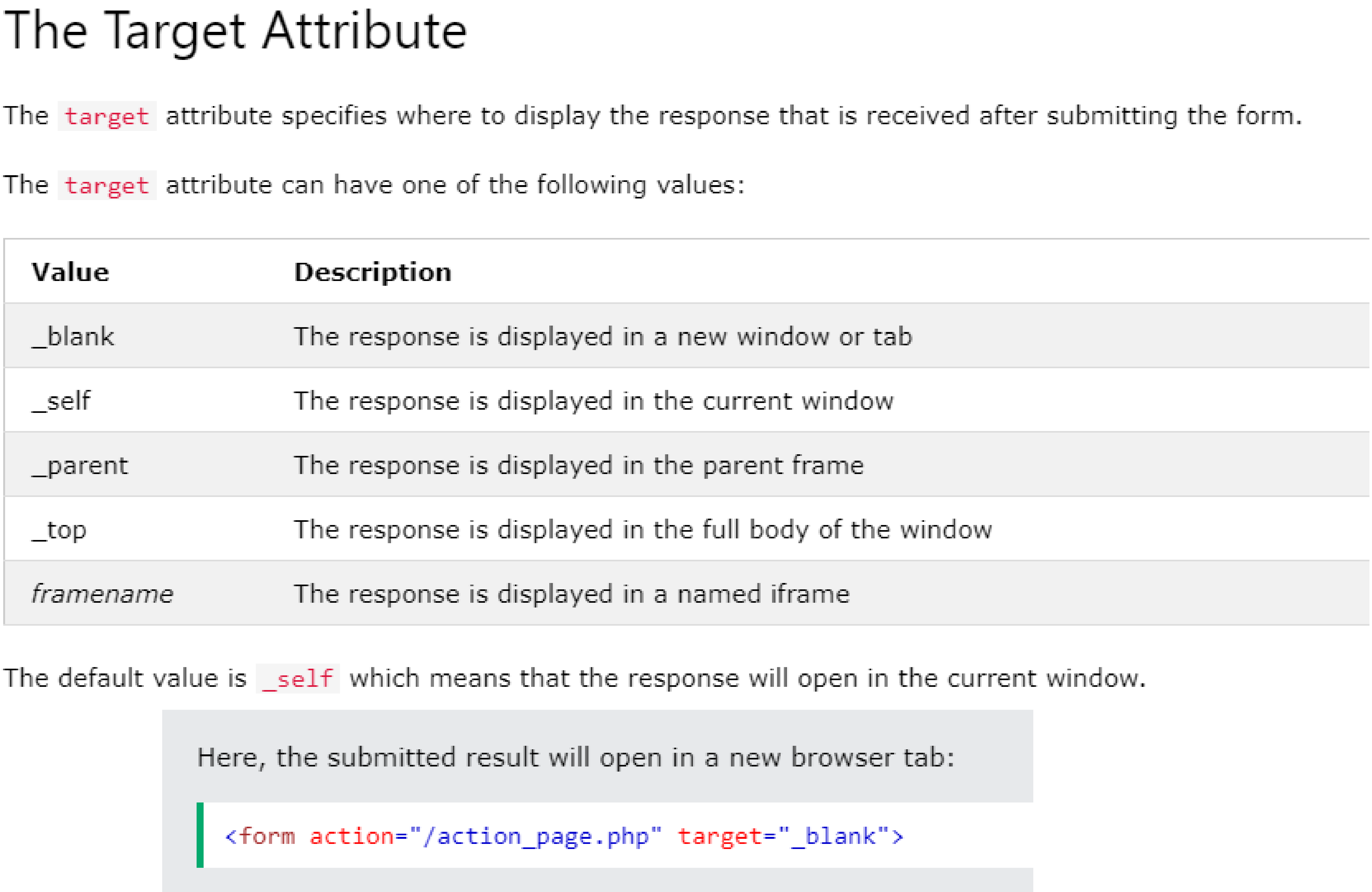
```
<form action="/action_page.php">
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe"><br><br>
  <input type="submit" value="Submit">
</form>
```



HTML Forms

First name:
John
Last name:
Doe

Tip: If the `action` attribute is omitted, the action is set to the current page.



The Target Attribute

The `target` attribute specifies where to display the response that is received after submitting the form.

The `target` attribute can have one of the following values:

Value	Description
_blank	The response is displayed in a new window or tab
_self	The response is displayed in the current window
_parent	The response is displayed in the parent frame
_top	The response is displayed in the full body of the window
framename	The response is displayed in a named iframe

The default value is `_self` which means that the response will open in the current window.

Here, the submitted result will open in a new browser tab:

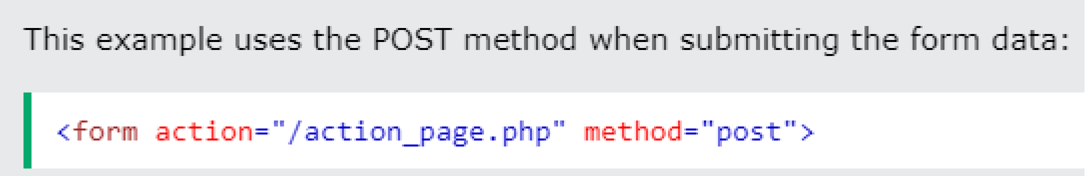
```
<form action="/action_page.php" target="_blank">
```

The Method Attribute

The `method` attribute specifies the HTTP method to be used when submitting the form data.

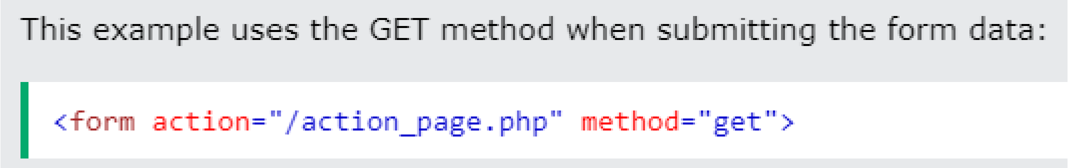
The form-data can be sent as URL variables (with `method="get"`) or as HTTP post transaction (with `method="post"`).

The default HTTP method when submitting form data is GET.



This example uses the POST method when submitting the form data:

```
<form action="/action_page.php" method="post">
```



This example uses the GET method when submitting the form data:

```
<form action="/action_page.php" method="get">
```

Tip: Always use POST if the form data contains sensitive or personal information!

Notes on GET:

- Appends the form data to the URL, in name/value pairs
- NEVER use GET to send sensitive data! (the submitted form data is visible in the URL!)
- The length of a URL is limited (2048 characters)
- Useful for form submissions where a user wants to bookmark the result
- GET is good for non-secure data, like query strings in Google

Notes on POST:

- Appends the form data inside the body of the HTTP request (the submitted form data is not shown in the URL)
- POST has no size limitations, and can be used to send large amounts of data.
- Form submissions with POST cannot be bookmarked

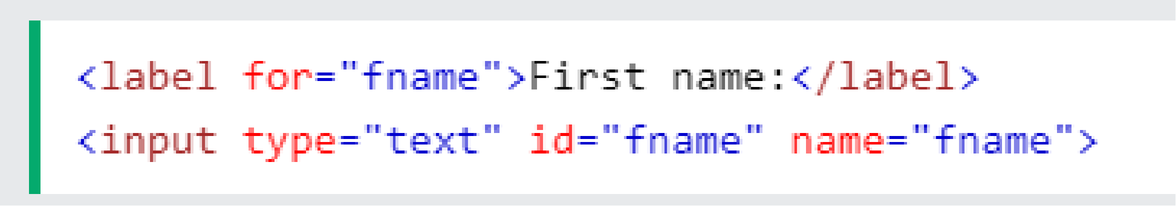
HTML Form Elements

- `<input>`
- `<label>`
- `<select>`
- `<textarea>`
- `<button>`
- `<fieldset>`
- `<legend>`
- `<datalist>`
- `<output>`
- `<option>`
- `<optgroup>`

The <input> Element

One of the most used form element is the `<input>` element.

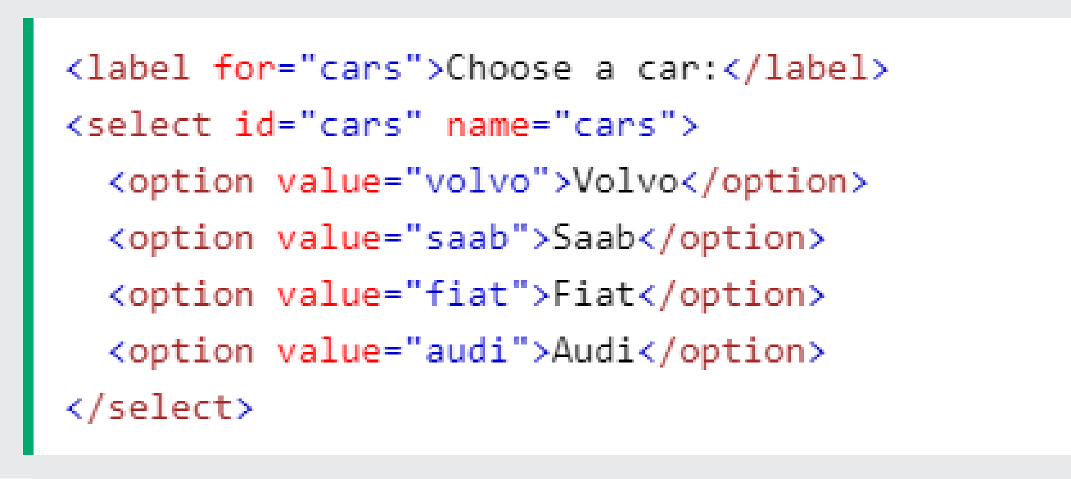
The `<input>` element can be displayed in several ways, depending on the `type` attribute.



```
<label for="fname">First name:</label>
<input type="text" id="fname" name="fname">
```

The <select> Element

The `<select>` element defines a drop-down list:

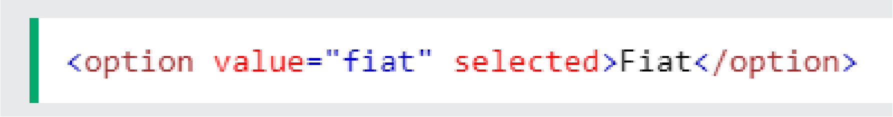


```
<label for="cars">Choose a car:</label>
<select id="cars" name="cars">
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="fiat">Fiat</option>
  <option value="audi">Audi</option>
</select>
```

The `<option>` elements defines an option that can be selected.

By default, the first item in the drop-down list is selected.

