

HTML 5 Forms

HTML



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<https://github.com/swacademy/HTML5>

<form>

- Is used to create an HTML form for user input.
- Differences Between HTML 4.01 and HTML5
 - HTML5 has added two new attributes:
 - **autocomplete** and **novalidate**
 - Removed the **accept** attribute.

<form> (Cont.)

■ Attributes

- **accept-charset**

- Specifies the character encodings that are to be used for the form submission.

```
1  <form action="demo_form.asp" accept-charset="ISO-8859-1">
2    First name: <input type="text" name="fname"><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="submit" value="Submit">
5  </form>
```

- **action**

- Specifies where to send the form-data when a form is submitted.

<form> (Cont.)

■ Attributes

- **autocomplete**

 new

- Specifies whether a form should have autocomplete on or off.
- **on | off**

```
1  <form action="demo_form.asp" method="get" autocomplete="on">
2    First name:<input type="text" name="fname"><br>
3    E-mail: <input type="email" name="email"><br>
4    <input type="submit">
5  </form>
```

<form> (Cont.)

■ Attributes

● **enctype**

- Specifies how the form-data should be encoded when submitting it to the server (only for method="post").
- **application/x-www-form-urlencoded | multipart/form-data | text/plain**

```
1 <form action="demo_post_enctype.asp"
2  method="post" enctype="multipart/form-data">
3    First name: <input type="text" name="fname"><br>
4    Last name: <input type="text" name="lname"><br>
5    <input type="submit" value="Submit">
6  </form>
```

<form> (Cont.)

■ Attributes

- **method**

- Specifies the HTTP method to use when sending form-data.
- **get | post**

```
1 <form action="demo_post_enctype.asp"
2   method="post" enctype="multipart/form-data">
3     First name: <input type="text" name="fname"><br>
4     Last name: <input type="text" name="lname"><br>
5     <input type="submit" value="Submit">
6   </form>
```

<form> (Cont.)

■ Attributes

- **name**

- Specifies the name of a form.

```
1  ⊜<form action="form_action.asp" method="get" name="myForm">
2    First name: <input type="text" name="fname"><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="button" onclick="formSubmit()" value="Send form data!">
5  </form>
```

<form> (Cont.)

■ Attributes

- **novalidate**

 new

- Specifies that the form should not be validated when submitted.

```
1 <form action="demo_form.asp" novalidate>
2   E-mail: <input type="email" name="user_email">
3   <input type="submit">
4 </form>
```

<form> (Cont.)

■ Attributes

- **target**

- Specifies where to display the response that is received after submitting the form.

- _blank | _self | _parent | _top

```
1  ↗<form action="demo_form.asp" method="get" target="_blank">
2    First name: <input type="text" name="fname"><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="submit" value="Submit">
5  </form>
```

<fieldset>



- Is used to group related elements in a form.
- Draws a box around the related elements.
- The <legend> tag defines a caption for the <fieldset> element.

```
1  <form>
2  |  <fieldset>
3  |  |  <legend>Personalia:</legend>
4  |  |  Name: <input type="text"><br>
5  |  |  Email: <input type="text"><br>
6  |  |  Date of birth: <input type="text">
7  |  </fieldset>
8  </form>
```

A screenshot of a web browser displaying a form. The form contains a legend with the text "Personalia:". Below the legend are three input fields: one for "Name", one for "Email", and one for "Date of birth". Each input field has a placeholder text inside it: "Name:" for the first, "Email:" for the second, and "Date of birth:" for the third.

<fieldset> (Cont.)

■ Attributes

- **disabled**



- Specifies that a group of related form elements should be disabled.

```
1 <form>
2   <fieldset disabled>
3     <legend>Personalia:</legend>
4     Name: <input type="text"><br>
5     Email: <input type="text"><br>
6     Date of birth: <input type="text">
7   </fieldset>
8 </form>
```

A screenshot of a web browser displaying a form. The form has a legend labeled "Personalia:". Below it are three input fields, each preceded by a label: "Name:", "Email:", and "Date of birth:". All three input fields are grayed out, indicating they are disabled.

<fieldset> (Cont.)

■ Attributes

- **form**

new

- Specifies one or more forms the fieldset belongs to.

```
1  <form action="demo_form.asp" method="get" id="form1">
2  |  What is your favorite color? <input type="text" name="fav_color"><br>
3  |  <input type="submit">
4  |</form>
5
6  <p>The fieldset below is outside the form, but still a part of the form.</p>
7
8  <fieldset form="form1">
9  |  <legend>Personalia:</legend>
10 |  Name: <input type="text" name="us</pre>
```

```
11 |  Email: <input type="text" name="us</pre>
```

```
12 |</fieldset>
```

What is your favorite color?

제출

The fieldset below is outside the form, but still a part of the form.

Personalia:

Name:

Email:

<fieldset> (Cont.)

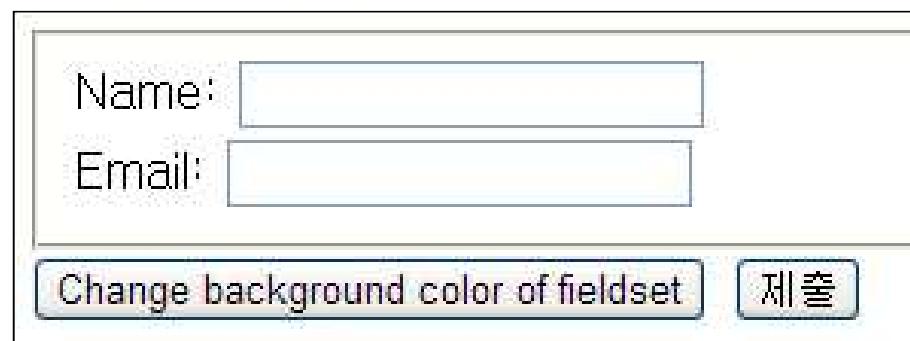
■ Attributes

- **name**

 new

- Specifies a name for the fieldset.

```
1  <form action="demo_form.asp" method="get">
2  <fieldset name="personalia">
3      Name: <input type="text" name="username"><br>
4      Email: <input type="text" name="usermail"><br>
5  </fieldset>
6  <button type="button" onclick="form.personalia.style.backgroundColor='yellow'">
7      Change background color of fieldset</button>
8  <input type="submit">
9  </form>
```



The screenshot shows a web page with a yellow background. At the top, there is a form with two text input fields. The first field is labeled "Name:" and the second is labeled "Email:". Below the inputs is a button with the text "Change background color of fieldset". To the right of the button is another button with Korean text "제출" (Submit).

<legend>

- Defines a caption for the <fieldset> element.

```
1  <form>
2  |  <fieldset>
3  |  |  <legend>Personalia:</legend>
4  |  |  Name: <input type="text"><br>
5  |  |  Email: <input type="text"><br>
6  |  |  Date of birth: <input type="text">
7  |  </fieldset>
8  </form>
```

The image shows a screenshot of a web browser displaying a form. The form consists of a single fieldset element. Inside the fieldset, there is a legend with the text "Personalia:" followed by three input fields for "Name", "Email", and "Date of birth".

Personalia:	
Name:	<input type="text"/>
Email:	<input type="text"/>
Date of birth:	<input type="text"/>

Lab1 : fieldset & legend Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

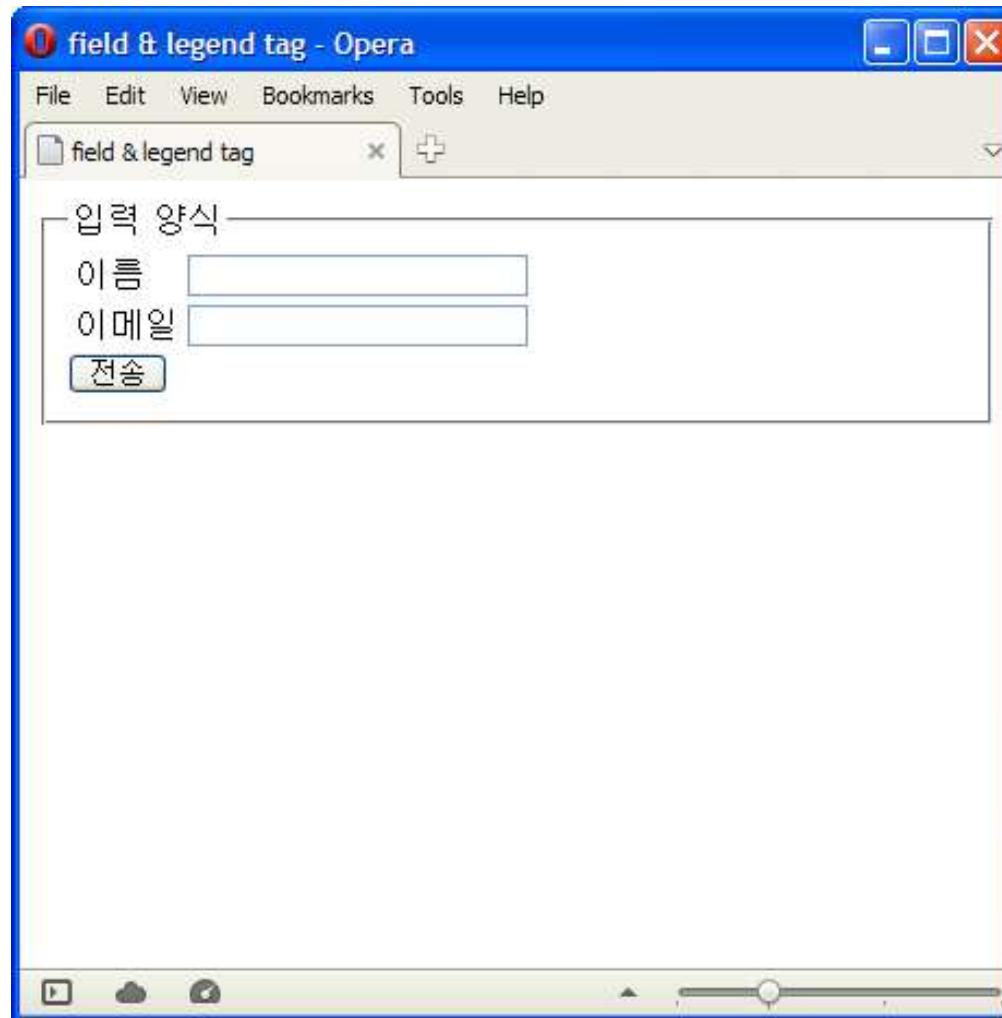
■ Files

- legend.html

Lab1 : legend.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>field & legend tag</title>
5  </head>
6  <body>
7      <form>
8          <fieldset>
9              <legend>입력 양식</legend>
10             <table>
11                 <tr>
12                     <td><label for="name">이름</label></td>
13                     <td><input id="name" type="text" /></td>
14                 </tr>
15                 <tr>
16                     <td><label for="mail">이메일</label></td>
17                     <td><input id="mail" type="email" /></td>
18                 </tr>
19             </table>
20             <input type="submit" value="전송" />
21         </fieldset>
22     </form>
23 </body>
24 </html>
```

Lab1 : Result



<label>

- Defines a label for an <input> element.
- Provides a usability improvement for mouse users, because if the user clicks on the text within the <label> element, it toggles the control.
- Attributes
 - **for**
 - Specifies which form element a label is bound to.

<label> (Cont.)