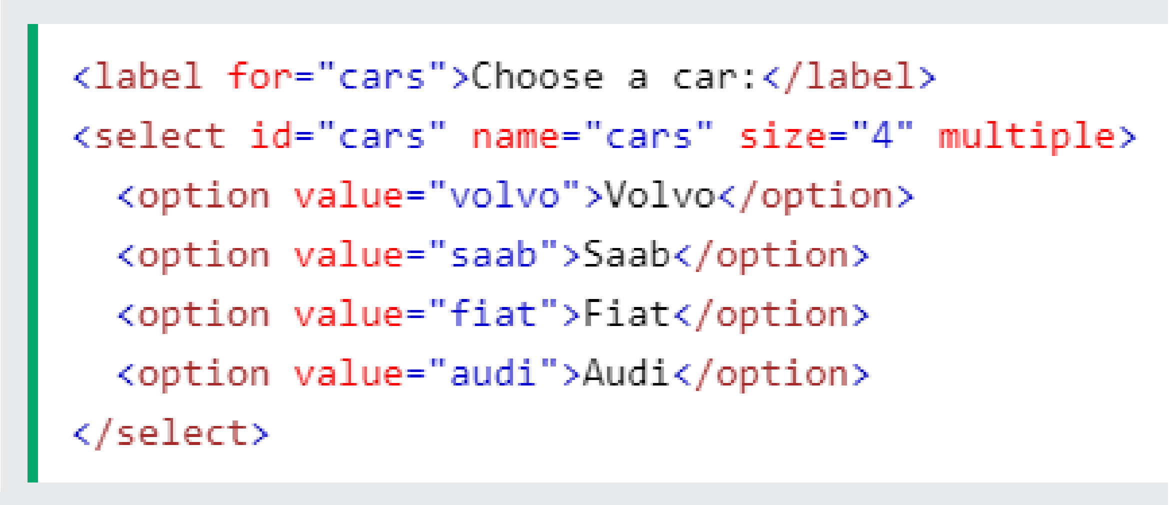
To define a pre-selected option, add the `selected` attribute to the option:



```
<option value="fiat" selected>Fiat</option>
```

Allow Multiple Selections:

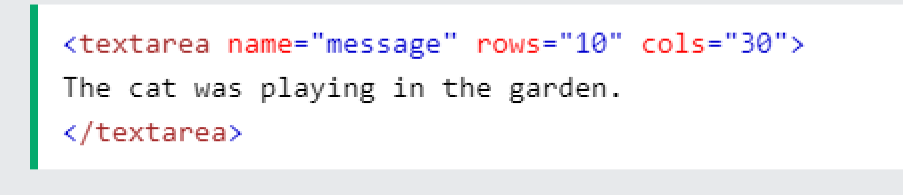
Use the `multiple` attribute to allow the user to select more than one value:



```
<label for="cars">Choose a car:</label>
<select id="cars" name="cars" size="4" multiple>
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="fiat">Fiat</option>
  <option value="audi">Audi</option>
</select>
```

The <textarea> Element

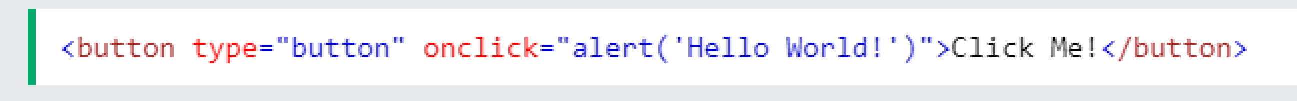
The `<textarea>` element defines a multi-line input field (a text area):



```
<textarea name="message" rows="10" cols="30">
The cat was playing in the garden.
</textarea>
```

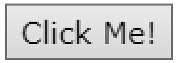
The <button> Element

The `<button>` element defines a clickable button:



```
<button type="button" onclick="alert('Hello World!')">Click Me!</button>
```

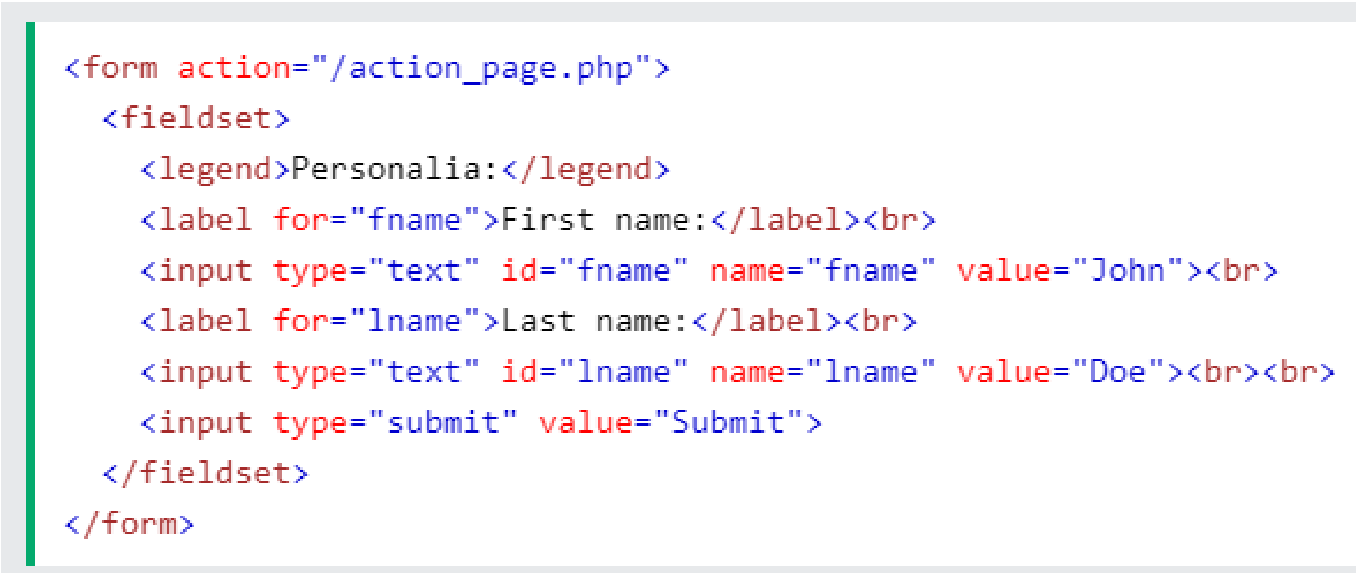
This is how the HTML code above will be displayed in a browser:



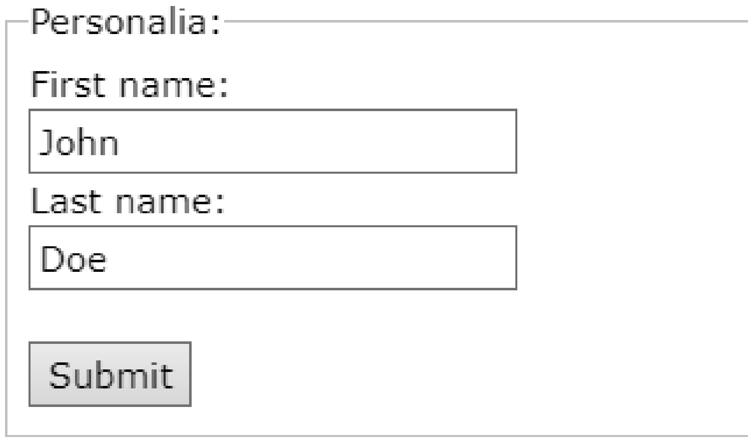
The <fieldset> and <legend> Elements

The <fieldset> element is used to group related data in a form.

The <legend> element defines a caption for the <fieldset> element.



```
<form action="/action_page.php">
  <fieldset>
    <legend>Personalia:</legend>
    <label for="fname">First name:</label><br>
    <input type="text" id="fname" name="fname" value="John"><br>
    <label for="lname">Last name:</label><br>
    <input type="text" id="lname" name="lname" value="Doe"><br><br>
    <input type="submit" value="Submit">
  </fieldset>
</form>
```



Personalia:

First name:

John

Last name:

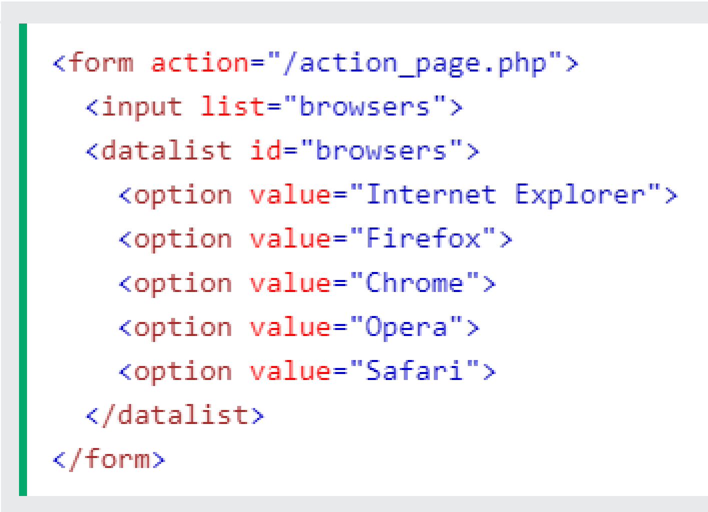
Doe

The <datalist> Element

The <datalist> element specifies a list of pre-defined options for an <input> element.

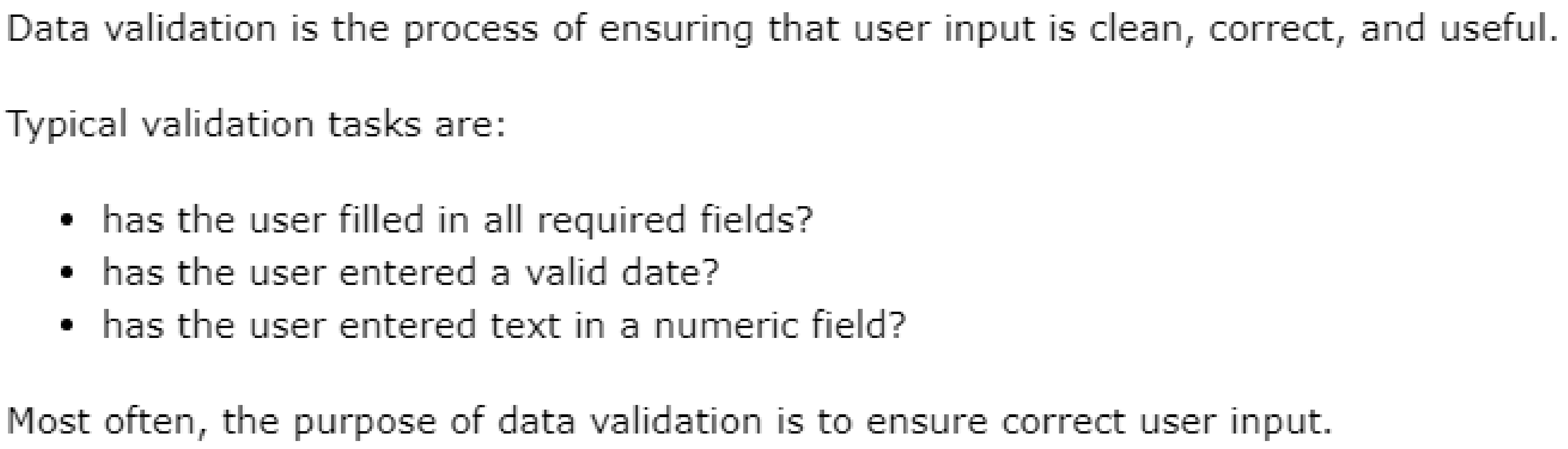
Users will see a drop-down list of the pre-defined options as they input data.

The list attribute of the <input> element, must refer to the id attribute of the <datalist> element.



```
<form action="/action_page.php">
  <input list="browsers">
  <datalist id="browsers">
    <option value="Internet Explorer">
    <option value="Firefox">
    <option value="Chrome">
    <option value="Opera">
    <option value="Safari">
  </datalist>
</form>
```

Data Validation

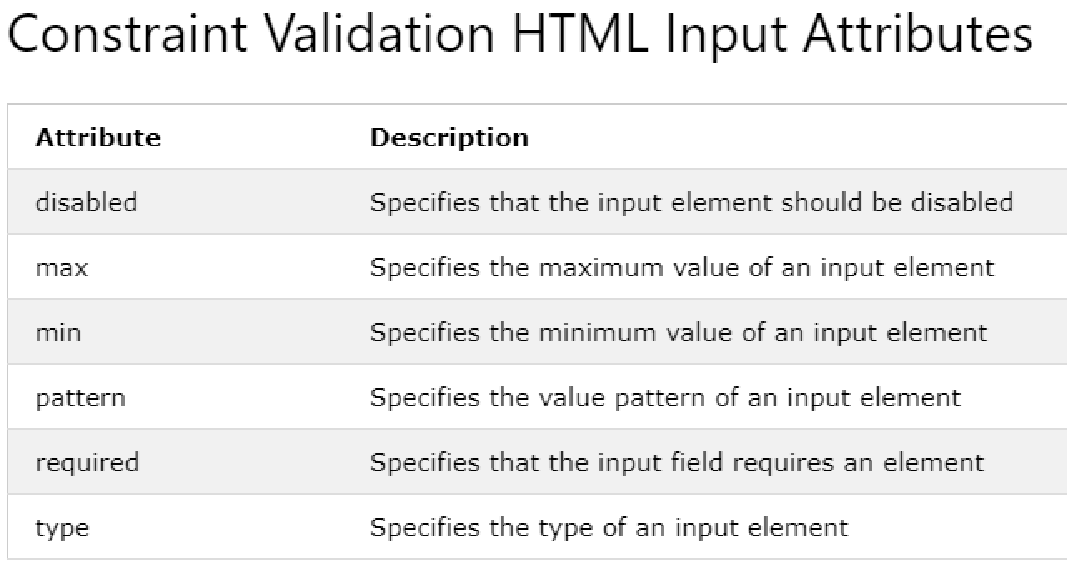


Data validation is the process of ensuring that user input is clean, correct, and useful.

Typical validation tasks are:

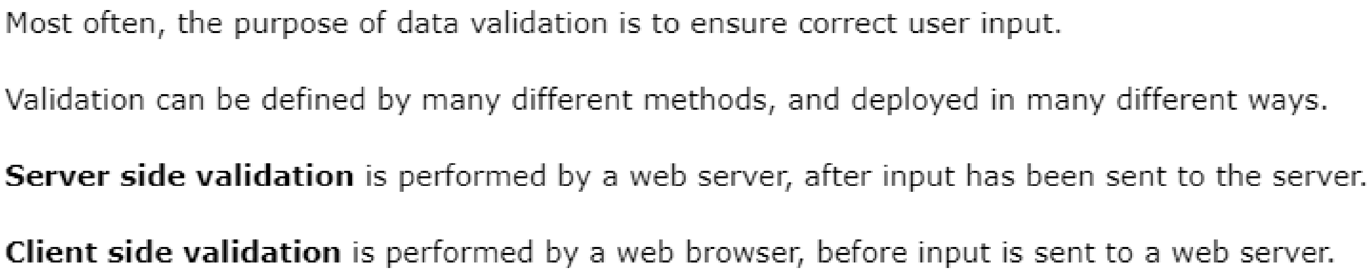
- has the user filled in all required fields?
- has the user entered a valid date?
- has the user entered text in a numeric field?

Most often, the purpose of data validation is to ensure correct user input.



Constraint Validation HTML Input Attributes

Attribute	Description
disabled	Specifies that the input element should be disabled
max	Specifies the maximum value of an input element
min	Specifies the minimum value of an input element
pattern	Specifies the value pattern of an input element
required	Specifies that the input field requires an element
type	Specifies the type of an input element



Most often, the purpose of data validation is to ensure correct user input.

Validation can be defined by many different methods, and deployed in many different ways.

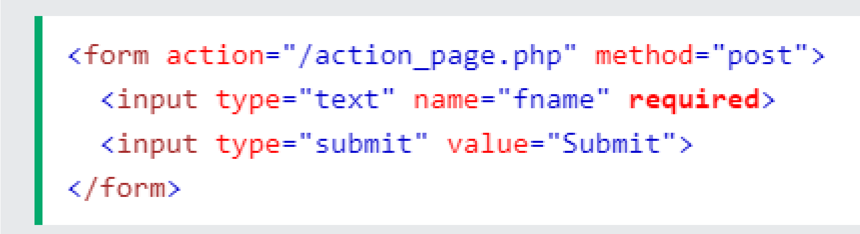
Server side validation is performed by a web server, after input has been sent to the server.

Client side validation is performed by a web browser, before input is sent to a web server.

Automatic HTML Form Validation

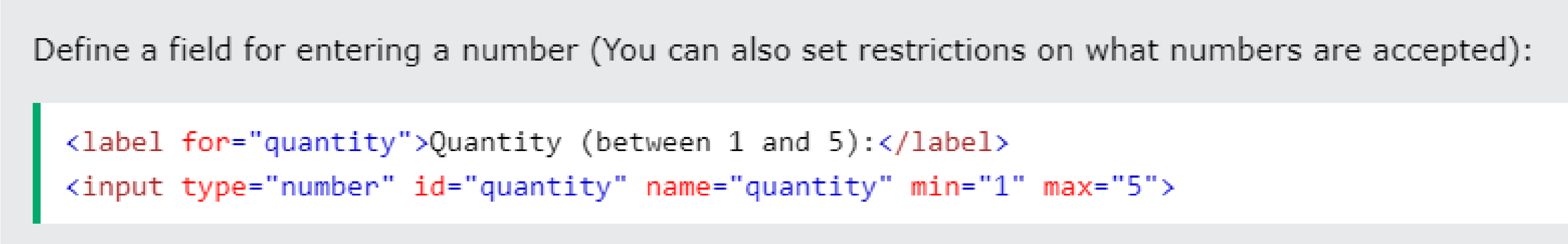
HTML form validation can be performed automatically by the browser:

If a form field (fname) is empty, the `required` attribute prevents this form from being submitted:



```
<form action="/action_page.php" method="post">
  <input type="text" name="fname" required>
  <input type="submit" value="Submit">
</form>
```

Automatic HTML form validation does not work in Internet Explorer 9 or earlier.



Define a field for entering a number (You can also set restrictions on what numbers are accepted):

```
<label for="quantity">Quantity (between 1 and 5):</label>
<input type="number" id="quantity" name="quantity" min="1" max="5">
```

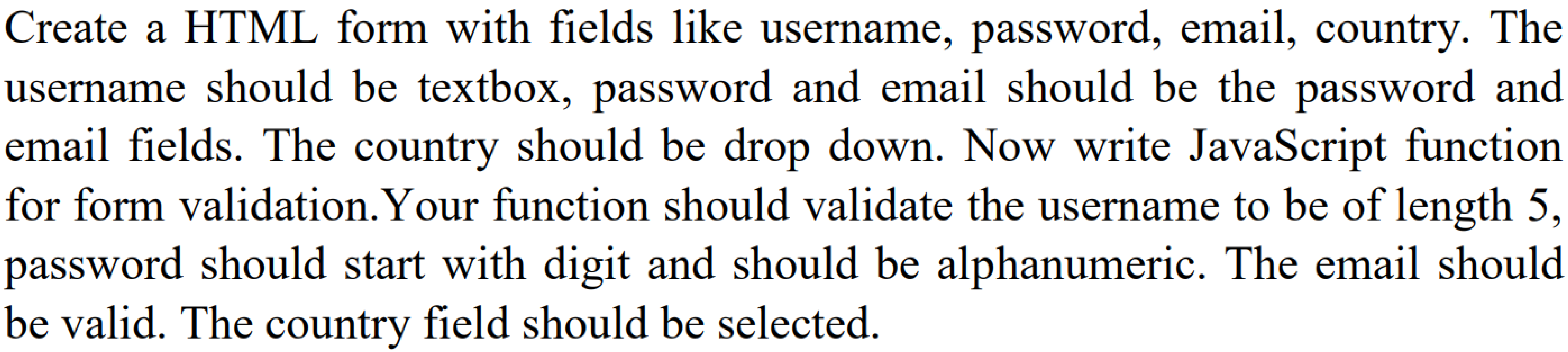
HTML <input type="number">

The `<input type="number">` defines a field for entering a number.

Use the following attributes to specify restrictions:

- max - specifies the maximum value allowed
- min - specifies the minimum value allowed
- step - specifies the legal number intervals
- value - Specifies the default value

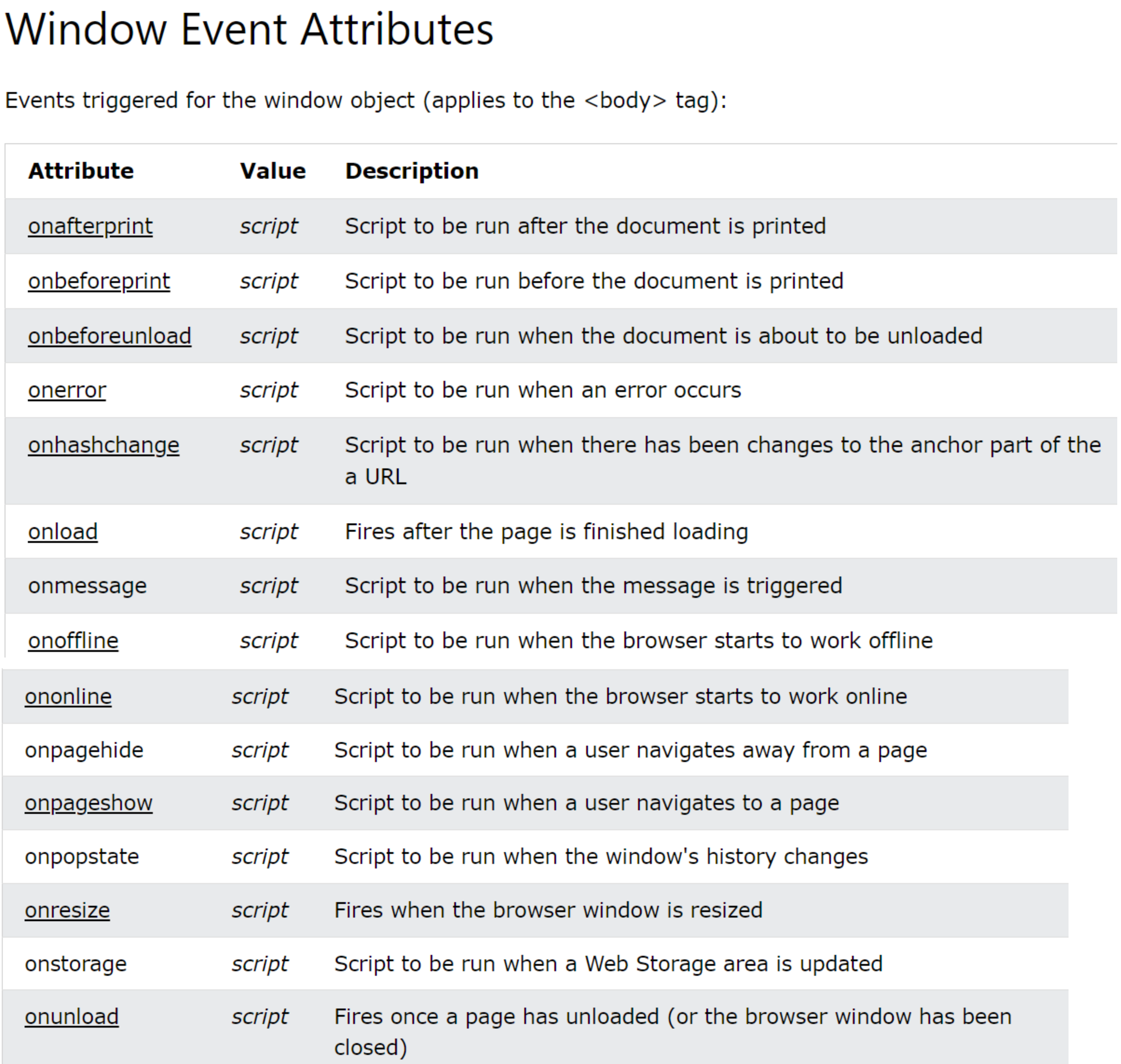
Lab 11:



Create a HTML form with fields like username, password, email, country. The username should be textbox, password and email should be the password and email fields. The country should be drop down. Now write JavaScript function for form validation.Your function should validate the username to be of length 5, password should start with digit and should be alphanumeric. The email should be valid. The country field should be selected.