```
1 <p>Click on one of the text labels to toggle the related control:</p>
2
3 <form action="demo_form.asp">
4   <label for="male">Male</label>
5   <input type="radio" name="sex" id="male" value="male"><br>
6   <label for="female">Female</label>
7   <input type="radio" name="sex" id="female" value="female"><br><br>
8   <input type="submit" value="Submit">
9 </form>
```

Click on one of the text labels to toggle the related control:

Male

Female

<label> (Cont.)

■ Attributes

- **form**



- Specifies one or more forms the label belongs to.

```
1  <p>The label for the first radio button is outside the form,  
2  but still a part of the form.  
3  Try clicking the text label to toggle the male radio button.</p>  
4  
5  <form action="demo_form.asp" id="form1">  
6    <input type="radio" name="sex" id="male" value="male"><br>  
7    <label for="female">Female</label>  
8    <input type="radio" name="sex" id="female" value="female"><br><br>  
9    <input type="submit" value="Submit">  
10   </form>  
11  
12  <label for="male" form="form1">Male</label>
```

The label for the first radio button is outside the form, but still radio button.

Female

Male

Lab2 : Label Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

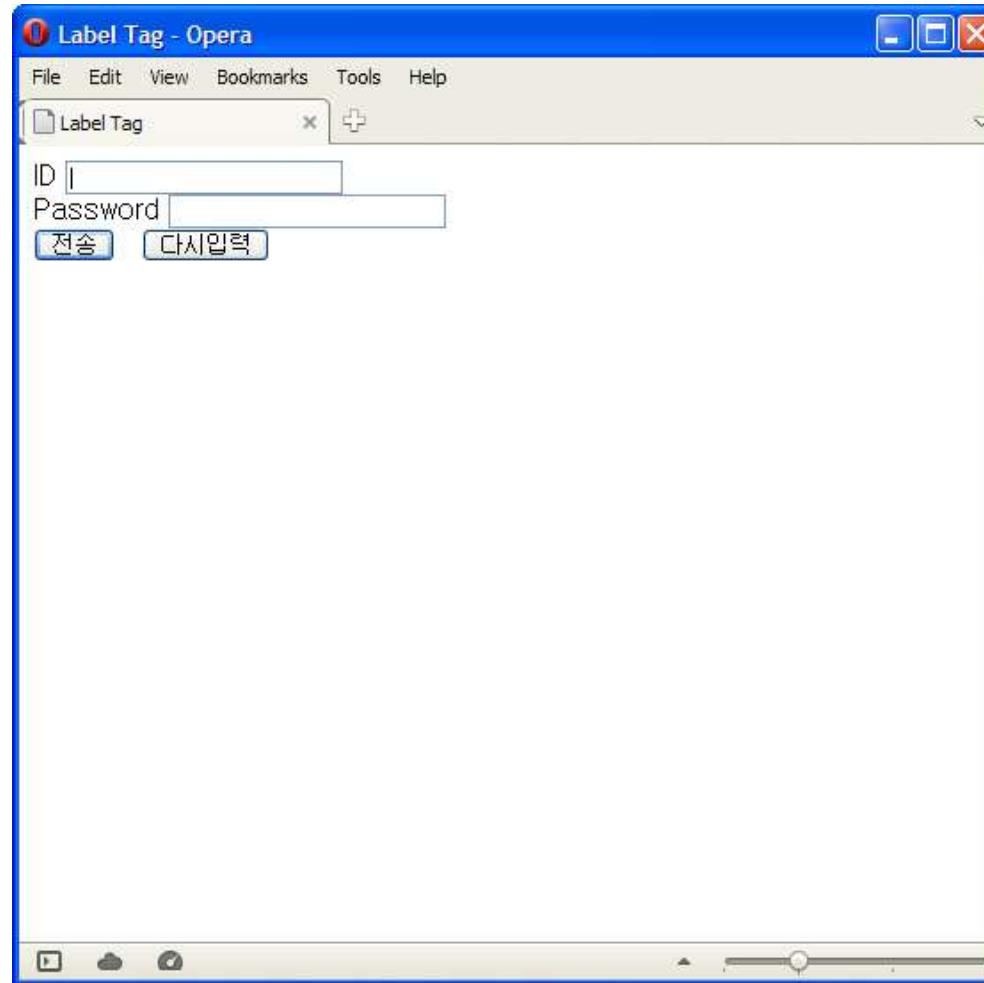
■ Files

- label.html

Lab2 : label.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Label Tag</title>
5  </head>
6  <body>
7      <form>
8          <label for="id">ID</label>
9          <input type="text" id="id" /><br />
10         <label for="passwd">Password</label>
11         <input type="password" id="passwd" /><br />
12         <input type="submit" value="전송" />&nbsp;&nbsp;
13         <input type="reset" value="다시입력" />
14     </form>
15 </body>
16 </html>
```

Lab2 : Result



<input>

- Specifies an input field where the user can enter data.
- Attributes

- **accept**

- Specifies the types of files that the server accepts (only for type="file").
 - **Audio/* | video/* | image/* | MIME_Type**

```
1 <form action="demo_form.asp">
2   <input type="file" name="pic" accept="image/*">
3   <input type="submit">
4 </form>
```

- **name**

- Specifies the name of an **<input>** element.

<input> (Cont.)

■ Attributes

- **alt**

- Specifies an alternate text for images (only for type="image")

```
1  <form action="demo_form.asp">
2  First name: <input type="text" name="fname"><br>
3  <input type="image" src="submit.gif" alt="Submit" width="48" height="48">
4  </form>
```

- **autocomplete**



- Specifies whether an <input> element should have autocomplete enabled.

- **on | off**

```
1  <form action="demo_form.asp" autocomplete="on">
2  First name:<input type="text" name="fname"><br>
3  Last name:<input type="text" name="lname"><br>
4  E-mail:<input type="email" name="email" autocomplete="off"><br>
5  <input type="submit">
6  </form>
```

<input> (Cont.)

■ Attributes

- **autofocus**



- Specifies that an <input> element should automatically get focus when the page loads.

```
1  <form action="demo_form.asp">
2    First name: <input type="text" name="fname" autofocus><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple HTML form. The form consists of two text input fields and a submit button. The first input field is labeled "First name:" and the second is labeled "Last name:". Both fields have a blue border, indicating they are active or selected. Below the inputs is a blue rectangular button labeled "제출" (Submit) in white text.

<input> (Cont.)

■ Attributes

- **checked**

- Specifies that an <input> element should be pre-selected when the page loads (for type="checkbox" or type="radio")

```
1  <form action="demo_form.asp" method="get">
2    <input type="checkbox" name="vehicle" value="Bike"> I have a bike<br>
3    <input type="checkbox" name="vehicle" value="Car" checked> I have a car<br>
4    <input type="submit" value="Submit">
5  </form>
```

I have a bike

I have a car

Submit

<input> (Cont.)

■ Attributes

- **disabled**

- Specifies that an <input> element should be disabled.

```
1  <form action="demo_form.asp">
2  First name: <input type="text" name="fname"><br>
3  Last name: <input type="text" name="lname" disabled><br>
4  <input type="submit" value="Submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple HTML form. The form consists of three elements: a text input field for the first name, a text input field for the last name, and a submit button. The first input field is labeled "First name:" and the second is "Last name:". The "Last name" input field has a gray background, which visually represents the "disabled" state of the attribute. The submit button is labeled "Submit".

<input> (Cont.)

■ Attributes

- **form**



- Specifies one or more forms the <input> element belongs to.

```
1  <form action="demo_form.asp" id="form1">
2  First name: <input type="text" name="fname"><br>
3  <input type="submit" value="Submit">
4  </form>
5
6  <p>The "Last name" field below is outside the form element, but still part of the form.</p>
7
8  Last name: <input type="text" name="lname" form="form1">
```

First name:

The "Last name" field below is outside the form element, but still part of the form.

Last name:

<input> (Cont.)

■ Attributes

- **formaction**

 new

- Specifies the URL of the file that will process the input control when the form is submitted (for type="submit" and type="image").

```
1  <form action="demo_form.asp">
2  First name: <input type="text" name="fname"><br>
3  Last name: <input type="text" name="lname"><br>
4  <input type="submit" value="Submit"><br>
5  <input type="submit" formaction="demo_admin.asp" value="Submit as admin">
6  </form>
```



The image shows a web page with a form. The form contains two text input fields: one for 'First name' and one for 'Last name'. Below these fields are two submit buttons: a standard 'Submit' button and a button labeled 'Submit as admin'.

<input> (Cont.)