HTML Event Attributes

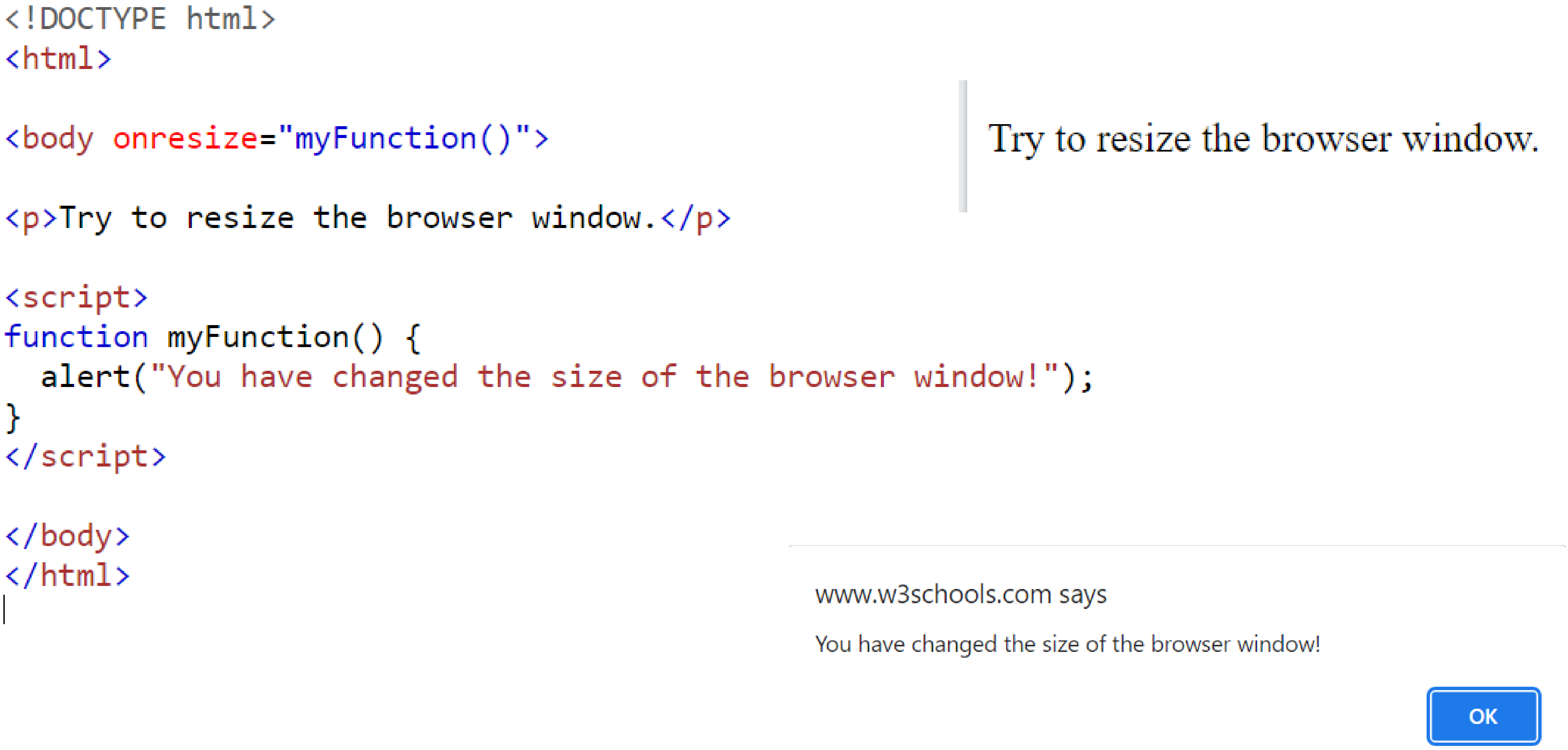
- HTML has the ability to let events trigger actions in a browser, like starting a JavaScript when a user clicks on an element.
- Window Event Attributes
  - Onload, Onerror, Onresize etc
- Form Events
  - Onsubmit, Onfocus, Onselect etc
- Keyboard Events
  - Onkeypress, onkeyup etc
- Mouse Events
  - Onclick, ondblclick, onmouseover etc
- Drag Events
  - Ondrag, onscroll etc
- Clipboard Events
  - Oncopy, oncut, onpaste



Window Event Attributes

Events triggered for the window object (applies to the <body> tag):

Attribute	Value	Description
onafterprint	*script*	Script to be run after the document is printed
onbeforeprint	*script*	Script to be run before the document is printed
onbeforeunload	*script*	Script to be run when the document is about to be unloaded
onerror	*script*	Script to be run when an error occurs
onhashchange	*script*	Script to be run when there has been changes to the anchor part of the a URL
onload	*script*	Fires after the page is finished loading
onmessage	*script*	Script to be run when the message is triggered
onoffline	*script*	Script to be run when the browser starts to work offline
ononline	*script*	Script to be run when the browser starts to work online
onpagehide	*script*	Script to be run when a user navigates away from a page
onpageshow	*script*	Script to be run when a user navigates to a page
onpopstate	*script*	Script to be run when the window's history changes
onresize	*script*	Fires when the browser window is resized
onstorage	*script*	Script to be run when a Web Storage area is updated
onunload	*script*	Fires once a page has unloaded (or the browser window has been closed)



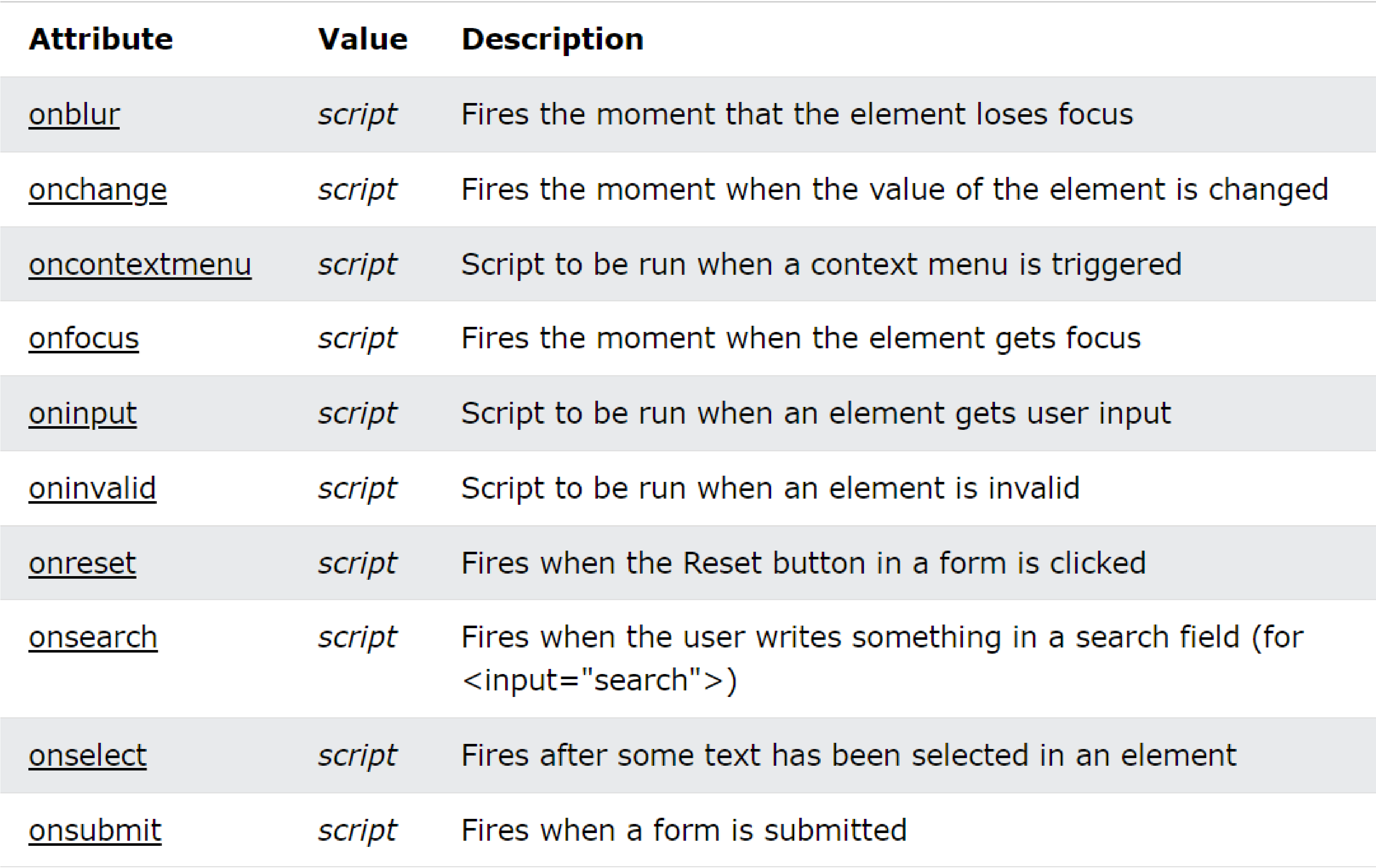
```
<!DOCTYPE html>
<html>

<body onresize="myFunction()">

<p>Try to resize the browser window.</p>

<script>
function myFunction() {
  alert("You have changed the size of the browser window!");
}
</script>

</body>
</html>
```

Try to resize the browser window.