■ Attributes

- **formenctype**



- Specifies how the form-data should be encoded when submitting it to the server (for type="submit" and type="image")
- **application/x-www-form-urlencoded | multipart/form-data | text/plain**

```
1  <form action="demo_post_enctype.asp" method="post">
2  First name: <input type="text" name="fname"><br>
3  <input type="submit" value="Submit">
4  <input type="submit" formenctype="multipart/form-data" value="Submit as Multipart/form-data">
5  </form>
```

A screenshot of a web browser displaying a simple form. The form contains a text input field labeled "First name:" followed by a horizontal line for input. Below the input field are two buttons: a standard "Submit" button and a larger, highlighted "Submit as Multipart/form-data" button.

<input> (Cont.)

■ Attributes

- **formmethod**



- Defines the HTTP method for sending data to the action URL
(for type="submit" and type="image")

- **get | post**

```
1  <form action="demo_form.asp" method="get">
2    First name: <input type="text" name="fname"><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="submit" value="Submit">
5    <input type="submit" formmethod="post" formaction="demo_post.asp" value="Submit using POST">
6  </form>
```

The image shows a screenshot of a web browser displaying a form. The form contains two text input fields: one for 'First name' and one for 'Last name'. Below each input field is a corresponding label ('First name:' and 'Last name:'). At the bottom of the form are two submit buttons: 'Submit' and 'Submit using POST'. The 'Submit' button is in a blue box, while the 'Submit using POST' button is in a red box.

<input> (Cont.)

■ Attributes

- **formnovalidate**



- Defines that form elements should not be validated when submitted.

```
1 <form action="demo_form.asp">
2   E-mail: <input type="email" name="userid"><br>
3   <input type="submit" value="Submit"><br>
4   <input type="submit" formnovalidate="formnovalidate" value="Submit without validation">
5 </form>
```

A screenshot of a web page showing a form. The form contains a label "E-mail:" followed by an input field. Below the input field are two submit buttons: one labeled "Submit" and another labeled "Submit without validation". The "Submit without validation" button has a different color scheme and is slightly larger than the standard "Submit" button.

E-mail:

<input> (Cont.)

■ Attributes

- **formtarget**



- Specifies where to display the response that is received after submitting the form (for type="submit" and type="image").

- **_blank | _self | _parent | _top | framename**

```
1  <form action="demo_form.asp">
2  □ First name: <input type="text" name="fname"><br>
3  □ Last name: <input type="text" name="lname"><br>
4  <input type="submit" value="Submit as normal">
5  <input type="submit" formtarget="_blank" value="Submit to a new window/tab">
6  </form>
```

The image shows a visual representation of the HTML form. It consists of a light gray box containing two text input fields labeled "First name:" and "Last name:", each with a small diamond icon to its left. Below these fields are two blue rectangular buttons labeled "Submit as normal" and "Submit to a new window/tab".

<input> (Cont.)

■ Attributes

- **height**



- Specifies the height of an <input> element (only for type="image").

- **width**

- Specifies the width of an <input> element (only for type="image").

```
1  <form action="demo_form.asp">
2  First name: <input type="text" name="fname"><br>
3  Last name: <input type="text" name="lname"><br>
4  <input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
5  </form>
```

A screenshot of a web form. It contains two text input fields labeled "First name:" and "Last name:", both currently empty. Below the input fields is a green circular button with a white right-pointing arrow, which serves as the submit button.

<input> (Cont.)

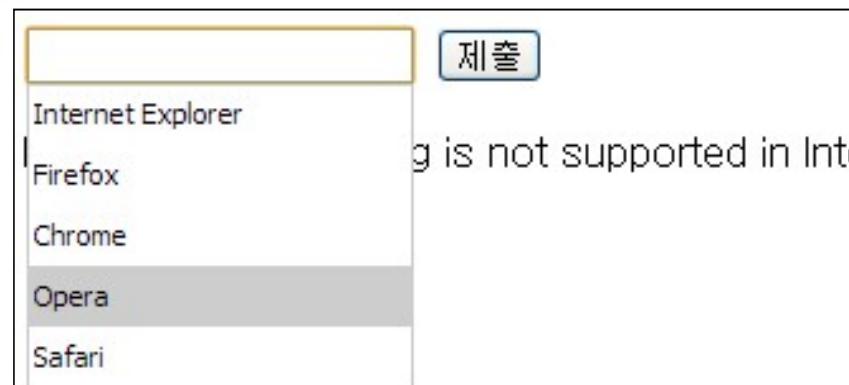
■ Attributes

- **list**



- Refers to a <**datalist**> element that contains pre-defined options for an <**input**> element.

```
1 <form action="demo_form.asp" method="get">
2   <input list="browsers" name="browser">
3   <datalist id="browsers">
4     <option value="Internet Explorer">
5     <option value="Firefox">
6     <option value="Chrome">
7     <option value="Opera">
8     <option value="Safari">
9   </datalist>
10  <input type="submit">
11 </form>
```



<input> (Cont.)

■ Attributes

- **maxlength**

- Specifies the maximum number of characters allowed in an <input> element.

```
1  <form action="demo_form.asp">
2  Username: <input type="text" name="username" maxlength="10"><br>
3  <input type="submit" value="Submit">
4  </form>
```

<input> (Cont.)

■ Attributes

- **multiple**



- Specifies that a user can enter more than one value in an <input> element.

```
1 <form action="demo_form.asp">
2   Select images: <input type="file" name="img" multiple>
3   <input type="submit">
4 </form>
```

Select images: 선택된 파일 없음

<input> (Cont.)

■ Attributes

- **pattern**



- Specifies a regular expression that an <input> element's value is checked against.

```
1  <form action="demo_form.asp">
2  Country code: <input type="text" name="country_code" pattern="[A-Za-z]{3}"
3  title="Three letter country code">
4  <input type="submit">
5  </form>
```

Country code: 제출

<input> (Cont.)

■ Attributes

- **placeholder**



- Specifies a short hint that describes the expected value of an <input> element.

```
1  <form action="demo_form.asp">
2    <input type="text" name="fname" placeholder="First name"><br>
3    <input type="text" name="lname" placeholder="Last name"><br>
4    <input type="submit" value="Submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple HTML form. The form consists of two text input fields stacked vertically, each with a placeholder text inside. Below the inputs is a single-line text input field. At the bottom of the form is a large, prominent yellow rectangular button labeled "Submit".

<input> (Cont.)

■ Attributes

- **readonly**

- Specifies that an input field is read-only.

```
1    
2  Email: <input type="text" name="email"><br>  
3  Country: <input type="text" name="country" value="Norway" readonly><br>  
4  <input type="submit" value="Submit">  
5  </form>
```

Email:

Country:

<input> (Cont.)

■ Attributes

- **required**



- Specifies that an input field must be filled out before submitting the form.

```
1  <form action="demo_form.asp">
2    Username: <input type="text" name="username" required>
3    <input type="submit">
4  </form>
```

Username: |

제출

Note: The required ! 이 입력란을 작성하세요.

<input> (Cont.)

■ Attributes

- **size**

- Specifies the width, in characters, of an <input> element.

```
1  <form action="demo_form.asp">
2    Email: <input type="text" name="email" size="35"><br>
3    PIN: <input type="text" name="pin" maxlength="4" size="4"><br>
4    <input type="submit" value="Submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a form. The form contains two text input fields labeled "Email:" and "PIN:", each followed by a blank input field. Below these is a blue "Submit" button. The entire form is enclosed in a light gray border.

<input> (Cont.)

■ Attributes

- **src**

- Specifies the URL of the image to use as a submit button (only for type="image").

```
1   <form action="demo_form.asp">
2  First name: <input type="text" name="fname"><br>
3  Last name: <input type="text" name="lname"><br>
4  <input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
5  </form>
```

First name:

Last name:



<input> (Cont.)

■ Attributes

- **value**

- Specifies the value of an <input> element.

```
1  <form action="demo_form.asp">
2  First name: <input type="text" name="fname" value="John"><br>
3  Last name: <input type="text" name="lname" value="Doe"><br>
4  <input type="submit" value="Submit form">
5  </form>
```

The image shows a simple HTML form with the following structure:

```
<form action="demo_form.asp">
  First name: <input type="text" name="fname" value="John"><br>
  Last name: <input type="text" name="lname" value="Doe"><br>
  <input type="submit" value="Submit form">
</form>
```

The browser displays the form with the values specified in the code. The 'First name' field contains 'John' and the 'Last name' field contains 'Doe'. The 'Submit form' button is visible at the bottom.

<input> (Cont.)

■ Attributes

- **step**



- Specifies the legal number intervals for an input field.

```
1 <form action="demo_form.asp">
2   <input type="number" name="points" step="3">
3   <input type="submit">
4 </form>
```

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **button**

```
1  <form>
2  |  <input type="button" value="Click me" onclick="msg()">
3  |  </form>
```



<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **checkbox**

```
1   1 I have a bike  
2   2 I have a car  
3   3 I have a boat  
4   4 Submit
```

A screenshot of a web browser displaying a form. The form contains three checkboxes labeled "I have a bike", "I have a car", and "I have a boat", each preceded by an empty square input field. Below the checkboxes is a rectangular "Submit" button with a dark blue border and white text.

<input> (Cont.)

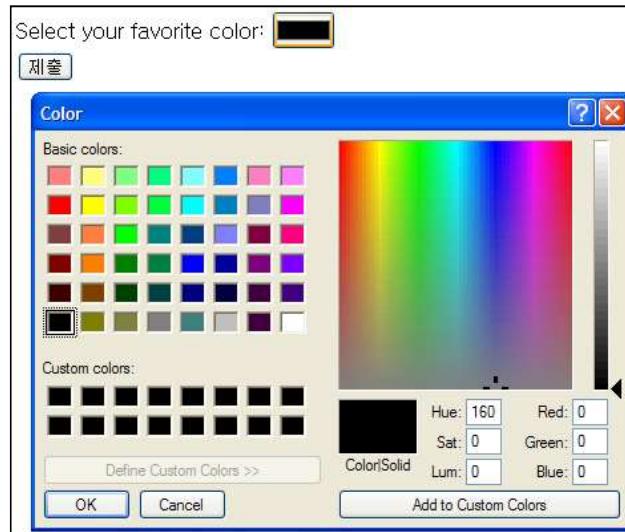
■ Attributes

- **type**

- Specifies the type <input> element to display.

- **color**

```
1  <form action="demo_form.asp">
2    Select your favorite color: <input type="color" name="favcolor"><br>
3    <input type="submit">
4  </form>
```



<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **date**

 *new*

```
1  <form action="demo_form.asp">
2    Birthday: <input type="date" name="bday">
3    <input type="submit">
4  </form>
```

Birthday:

2013년 10월

일	월	화	수	목	금	토
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

<input> (Cont.)

■ Attributes

- **type**

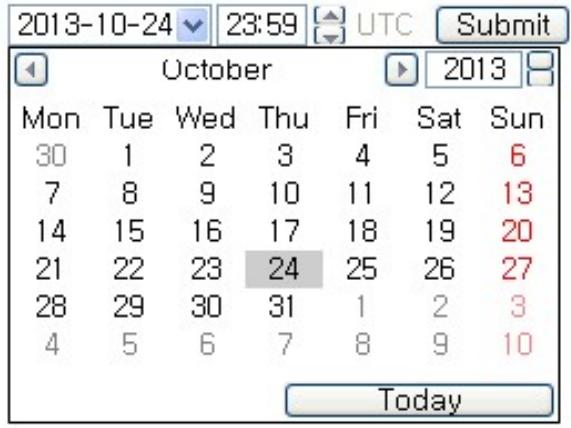
- Specifies the type <input> element to display.

- **datetime**

 new

```
1 <form action="demo_form.asp">
2   Birthday (date and time): <input type="datetime" name="bdytime">
3   <input type="submit">
4 </form>
```

Birthday (date and time):



The screenshot shows a web form with a label "Birthday (date and time)". Below it is an input field with the value "2013-10-24". To the right of the input field are dropdown menus for selecting hours ("23:59") and minutes ("UTC"). A "Submit" button is also visible. Below the input field is a date picker calendar for October 2013. The calendar shows days from Monday to Sunday. The date "2013-10-24" is highlighted with a gray background. Other dates are shown in red. At the bottom of the calendar, there is a "Today" button.

<input> (Cont.)

■ Attributes

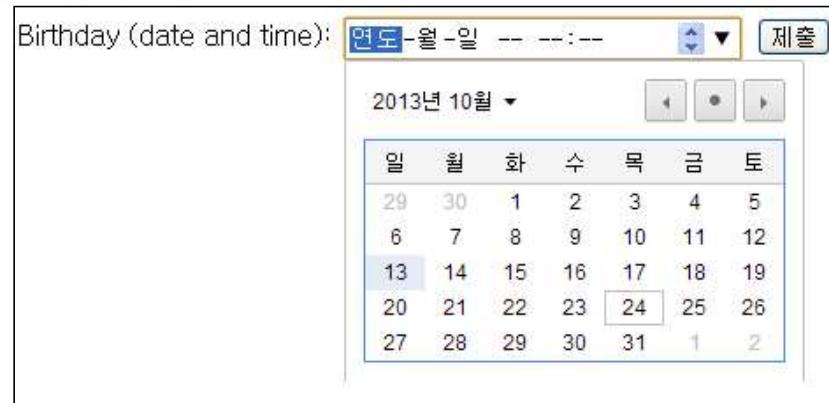
- **type**

- Specifies the type <input> element to display.

- **datetime-local**

 new

```
1  <form action="demo_form.asp">
2    Birthday (date and time): <input type="datetime-local" name="bdaytime">
3    <input type="submit">
4  </form>
```



<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **email**

• new

```
1  <form action="demo_form.asp">
2    E-mail: <input type="email" name="usremail">
3    <input type="submit">
4  </form>
```

E-mail:

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **file**

```
1  <form action="demo_form.asp">
2  Select a file: <input type="file" name="img">
3  <input type="submit">
4  </form>
```

Select a file: 선택된 파일 없음

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **hidden**

```
1  <form action="demo_form.asp">
2    First name: <input type="text" name="fname"><br>
3    <input type="hidden" name="country" value="Norway">
4    <input type="submit" value="Submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple HTML form. The form consists of a label "First name:" followed by a text input field. Below the input field is a submit button labeled "Submit". The code on the left side of the slide corresponds to this form structure, with line numbers 1 through 5.

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **image**

```
1  <form action="demo_form.asp">
2  First name: <input type="text" name="fname"><br>
3  Last name: <input type="text" name="lname"><br>
4  <input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple form. It consists of two text input fields stacked vertically. The first field is labeled "First name:" and the second is labeled "Last name:". Below these fields is a green circular button containing a white right-pointing arrow, which serves as the submit button for the form. The entire form is contained within a single `<form>` tag as shown in the accompanying code snippet.

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **month**



```
1 1 <form action="demo_form.asp">
2 2   Birthday (month and year): <input type="month" name="bdaymonth">
3 3   <input type="submit">
4 4 </form>
```

Birthday (month and year):

일	월	화	수	목	금	토
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

<input> (Cont.)

■ Attributes

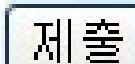
- **type**

- Specifies the type <input> element to display.

- **number**



```
1 <form action="demo_form.asp">
2   Quantity (between 1 and 5): <input type="number" name="quantity" min="1" max="5">
3   <input type="submit">
4 </form>
```

Quantity (between 1 and 5):  

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **password**

```
1  <form action="demo_form.asp">
2  Email: <input type="text" name="email"><br>
3  Password: <input type="password" name="pwd" maxlength="8"><br>
4  <input type="submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a form. The form contains two text input fields and one submit button. The first input field is labeled "Email:" and contains the value "aaa". The second input field is labeled "Password:" and contains the value "*****". Below the inputs is a blue rectangular button labeled "제출" (Submit).

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **radio**

```
1  <form action="demo_form.asp">
2    <input type="radio" name="gender" value="male"> Male<br>
3    <input type="radio" name="gender" value="female"> Female<br>
4    <input type="submit" value="Submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a form. The form contains five lines of code. Lines 1-4 are visible in the code block above, and line 5 is the closing

Male
Female
Submit

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **range**

• new

```
1  <form action="demo_form.asp" method="get">
2  Points: <input type="range" name="points" min="1" max="10">
3  <input type="submit">
4  </form>
```

Points: 제출

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **reset**

```
1  <form action="demo_form.asp">
2    Email: <input type="text" name="email"><br>
3    Pin: <input type="text" name="pin" maxlength="4"><br>
4    <input type="reset" value="Reset">
5    <input type="submit" value="Submit">
6  </form>
```

The image shows a screenshot of a web browser displaying a form. The form contains two text input fields: one for 'Email:' and one for 'Pin:'. Below each input field is a label. At the bottom of the form are two buttons: 'Reset' on the left and 'Submit' on the right. The entire form is enclosed in a light gray border.

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **search**



```
1  <form action="demo_form.asp">
2    Search Google: <input type="search" name="googlesearch"><br>
3    <input type="submit">
4  </form>
```

Search Google: ×

제출

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **submit**

```
1  <form action="demo_form.asp">
2    First name: <input type="text" name="fname"><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple HTML form. The form consists of two text input fields stacked vertically, each preceded by a label ('First name:' and 'Last name:'). Below these fields is a single button labeled '제출' (Submit). The entire form is contained within a light gray rectangular area.

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **tel**

• new

```
1  <form action="demo_form.asp">
2  Telephone: <input type="tel" name="usrtel"><br>
3  <input type="submit">
4  </form>
```

Telephone:

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **text**

```
1  <form action="demo_form.asp">
2    First name: <input type="text" name="fname"><br>
3    Last name: <input type="text" name="lname"><br>
4    <input type="submit">
5  </form>
```

The image shows a screenshot of a web browser displaying a simple HTML form. The form consists of two text input fields stacked vertically, each preceded by a label ('First name:' and 'Last name:'). Below these fields is a single button labeled '제출' (Submit). The code on the left side of the slide corresponds to this visual representation.

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **time**

• new

```
1  <form action="demo_form.asp">
2  Select a time: <input type="time" name="usr_time">
3  <input type="submit">
4  </form>
```

Select a time: 오후 03:26 X ↑ ↓ 제출

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **url**

 new

```
1  <form action="demo_form.asp">
2  Add your homepage: <input type="url" name="homepage"><br>
3  <input type="submit">
4  </form>
```

Add your homepage:

<input> (Cont.)

■ Attributes

- **type**

- Specifies the type <input> element to display.

- **week**

new

```
1  1 <form action="demo_form.asp">
2  2   Select a week: <input type="week" name="year_week">
3  3   <input type="submit">
4  4 </form>
```

Select a week: 2013, 번째 주 제출

2013년 10월

주	일	월	화	수	목	금	토
40	29	30	1	2	3	4	5
41	6	7	8	9	10	11	12
42	13	14	15	16	17	18	19
43	20	21	22	23	24	25	26
44	27	28	29	30	31	1	2

<input> (Cont.)

■ Attributes

- **max**



- Specifies the maximum value for an <input> element.

- **number | date**

```
1  <form action="demo_form.asp">
2
3  Enter a date before 1980-01-01:
4  <input type="date" name="bday" max="1979-12-31"><br>
5
6  Enter a date after 2000-01-01:
7  <input type="date" name="bday" min="2000-01-02"><br>
8
9  Quantity (between 1 and 5):
10 <input type="number" name="quantity" min="1" max="5"><br>
11
12 <input type="submit">
13 </form>
```

Enter a date before 1980-01-01: 연도 - 월 - 일 ▲▼

Enter a date after 2000-01-01: 연도 - 월 - 일 ▲▼

Quantity (between 1 and 5): ▲▼

제출

<input> (Cont.)

■ Attributes

- **min**



- Specifies the minimum value for an <input> element.

- **number | date**