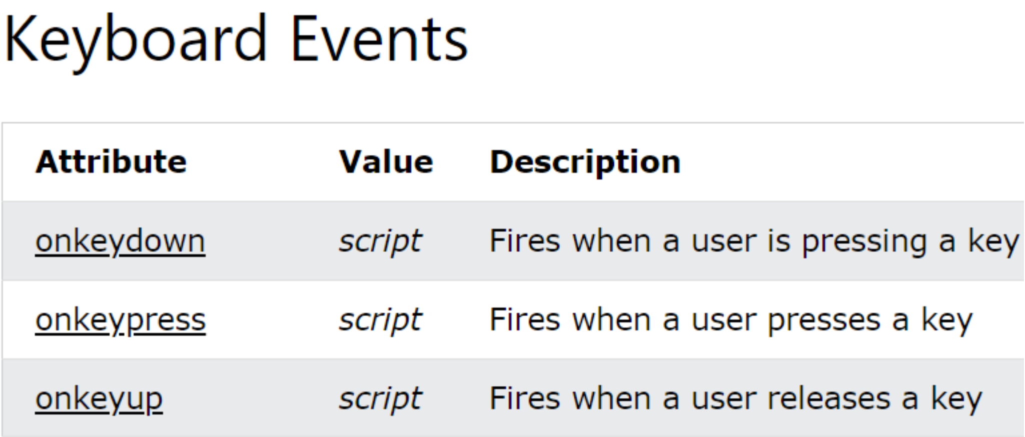
www.w3schools.com says

You have changed the size of the browser window!

Form Events

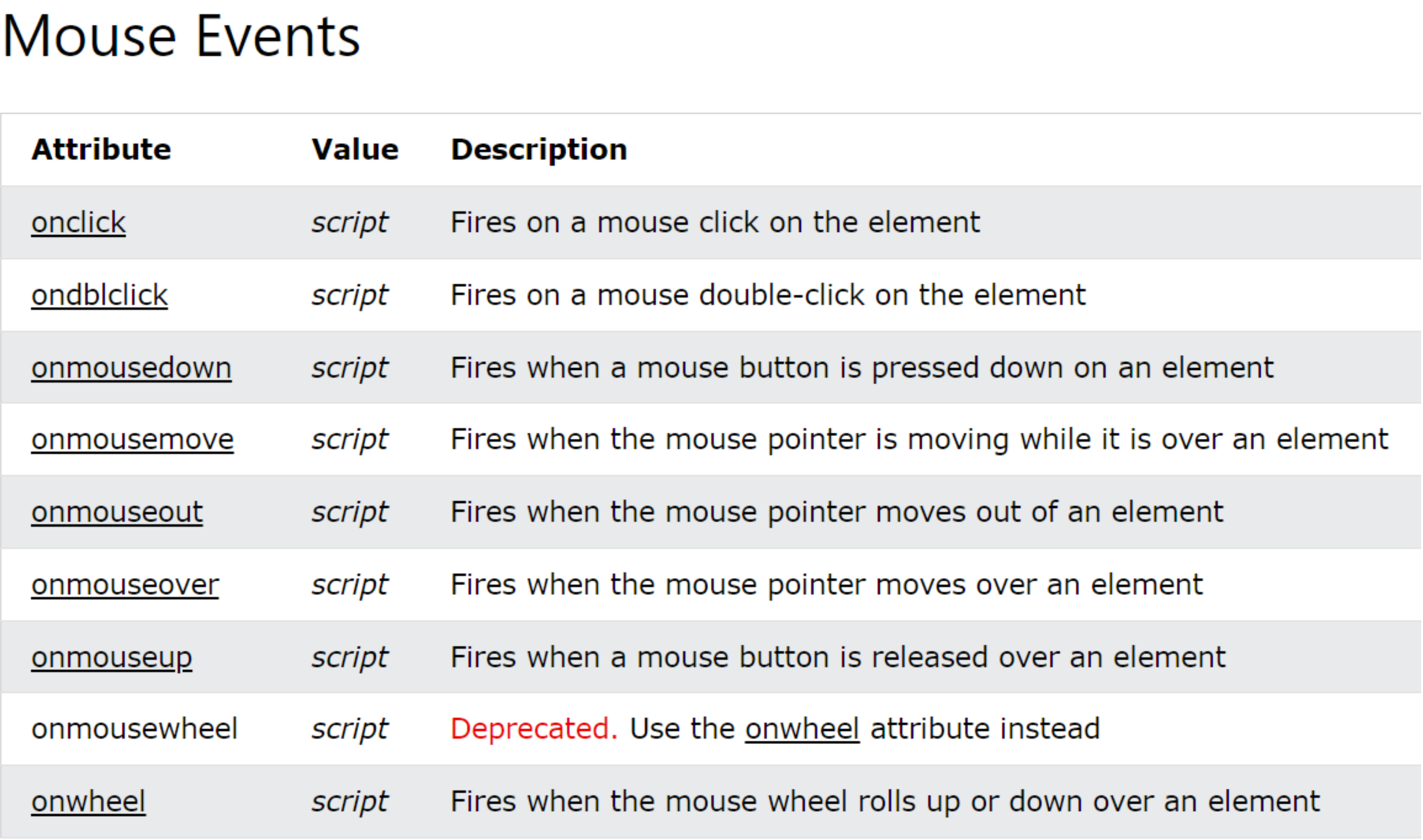


Attribute	Value	Description
onblur	*script*	Fires the moment that the element loses focus
onchange	*script*	Fires the moment when the value of the element is changed
oncontextmenu	*script*	Script to be run when a context menu is triggered
onfocus	*script*	Fires the moment when the element gets focus
oninput	*script*	Script to be run when an element gets user input
oninvalid	*script*	Script to be run when an element is invalid
onreset	*script*	Fires when the Reset button in a form is clicked
onsearch	*script*	Fires when the user writes something in a search field (for <input="search">)
onselect	*script*	Fires after some text has been selected in an element
onsubmit	*script*	Fires when a form is submitted



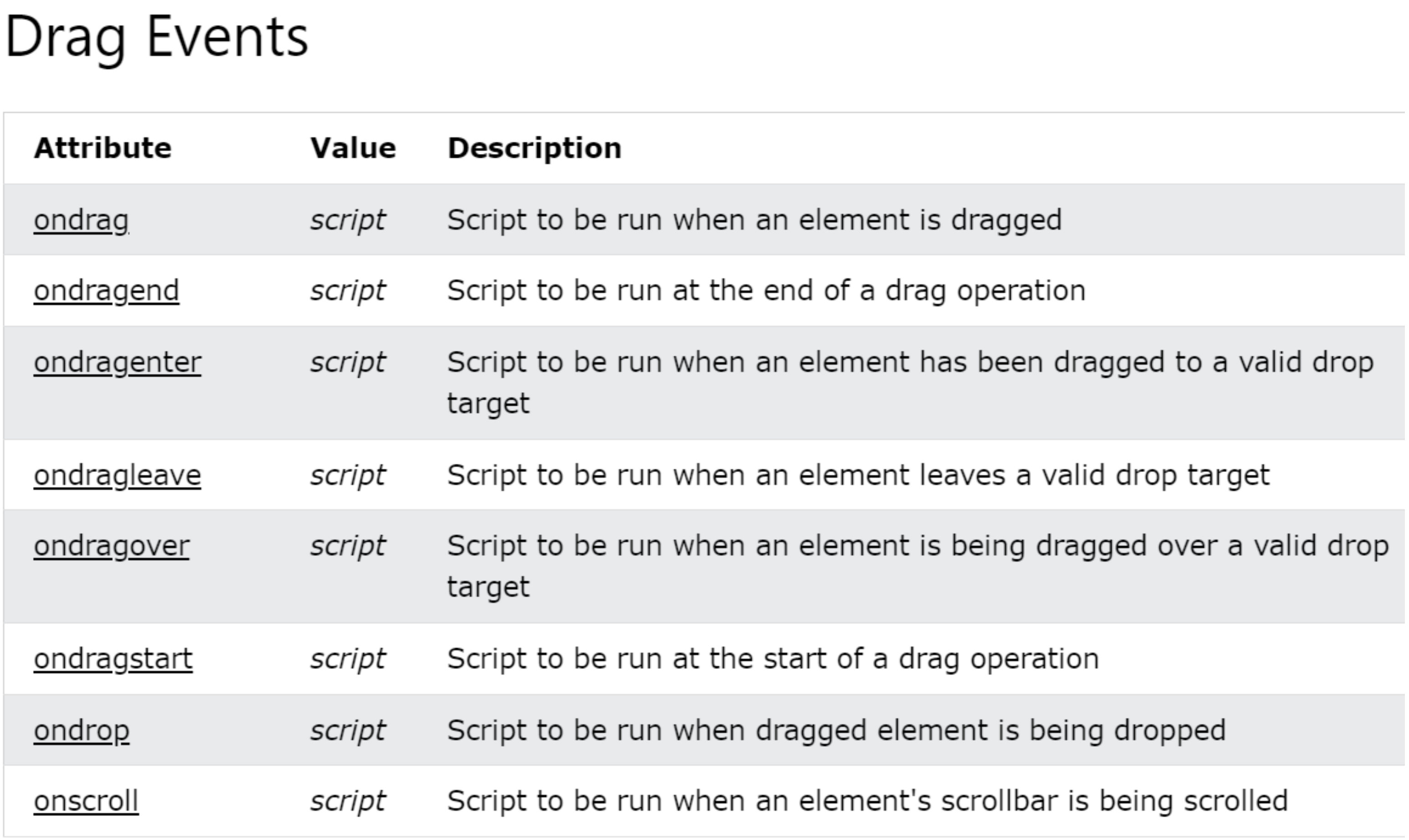
Keyboard Events

Attribute	Value	Description
onkeydown	*script*	Fires when a user is pressing a key
onkeypress	*script*	Fires when a user presses a key
onkeyup	*script*	Fires when a user releases a key



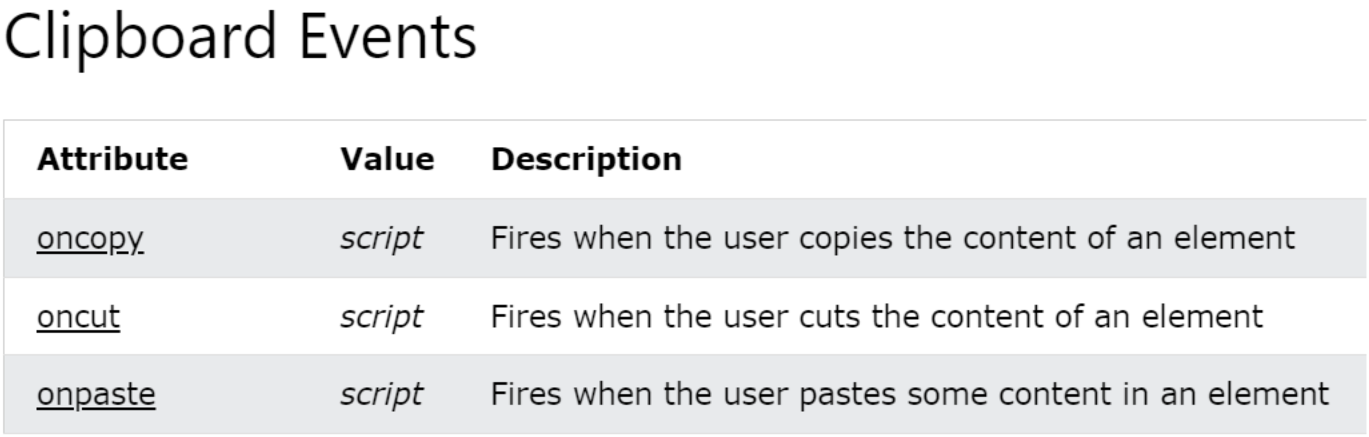
Mouse Events

Attribute	Value	Description
onclick	*script*	Fires on a mouse click on the element
ondblclick	*script*	Fires on a mouse double-click on the element
onmousedown	*script*	Fires when a mouse button is pressed down on an element
onmousemove	*script*	Fires when the mouse pointer is moving while it is over an element
onmouseout	*script*	Fires when the mouse pointer moves out of an element
onmouseover	*script*	Fires when the mouse pointer moves over an element
onmouseup	*script*	Fires when a mouse button is released over an element
onmousewheel	*script*	Deprecated. Use the onwheel attribute instead
onwheel	*script*	Fires when the mouse wheel rolls up or down over an element