```
1  <form action="demo_form.asp">
2
3  Enter a date before 1980-01-01:
4  <input type="date" name="bday" max="1979-12-31"><br>
5
6  Enter a date after 2000-01-01:
7  <input type="date" name="bday" min="2000-01-02"><br>
8
9  Quantity (between 1 and 5):
10 <input type="number" name="quantity" min="1" max="5"><br>
11
12 <input type="submit">
13 </form>
```

Enter a date before 1980-01-01: 연도-월-일 ▲▼

Enter a date after 2000-01-01: 연도-월-일 ▲▼

Quantity (between 1 and 5): ▲▼

제출

Lab3 : Basic Input Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

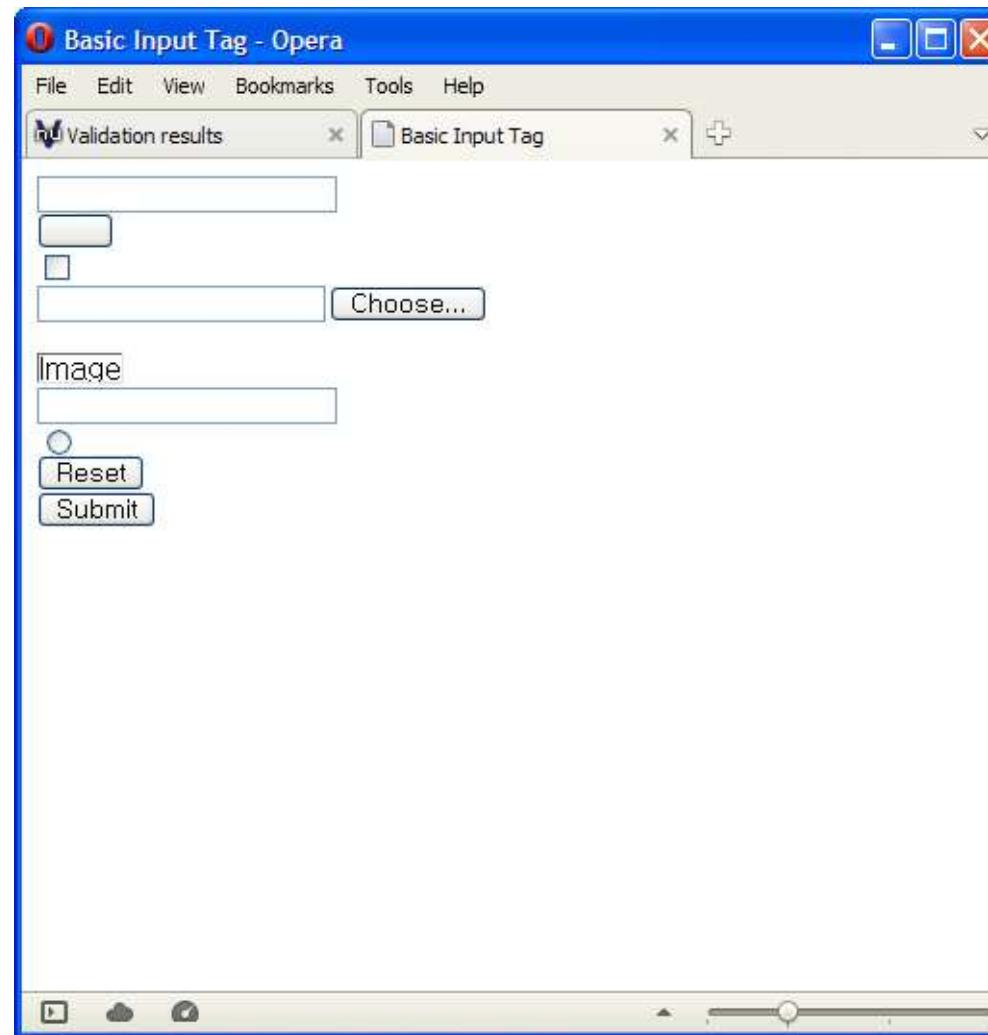
■ Files

- input.html

Lab3 : input.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Basic Input Tag</title>
5  </head>
6  <body>
7      <form>
8          <input type="text" /><br />
9          <input type="button" /><br />
10         <input type="checkbox" /><br />
11         <input type="file" /><br />
12         <input type="hidden" /><br />
13         <input type="image" /><br />
14         <input type="password" /><br />
15         <input type="radio" /><br />
16         <input type="reset" /><br />
17         <input type="submit" />
18     </form>
19 </body>
20 </html>
```

Lab3 : Result



Lab4 : Basic Input Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

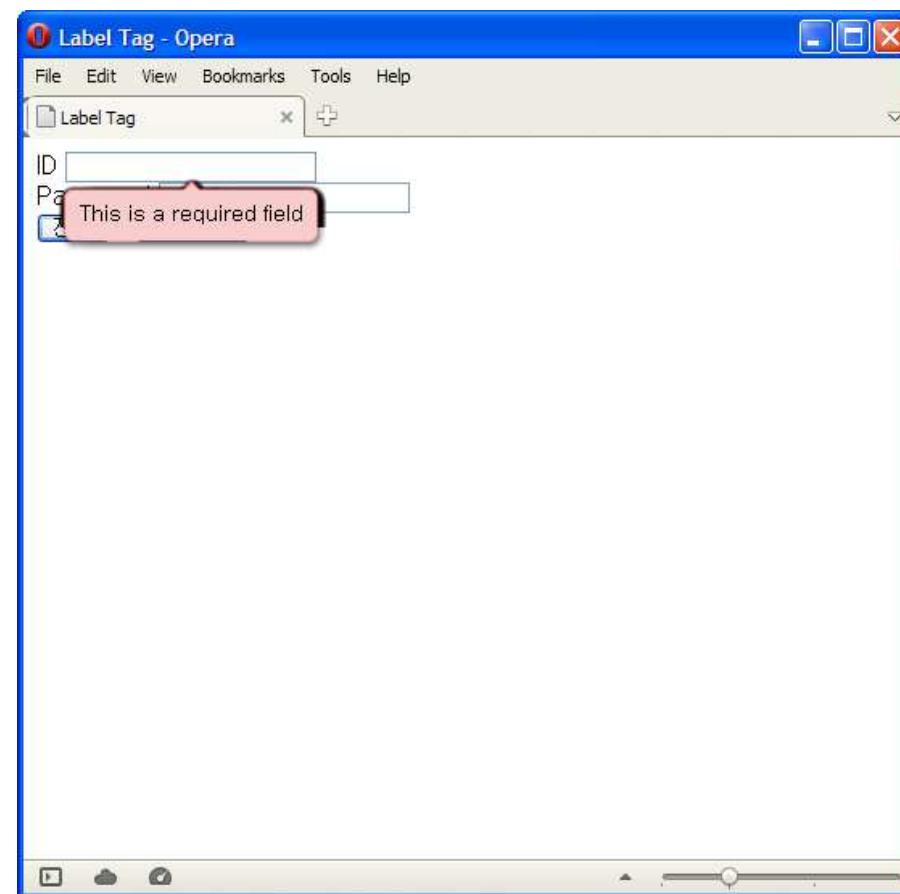
■ Files

- input1.html

Lab4 : input1.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Label Tag</title>
5  </head>
6  <body>
7      <form>
8          <label for="id">ID</label>
9          <input type="text" id="id" placeholder="아이디"
10         required="required" /><br />
11
12         <label for="passwd">Password</label>
13         <input type="password" id="passwd" placeholder="패스워드"
14         required="required" /><br />
15
16         <input type="submit" value="전송" />&nbsp;&nbsp;
17         <input type="reset" value="다시입력" />
18     </form>
19 </body>
20 </html>
```

Lab4 : Result



Lab5 : Advanced Input Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

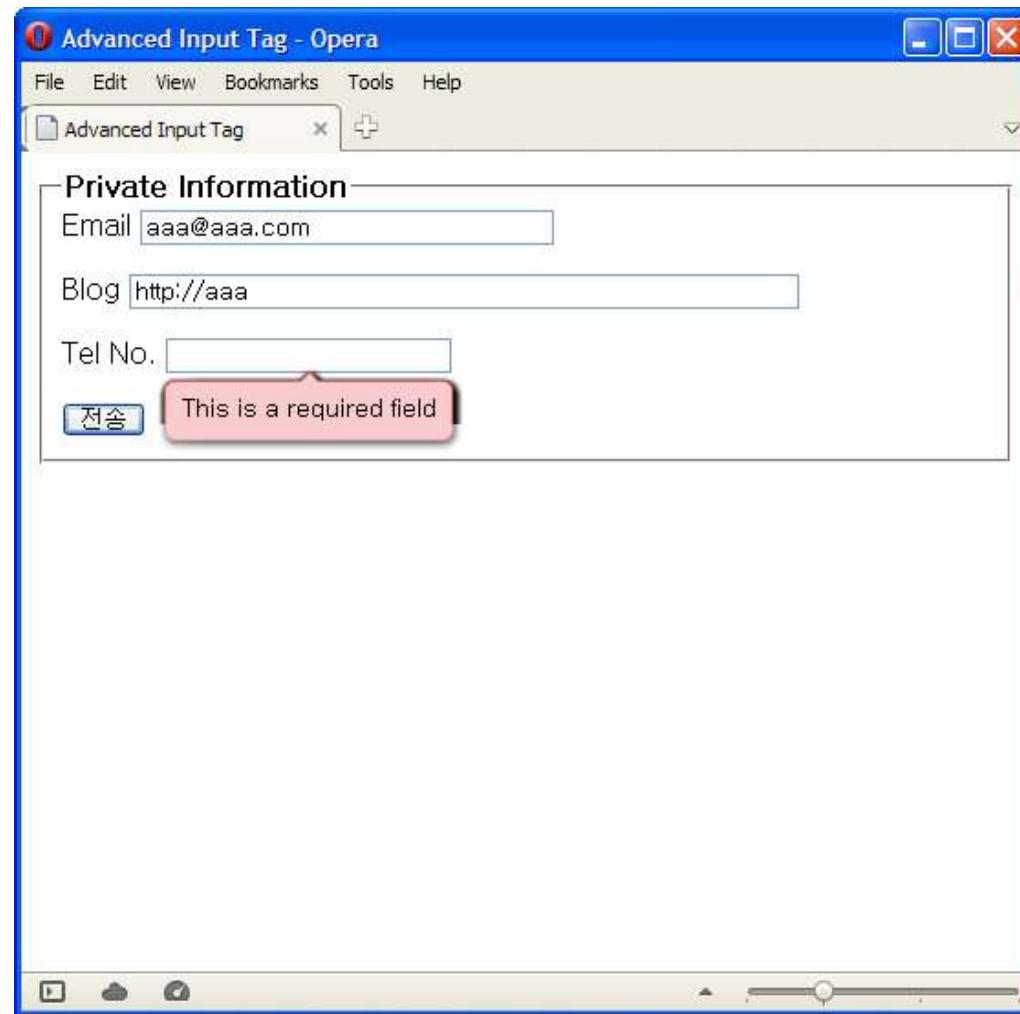
■ Files

- input2.html

Lab5 : input2.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Advanced Input Tag</title>
5  </head>
6  <body>
7      <form>
8          <fieldset>
9              <legend><b>Private Information</b></legend>
10             <label for="myemail">Email</label>
11             <input type="email" id="myemail" placeholder="이메일"
12               required="required" size="30" /><br /><br />
13
14             <label for="myblog">Blog</label>
15             <input type="url" id="myblog" placeholder="블로그주소"
16               required="required" size="50"/><br /><br />
17
18             <label for="mytel">Tel No.</label>
19             <input type="tel" id="mytel" placeholder="전화번호"
20               required="required" size="20"/><br /><br />
21             <input type="submit" value="전송" />&nbsp;&nbsp;
22             <input type="reset" value="다시입력" />
23         </form>
24     </body>
25 </html>
```

Lab5 : Result



Lab6 : Advanced Input Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- input3.html

Lab6 : input3.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Advanced Input Tag</title>
5  </head>
6  <body>
7      <form>
8          <fieldset>
9              <legend><b>Date, Datetime, Month, Week, Time</b></legend>
10             <input type="datetime" /><br /><br />
11             <input type="datetime-local" /><br /><br />
12             <input type="date" /><br /><br />
13             <input type="month" /><br /><br />
14             <input type="week" /><br /><br />
15             <input type="time" min="07:00" max="12:00"
16                 required="required" /><br /><br />
17         </fieldset>
18         <input type="submit" value="전송" />&nbsp;&nbsp;
19         <input type="reset" value="다시입력" />
20     </form>
21 </body>
22 </html>
```

Lab6 : Result

Advanced Input Tag - Opera

Date, Datetime, Month, Week, Time

datetime 2013-10-28 11:25 UTC

datetime-local

date 2013-10-10

month 2013-10

week 2013-W42

time 00:00

October 2013

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

Today

전송 다시입력

Advanced Input Tag

Date, Datetime, Month, Week, Time

datetime

datetime-local 2013-10-10 오전 11:00

date 2013-10-10

month 2013년 10월

week 2013, 41번째 주

time --:--

이 입력란을 작성하세요.

전송 다시입력

Lab7 : Advanced Input Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

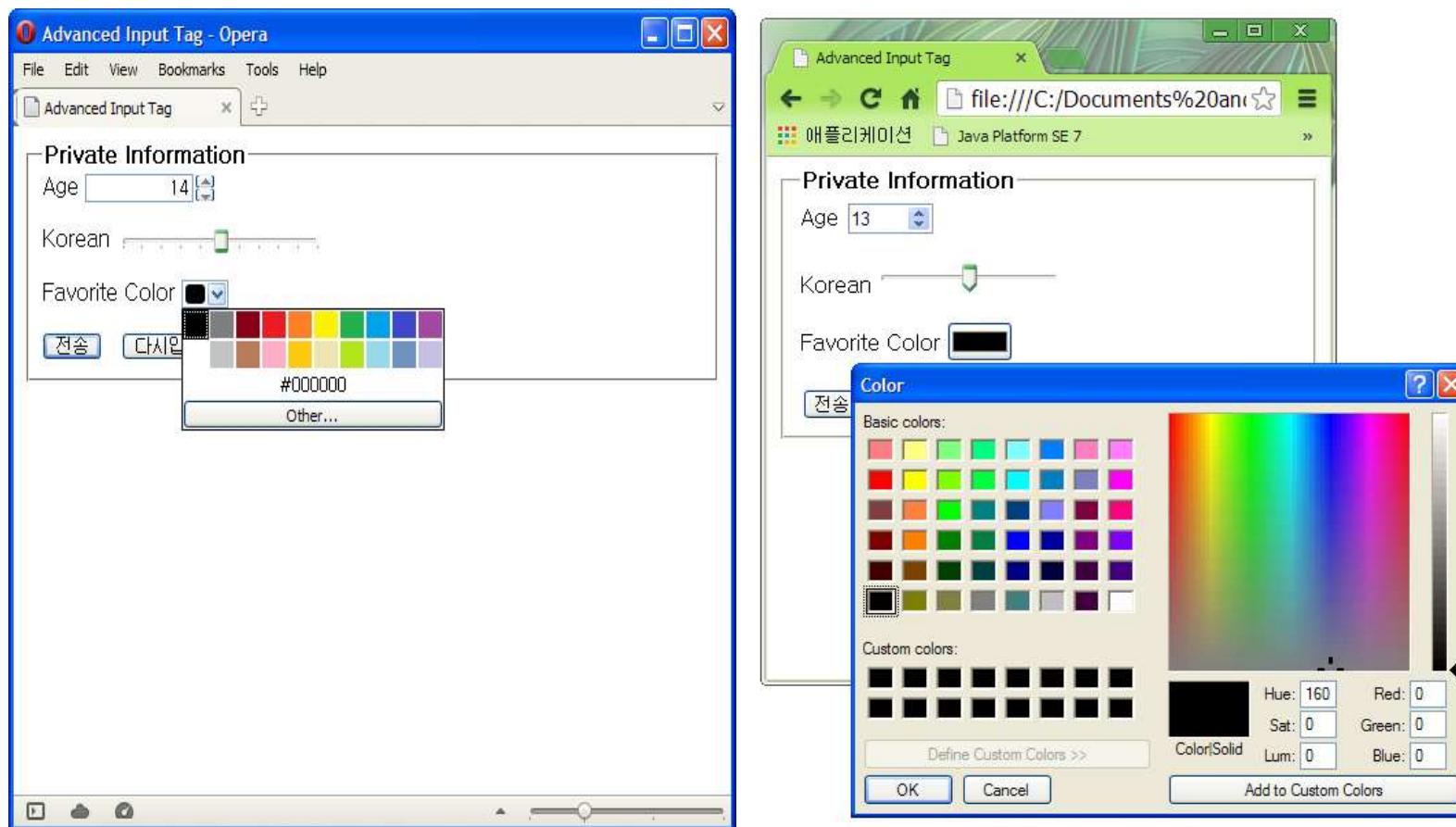
■ Files

- input4.html

Lab7 : input4.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Advanced Input Tag</title>
5  </head>
6  <body>
7      <form>
8          <fieldset>
9              <legend><b>Private Information</b></legend>
10             <label for="myage">Age</label>
11             <input type="number" id="myage" placeholder="나이"
12               required="required" min="10" max="80"/><br /><br />
13
14             <label for="mykorean">Korean</label>
15             <input type="range" id="mykorean" placeholder="국어점수"
16               required="required" min="0" max="100"/><br /><br />
17
18             <label for="mycolor">Favorite Color</label>
19             <input type="color" id="mycolor" required="required"/><br /><br />
20
21             <input type="submit" value="전송" />&nbsp;&nbsp;
22             <input type="reset" value="다시입력" />
23         </form>
24     </body>
25 </html>
```

Lab7 : Result



<button>

- Defines a clickable button.

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



<button> (Cont.)

■ Attributes

- **autofocus**



- Specifies that a button should automatically get focus when the page loads.

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



<button> (Cont.)

■ Attributes

- **disabled**

- Specifies that a button should be disabled.

```
1 <button type="button" disabled>Click Me!</button>
```



<button> (Cont.)

■ Attributes

- **form**

 new

- Specifies one or more forms the button belongs to.

```
1 <form action="demo_form.asp" method="get" id="nameform">
2 First name: <input type="text" name="fname" /><br>
3 Last name: <input type="text" name="lname" /><br>
4 </form>
5
6 <p>The button below is outside the form element, but still part of the form.</p>
7
8 <button type="submit" form="nameform" value="Submit">Submit</button>
```

First name:
Last name:

The button below is outside the form element, but still part of the form.

<button> (Cont.)

■ Attributes

- **formaction**



- Specifies where to send the form-data when a form is submitted.
- Only for type="submit".

```
1  <form action="demo_form.asp" method="get">
2  First name: <input type="text" name="fname" /><br>
3  Last name: <input type="text" name="lname" /><br>
4  <button type="submit">Submit</button><br>
5  <button type="submit" formaction="demo_admin.asp">Submit as admin</button>
6  </form>
```

First name:

Last name:

<button> (Cont.)

■ Attributes

- **formenctype**



- Specifies how form-data should be encoded before sending it to a server.
- Only for type="submit".
- **application/x-www-form-urlencoded | multipart/form-data | text/plain**

```
1  <form action="demo_post_enctype.asp" method="post">
2  Name: <input type="text" name="fname" value="Steve Refsnes" /><br>
3  <button type="submit" >Submit with character encoding</button>
4  <button type="submit" formenctype="text/plain">Submit without character encoding</button>
5  </form>
```

A screenshot of a web browser displaying a form. The form contains a text input field with the placeholder "Name:" and the value "Steve Refsnes". Below the input field are two buttons: "Submit with character encoding" and "Submit without character encoding". The "Submit with character encoding" button is standard grey, while the "Submit without character encoding" button has a blue border and a darker blue background.

<button> (Cont.)