Drag Events

Attribute	Value	Description
ondrag	*script*	Script to be run when an element is dragged
ondragend	*script*	Script to be run at the end of a drag operation
ondragenter	*script*	Script to be run when an element has been dragged to a valid drop target
ondragleave	*script*	Script to be run when an element leaves a valid drop target
ondragover	*script*	Script to be run when an element is being dragged over a valid drop target
ondragstart	*script*	Script to be run at the start of a drag operation
ondrop	*script*	Script to be run when dragged element is being dropped
onscroll	*script*	Script to be run when an element's scrollbar is being scrolled



Clipboard Events

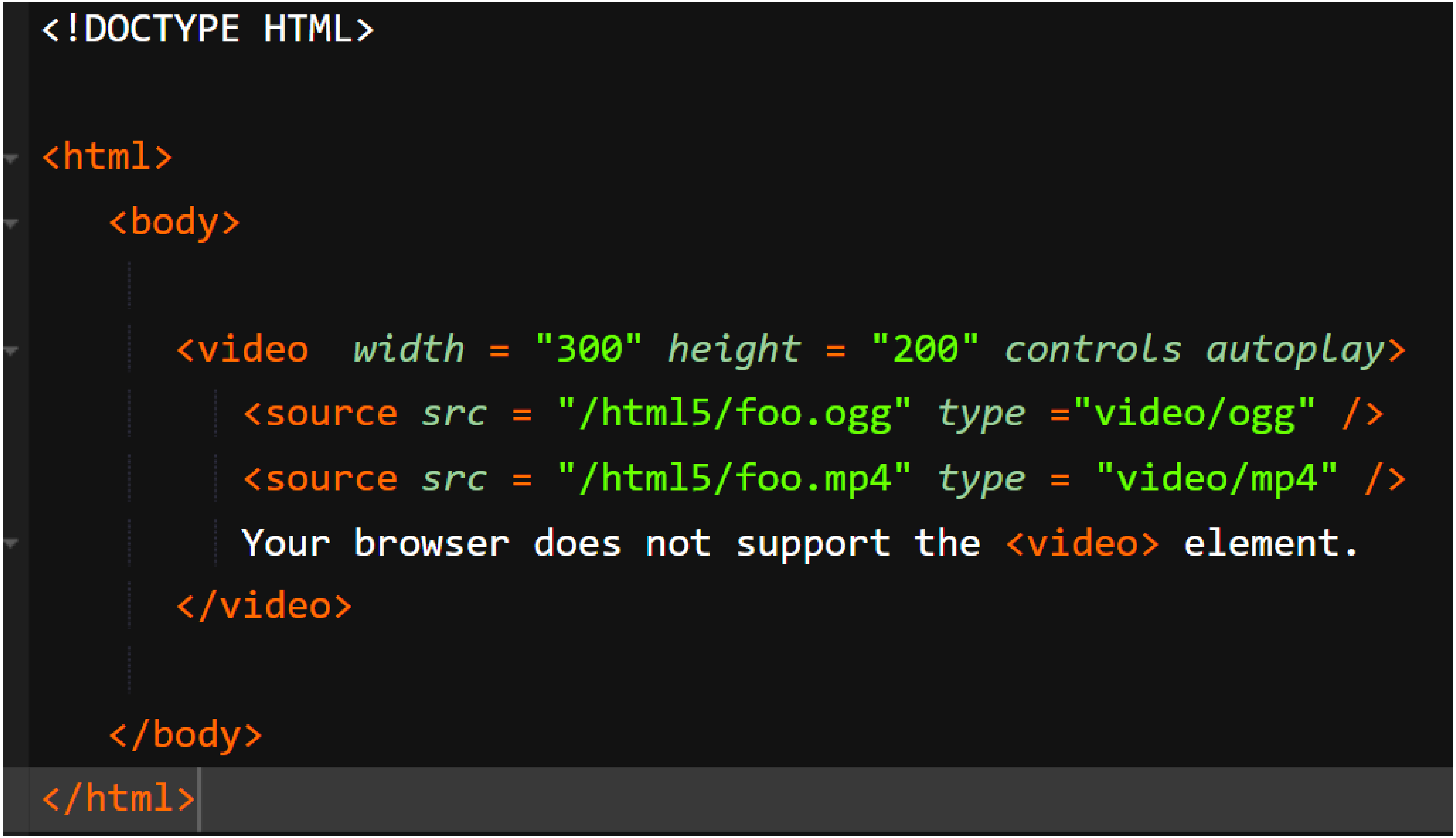
Attribute	Value	Description
oncopy	*script*	Fires when the user copies the content of an element
oncut	*script*	Fires when the user cuts the content of an element
onpaste	*script*	Fires when the user pastes some content in an element

HTML5 | Introduction

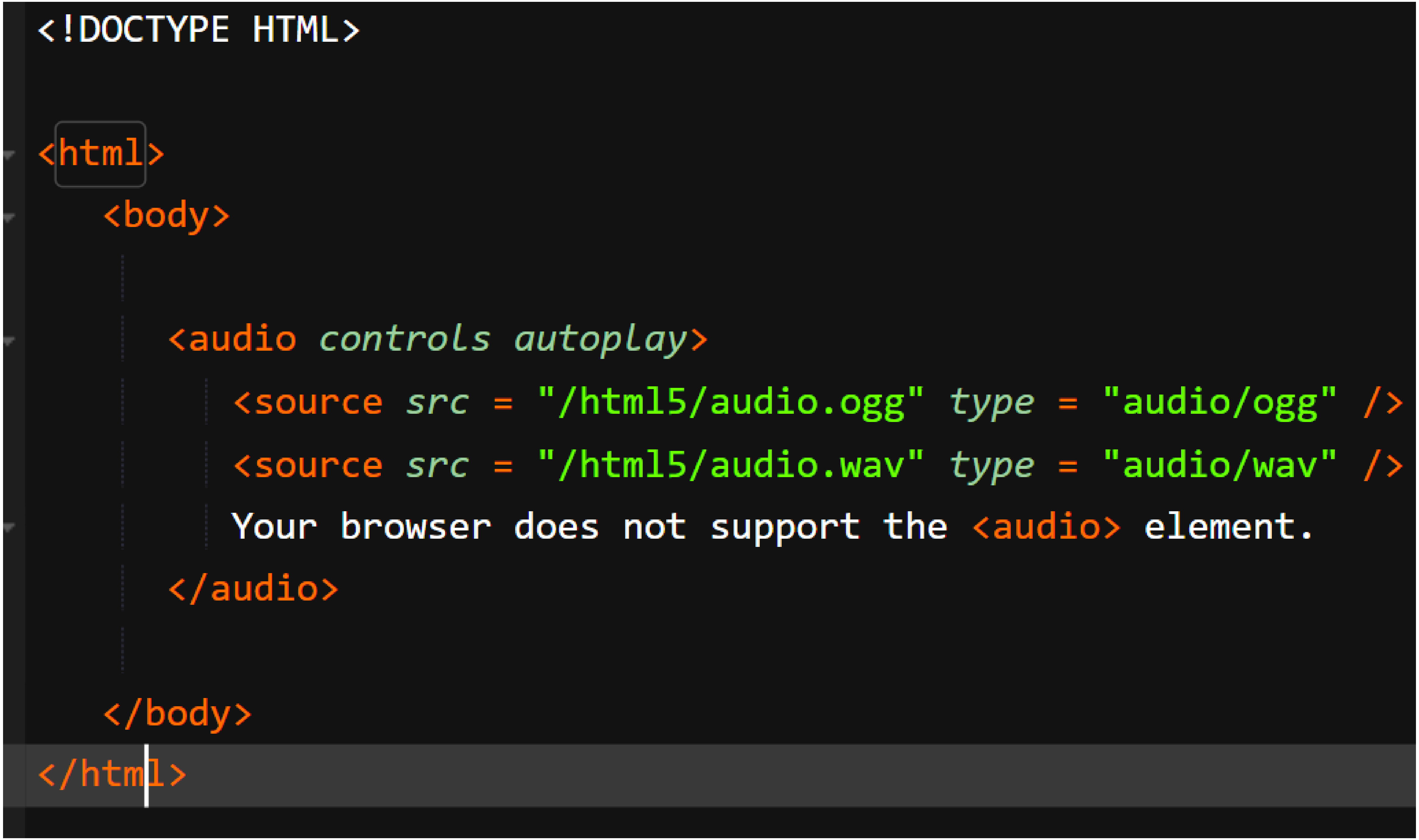
- HTML stands for Hyper Text Markup Language. It is used to design web pages using a markup language.
- HTML is an abbreviation of Hypertext and Markup language. Hypertext defines the link between the web pages. The markup language is used to define the text document within the tag which defines the structure of web pages.
- HTML 5 is the fifth and current version of HTML. It has improved the markup available for documents and has introduced application programming interfaces (API) and Document Object Model (DOM).
- Removed elements from HTML5:
  - <frame>
  - <frameset>
  - <noframes>
  - <isindex>

HTML5 | Features

- It has introduced new multimedia features which supports both audio and video controls by using <audio> and <video> tags.
- There are new graphics elements including vector graphics and tags.
- Enrich semantic content by including <header> <footer>, <article>, <section> and <figure> are added.
- Drag and Drop- The user can grab an object and drag it further dropping it to a new location.
- Geo-location services- It helps to locate the geographical location of a client.
- Web storage facility which provides web application methods to store data on the web browser.
- Uses SQL database to store data offline.
- Allows drawing various shapes like triangle, rectangle, circle, etc.
- Capable of handling incorrect syntax.
- Easy DOCTYPE declaration i.e., <!doctype html>
- Easy character encoding i.e., <meta charset=”UTF-8″>



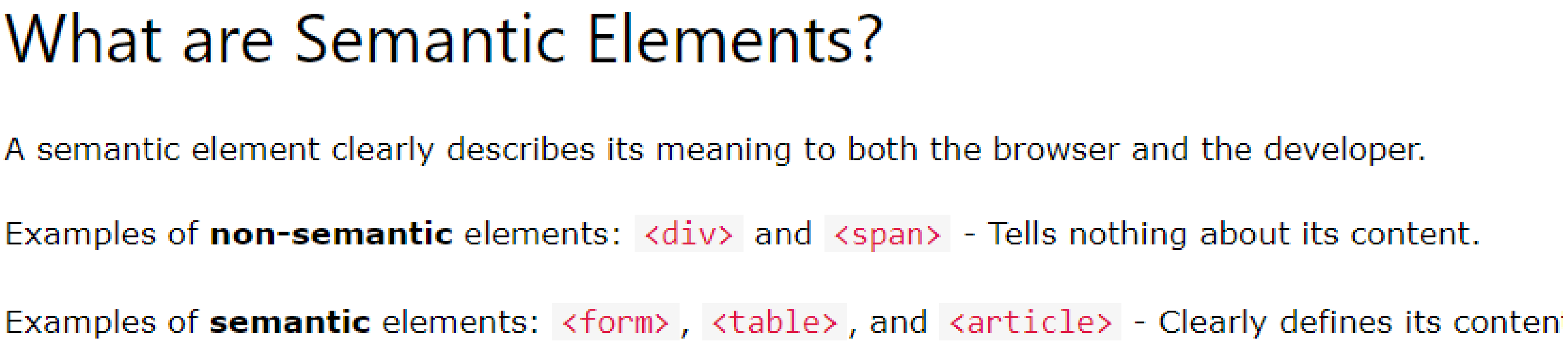
```
<!DOCTYPE HTML>

<html>
    <body>

        <video  width = "300" height = "200" controls autoplay>
            <source src = "/html5/foo.ogg" type ="video/ogg" />
            <source src = "/html5/foo.mp4" type = "video/mp4" />
            Your browser does not support the <video> element.
        </video>

    </body>
</html>
```



```
<!DOCTYPE HTML>

<html>
   <body>

      <audio controls autoplay>
         <source src = "/html5/audio.ogg" type = "audio/ogg" />
         <source src = "/html5/audio.wav" type = "audio/wav" />
         Your browser does not support the <audio> element.
      </audio>

   </body>
</html>
```

HTML Semantic Elements

Semantic elements = elements with a meaning.

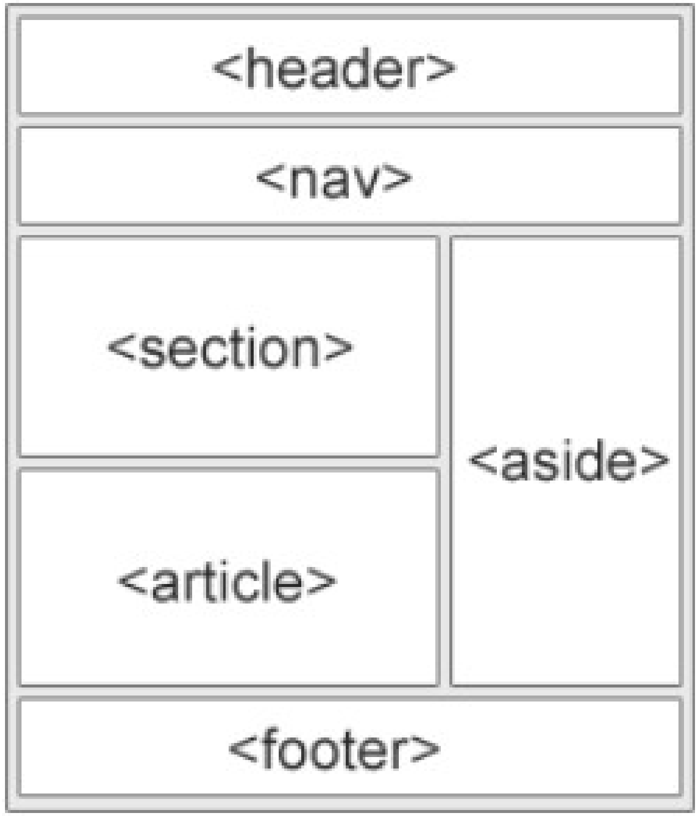


What are Semantic Elements?

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

Examples of **non-semantic** elements: `<div>` and `<span>` - Tells nothing about its content.

Examples of **semantic** elements: `<form>`, `<table>`, and `<article>` - Clearly defines its conten



<header>

<nav>

<section>

<aside>

<article>

<footer>

HTML <section> Element

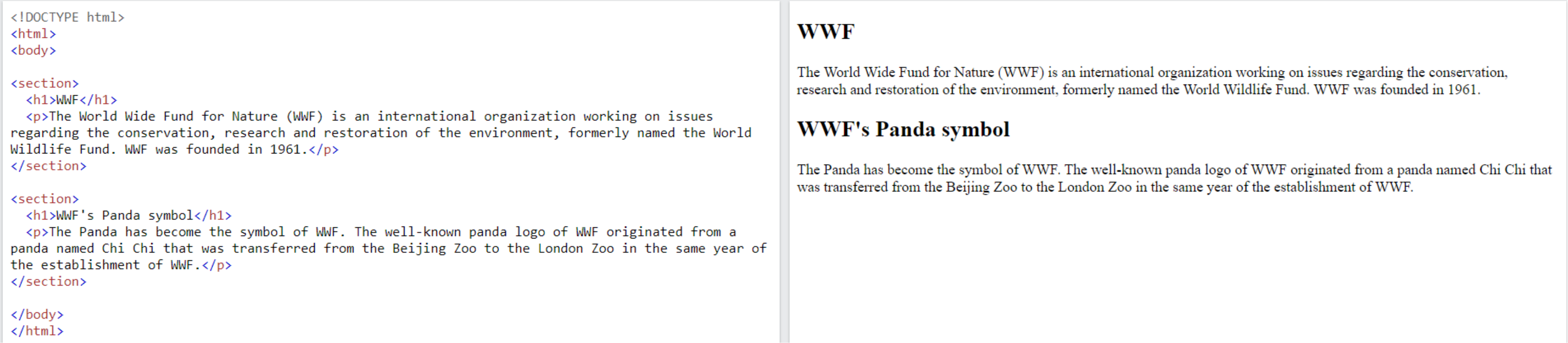
The `<section>` element defines a section in a document.

According to W3C's HTML documentation: "A section is a thematic grouping of content, typically with a heading."

Examples of where a `<section>` element can be used:

- Chapters
- Introduction
- News items
- Contact information

A web page could normally be split into sections for introduction, content, and contact information.



```html
<!DOCTYPE html>
<html>
<body>

<section>
  <h1>WWF</h1>
  <p>The World Wide Fund for Nature (WWF) is an international organization working on issues
regarding the conservation, research and restoration of the environment, formerly named the World
Wildlife Fund. WWF was founded in 1961.</p>
</section>

<section>
  <h1>WWF's Panda symbol</h1>
  <p>The Panda has become the symbol of WWF. The well-known panda logo of WWF originated from a
panda named Chi Chi that was transferred from the Beijing Zoo to the London Zoo in the same year of
the establishment of WWF.</p>
</section>

</body>
</html>
```

WWF

The World Wide Fund for Nature (WWF) is an international organization working on issues regarding the conservation, research and restoration of the environment, formerly named the World Wildlife Fund. WWF was founded in 1961.

WWF's Panda symbol

The Panda has become the symbol of WWF. The well-known panda logo of WWF originated from a panda named Chi Chi that was transferred from the Beijing Zoo to the London Zoo in the same year of the establishment of WWF.

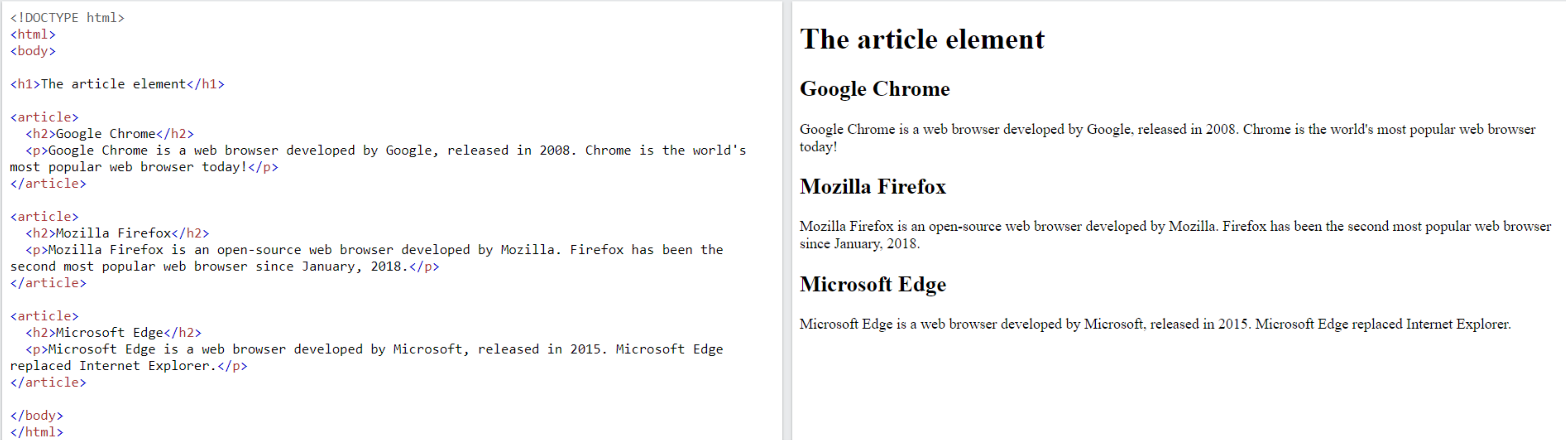
HTML <article> Element

The `<article>` element specifies independent, self-contained content.

An article should make sense on its own, and it should be possible to distribute it independently from the rest of the web site.

Examples of where the `<article>` element can be used:

- Forum posts
- Blog posts
- User comments
- Product cards
- Newspaper articles



```html
<!DOCTYPE html>
<html>
<body>

<h1>The article element</h1>

<article>
  <h2>Google Chrome</h2>
  <p>Google Chrome is a web browser developed by Google, released in 2008. Chrome is the world's
most popular web browser today!</p>
</article>

<article>
  <h2>Mozilla Firefox</h2>
  <p>Mozilla Firefox is an open-source web browser developed by Mozilla. Firefox has been the
second most popular web browser since January, 2018.</p>
</article>

<article>
  <h2>Microsoft Edge</h2>
  <p>Microsoft Edge is a web browser developed by Microsoft, released in 2015. Microsoft Edge
replaced Internet Explorer.</p>
</article>

</body>
</html>
```

The article element

Google Chrome

Google Chrome is a web browser developed by Google, released in 2008. Chrome is the world's most popular web browser today!

Mozilla Firefox

Mozilla Firefox is an open-source web browser developed by Mozilla. Firefox has been the second most popular web browser since January, 2018.

Microsoft Edge

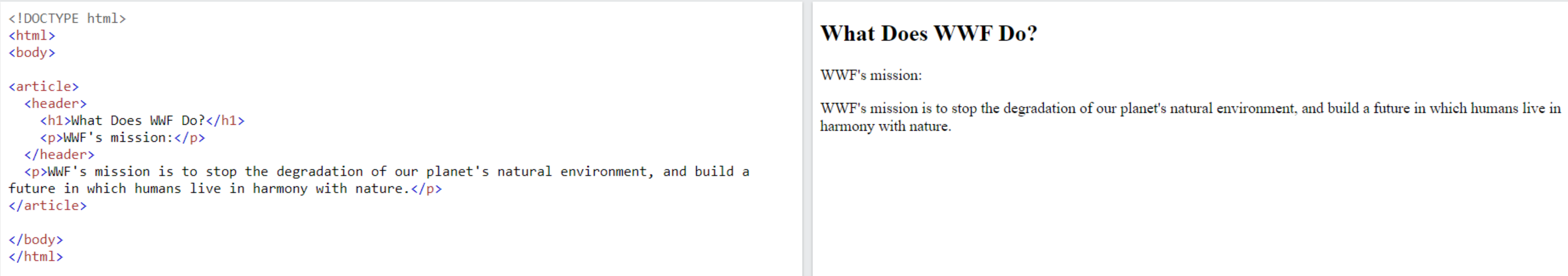
Microsoft Edge is a web browser developed by Microsoft, released in 2015. Microsoft Edge replaced Internet Explorer.