■ Attributes

- **formmethod**



- Specifies how to send the form-data (which HTTP method to use).
- Only for type="submit"
- **get | post**

```
1 <form action="demo_form.asp" method="get">
2 First name: <input type="text" name="fname" /><br>
3 Last name: <input type="text" name="lname" /><br>
4 <button type="submit" >Submit</button>
5 <button type="submit" formmethod="post" formaction="demo_post.asp">Submit using POST</button>
6 </form>
```

A screenshot of a web form. It contains two text input fields labeled "First name:" and "Last name:", each with a corresponding empty input box. Below the input boxes are two buttons: a standard "Submit" button and a "Submit using POST" button. The entire form is enclosed in a light gray border.

<button> (Cont.)

■ Attributes

- **formnovalidate**



- Specifies that the form-data should not be validated on submission.
- Only for type="submit".

```
1 <form action="demo_form.asp" method="get">
2 E-mail: <input type="email" name="userid" /><br>
3 <button type="submit" >Submit</button><br>
4 <button type="submit" formnovalidate>Submit without validation</button>
5 </form>
```

A screenshot of a web page showing a form. The form contains a label "E-mail:" followed by an input field. Below the input field are two buttons: a standard "Submit" button and a second "Submit" button with a yellow border and a darker yellow background, labeled "Submit without validation".

E-mail:

<button> (Cont.)

■ Attributes

- **formtarget**



- Specifies where to display the response after submitting the form.
- Only for type="submit".
- **_blank | _self | _parent | _top | framename**

```
1  <form action="demo_form.asp" method="get">
2  □ First name: <input type="text" name="fname" /><br>
3  □ Last name: <input type="text" name="lname" /><br>
4  <button type="submit" >Submit</button>
5  <button type="submit" formtarget="_blank">Submit to a new window/tab</button>
6  </form>
```

The image shows a screenshot of a web browser displaying a form. The form contains two text input fields labeled "First name" and "Last name". Below the input fields are two buttons: one labeled "Submit" and another labeled "Submit to a new window/tab". The "Submit to a new window/tab" button is highlighted with a red border, indicating it is the active or selected button.

<button> (Cont.)

■ Attributes

- **name**

- Specifies a name for the button.

- **type**

- Specifies the type of button.

- **button | reset | submit**

- **value**

- Specifies an initial value for the button

```
1  <form action="demo_form.asp" method="get">
2  Choose your favorite subject:
3  <button name="subject" type="submit" value="HTML">HTML</button>
4  <button name="subject" type="submit" value="CSS">CSS</button>
5  </form>
```

Choose your favorite subject:

Lab8 : Button Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

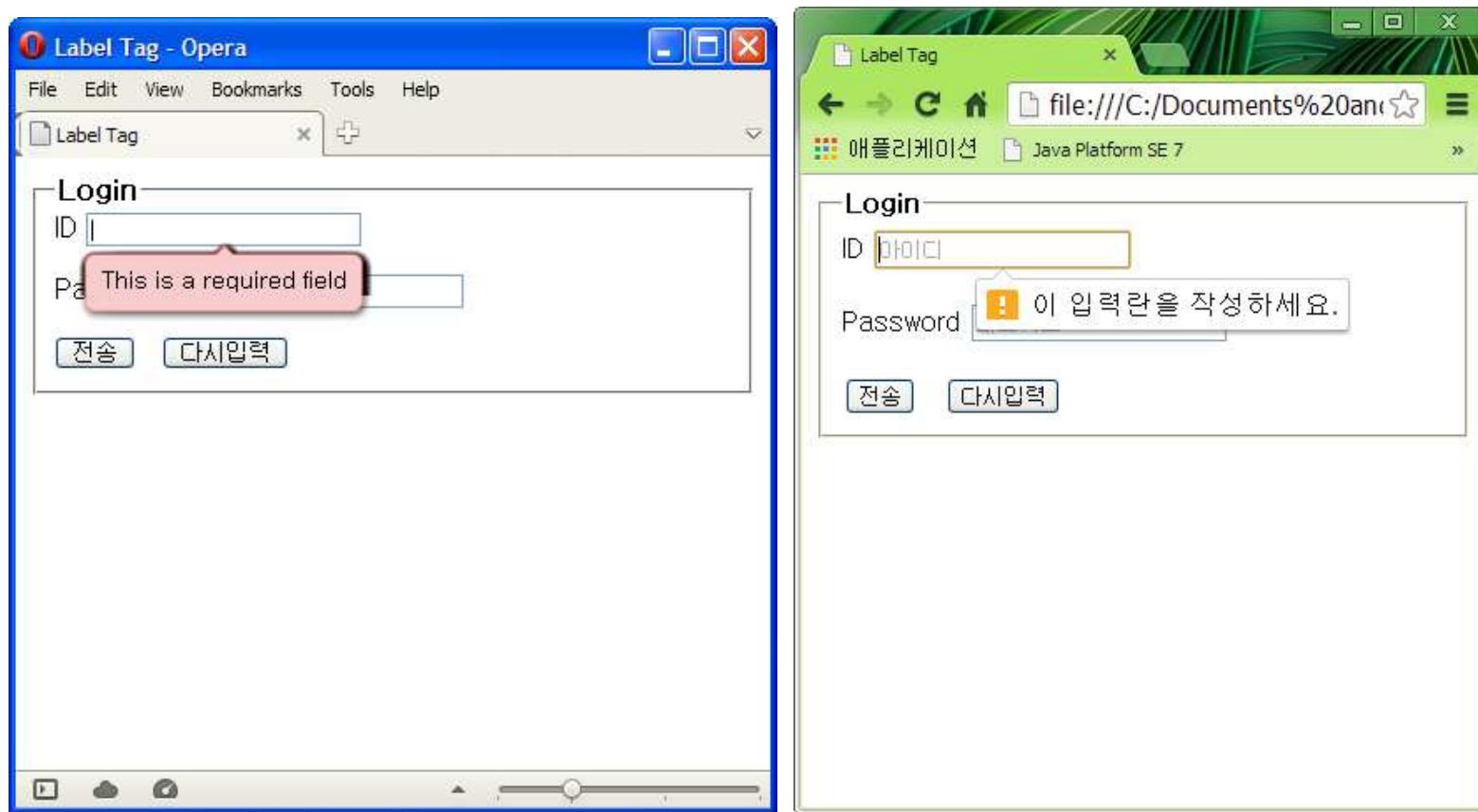
■ Files

- button.html

Lab8 : button.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Label Tag</title>
5  </head>
6  <body>
7      <form>
8          <fieldset>
9              <legend><b>Login</b></legend>
10             <label for="id">ID</label>
11             <input type="text" id="id" placeholder="아이디"
12             required="required" /><br /><br />
13
14             <label for="passwd">Password</label>
15             <input type="password" id="passwd" placeholder="패스워드"
16             required="required" /><br /><br />
17
18             <button type="submit">전송</button>&nbsp;&nbsp;
19             <button type="reset">다시입력</b>
20         </fieldset>
21     </form>
22 </body>
23 </html>
```

Lab8 : Result



<select>

- Is used to create a drop-down list.
- Attributes

- **multiple**

- Specifies that multiple options can be selected at once.

```
1 <form action="form_action.asp">
2 <select name="cars" multiple>
3   <option value="volvo">Volvo</option>
4   <option value="saab">Saab</option>
5   <option value="opel">Opel</option>
6   <option value="audi">Audi</option>
7 </select>
8 <input type="submit">
9 </form>
```



<select> (Cont.)

■ Attributes

- **name**

- Defines a name for the drop-down list.

```
1  <form action="demo_form.asp">
2  <select name="cars">
3      <option value="volvo">Volvo</option>
4      <option value="saab">Saab</option>
5      <option value="opel">Opel</option>
6      <option value="audi">Audi</option>
7  </select>
8  <input type="submit">
9  </form>
```



The image shows a screenshot of a web browser. On the left, there is a code editor window displaying the provided HTML code. On the right, there is a screenshot of a web page. The page contains a form with a dropdown menu and a submit button. The dropdown menu is open, showing four options: "Volvo", "Saab", "Opel", and "Audi". The option "Volvo" is highlighted or selected. To the right of the dropdown menu is a rectangular button with the Korean characters "제출" (Submit) on it.

<select> (Cont.)

■ Attributes

- **size**

- Defines the number of visible options in a drop-down list.

```
1   <select size="3">
2    <option value="volvo">Volvo</option>
3    <option value="saab">Saab</option>
4    <option value="opel">Opel</option>
5    <option value="audi">Audi</option>
6  </select>
```



<select> (Cont.)

■ Attributes

- **autofocus**



- Specifies that the drop-down list should automatically get focus when the page loads.

```
1   <select autofocus>
2  |   <option value="volvo">Volvo</option>
3  |   <option value="saab">Saab</option>
4  |   <option value="opel">Opel</option>
5  |   <option value="audi">Audi</option>
6  | </select>
```

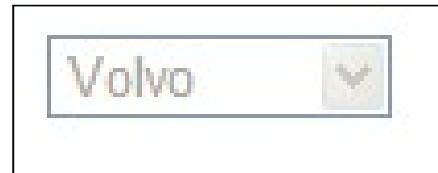
<select> (Cont.)

■ Attributes

- **disabled**

- Specifies that a drop-down list should be disabled.

```
1  <select disabled>
2    <option value="volvo">Volvo</option>
3    <option value="saab">Saab</option>
4    <option value="mercedes">Mercedes</option>
5    <option value="audi">Audi</option>
6  </select>
```



<select> (Cont.)

■ Attributes

- **form**



- Defines one or more forms the select field belongs to.

```
1  <form action="demo_form.asp" id="carform">
2    Firstname:<input type="text" name="fname">
3    <input type="submit">
4  </form>
5  <br>
6  <select name="carlist" form="carform">
7    <option value="volvo">Volvo</option>
8    <option value="saab">Saab</option>
9    <option value="opel">Opel</option>
10   <option value="audi">Audi</option>
11 </select>
```

The screenshot shows a web page with a form. At the top, there is a text input field labeled "Firstname:" followed by a blue "제출" (Submit) button. Below it is a dropdown menu with the option "Volvo" selected. The rest of the page is white space.

<select> (Cont.)

■ Attributes

- **required**



- Specifies that the user is required to select a value before submitting the form.