HTML <header> Element

The `<header>` element represents a container for introductory content or a set of navigational links.

A `<header>` element typically contains:

- one or more heading elements (<h1> - <h6>)
- logo or icon
- authorship information

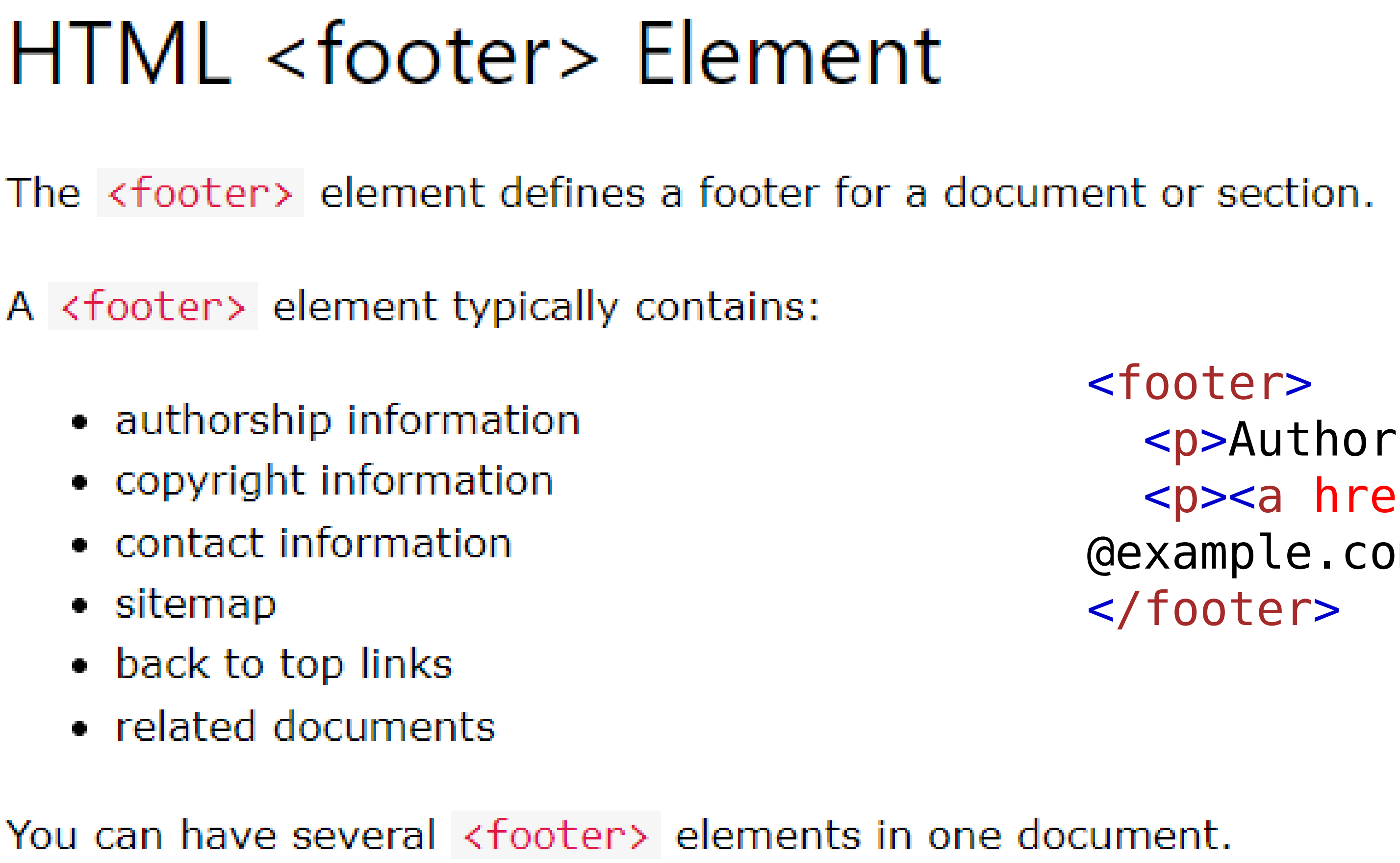


```
<!DOCTYPE html>
<html>
<body>

<article>
  <header>
    <h1>What Does WWF Do?</h1>
    <p>WWF's mission:</p>
  </header>
  <p>WWF's mission is to stop the degradation of our planet's natural environment, and build a future in which humans live in harmony with nature.</p>
</article>

</body>
</html>
```

What Does WWF Do?

WWF's mission:

WWF's mission is to stop the degradation of our planet's natural environment, and build a future in which humans live in harmony with nature.



HTML <footer> Element

The `<footer>` element defines a footer for a document or section.

A `<footer>` element typically contains:

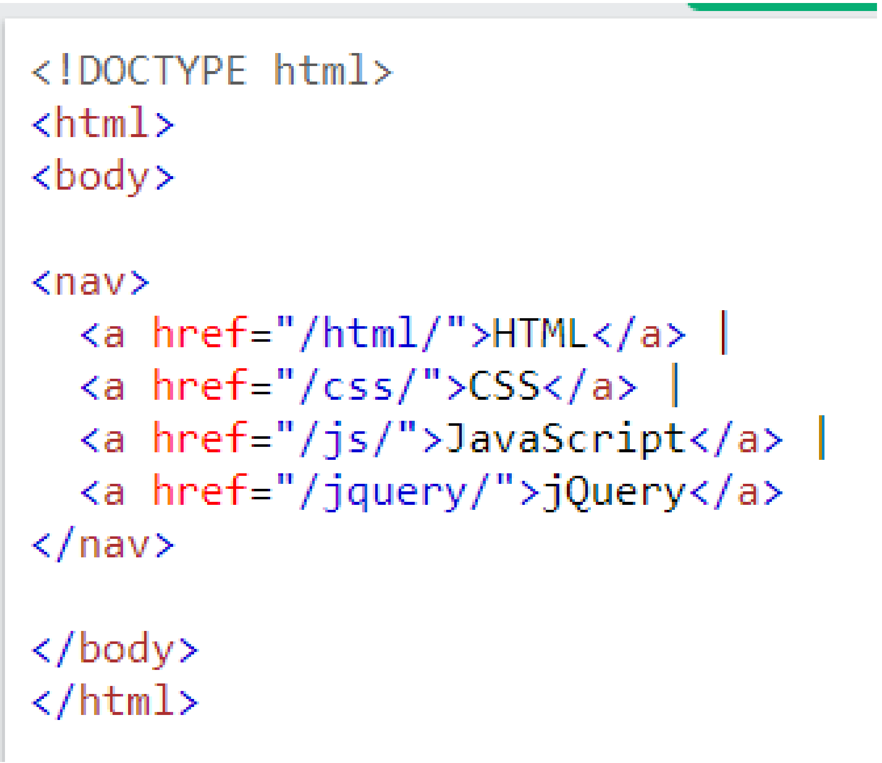
- authorship information
- copyright information
- contact information
- sitemap
- back to top links
- related documents

You can have several `<footer>` elements in one document.

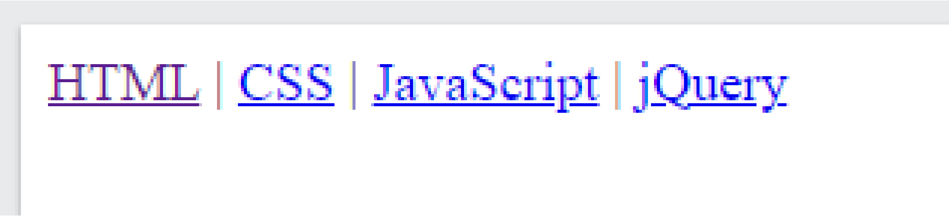
```
<footer>
  <p>Author: Hege Refsnes</p>
  <p><a href="mailto:hege@example.com">hege
@example.com</a></p>
</footer>
```

HTML <nav> Element

The `<nav>` element defines a set of navigation links.



```
<!DOCTYPE html>
<html>
<body>

<nav>
  <a href="/html/">HTML</a> |
  <a href="/css/">CSS</a> |
  <a href="/js/">JavaScript</a> |
  <a href="/jquery/">jQuery</a>
</nav>

</body>
</html>
```

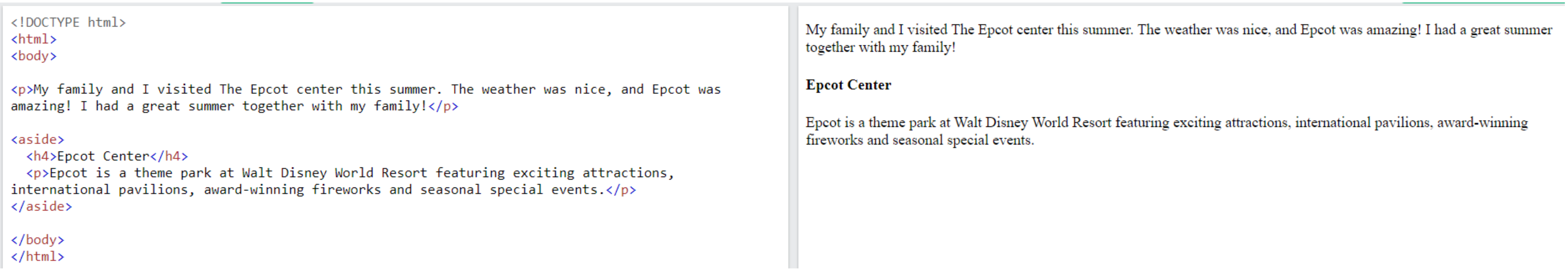


HTML | CSS | JavaScript | jQuery

HTML <aside> Element

The `<aside>` element defines some content aside from the content it is placed in (like a sidebar).

The `<aside>` content should be indirectly related to the surrounding content.



```html
<!DOCTYPE html>
<html>
<body>

<p>My family and I visited The Epcot center this summer. The weather was nice, and Epcot was
amazing! I had a great summer together with my family!</p>

<aside>
  <h4>Epcot Center</h4>
  <p>Epcot is a theme park at Walt Disney World Resort featuring exciting attractions,
international pavilions, award-winning fireworks and seasonal special events.</p>
</aside>

</body>
</html>
```

My family and I visited The Epcot center this summer. The weather was nice, and Epcot was amazing! I had a great summer together with my family!

Epcot Center

Epcot is a theme park at Walt Disney World Resort featuring exciting attractions, international pavilions, award-winning fireworks and seasonal special events.

Lab exercise

12. Write HTML script to show the use of Video and Canvas Element
13. Design a website using semantics elements of HTML (header, footer, nav etc)

3. What is the use of <iframe> tag in HTML?

4. What do you mean by HTML events?

12. Explain structure of an HTML file with example.

17. Design an HTML form to provide user input for Name, Address, and Gender. The form should also contain submit button for submitting the form data.