```
1 <form action="demo_form.asp">
2 <select required>
3   <option value="volvo">Volvo</option>
4   <option value="saab">Saab</option>
5   <option value="mercedes">Mercedes</option>
6   <option value="audi">Audi</option>
7 </select>
8 <input type="submit">
9 </form>
```

Lab9 : Select Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

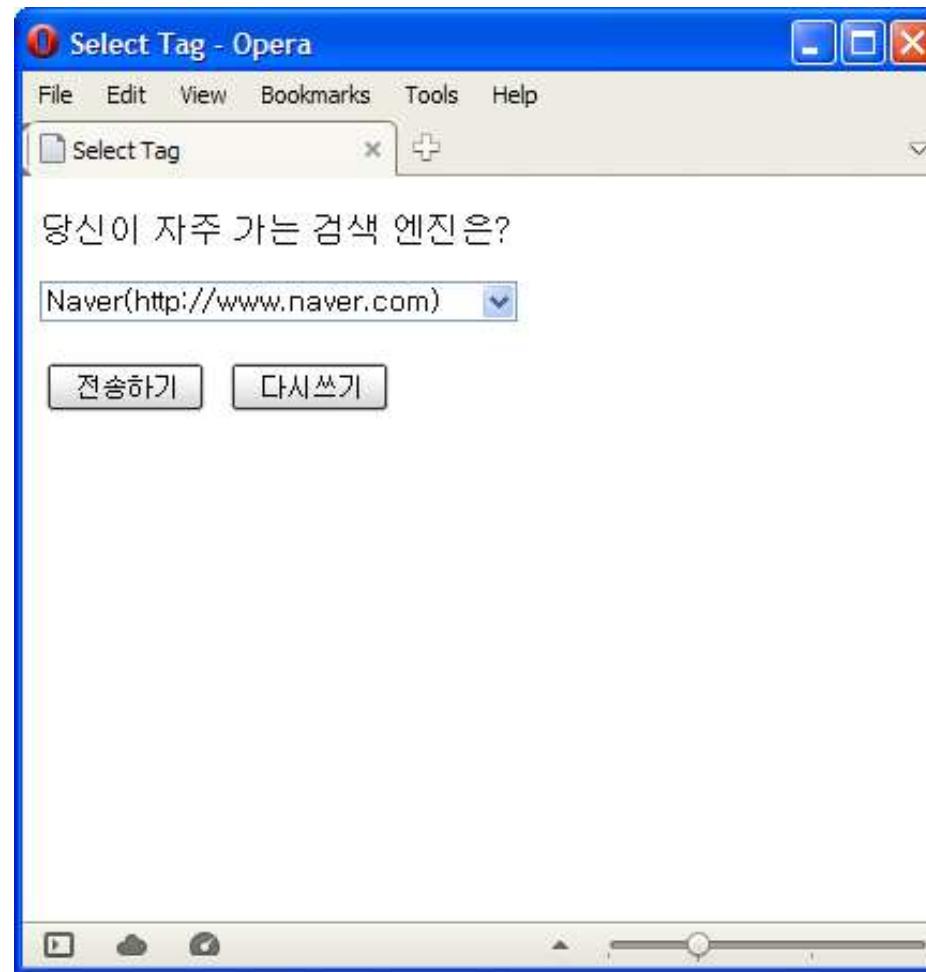
■ Files

- select.html
- images/submit.gif
- images/reset.gif

Lab9 : select.html

```
1  <!DOCTYPE html>
2  <html lang="ko">
3      <head>
4          <title>Select Tag</title>
5      </head>
6      <body>
7          <form>
8              <p>당신이 자주 가는 검색 엔진은?</p>
9              <select name="search">
10                 <option value="naver">Naver(http://www.naver.com)
11                 <option value="daum">Daum(http://www.daum.net)
12                 <option value="google">Google(http://www.google.com)
13                 <option value="nate">Nate(http://www.nate.com)
14                 <option value="yahoo">Yahoo(http://www.yahoo.com)
15                 <option value="zum">zum(http://www.zum.co.kr)
16             </select>
17             <br /><br />
18             <input type="image" src="images/submit.gif" border="0">
19             <input type="image" src="images/reset.gif" border="0">
20         </form>
21     </body>
22 </html>
```

Lab9 : Result



Lab10 : Select Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

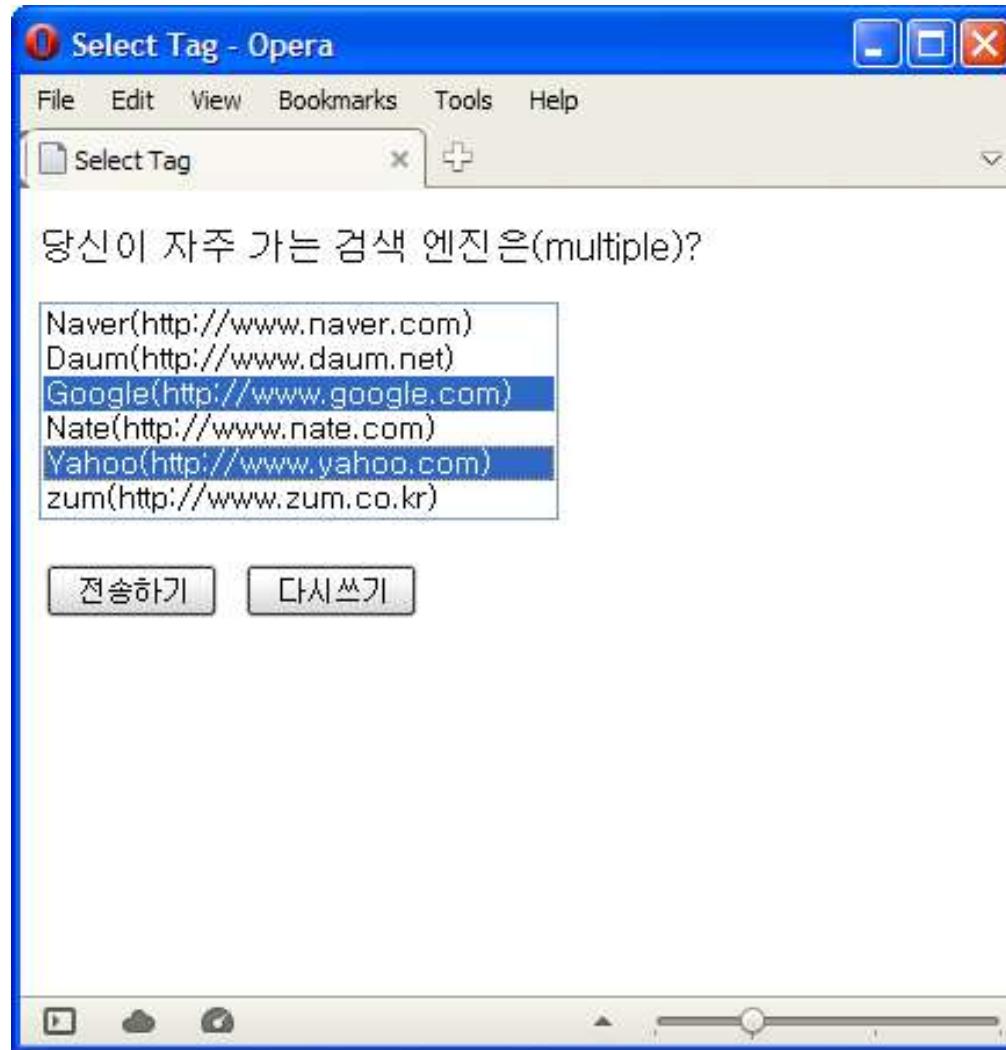
■ Files

- select1.html
- images/submit.gif
- images/reset.gif

Lab10 : select1.html

```
1  <!DOCTYPE html>
2  <html lang="ko">
3  <head>
4      <title>Select Tag</title>
5  </head>
6  <body>
7      <form>
8          <p>당신이 자주 가는 검색 엔진은(multiple)?</p>
9          <select name="search" size="6" multiple>
10         <option value="naver">Naver(http://www.naver.com)
11         <option value="daum">Daum(http://www.daum.net)
12         <option value="google">Google(http://www.google.com)
13         <option value="nate">Nate(http://www.nate.com)
14         <option value="yahoo">Yahoo(http://www.yahoo.com)
15         <option value="zum">zum(http://www.zum.co.kr)
16     </select>
17     <br /><br />
18     <input type="image" src="images/submit.gif" border="0">
19     <input type="image" src="images/reset.gif" border="0">
20 </form>
21 </body>
22 </html>
```

Lab10 : Result

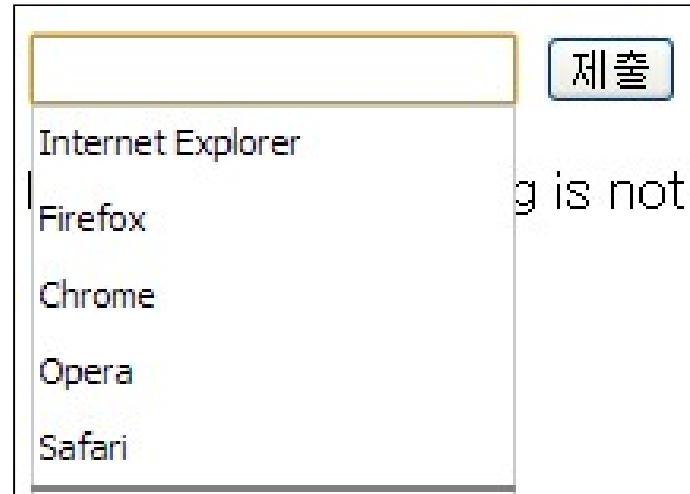


<datalist>



- Specifies a list of pre-defined options for an <input> element.

```
1  <form action="demo_form.asp" method="get">
2    <input list="browsers" name="browser">
3    <datalist id="browsers">
4      <option value="Internet Explorer">
5      <option value="Firefox">
6      <option value="Chrome">
7      <option value="Opera">
8      <option value="Safari">
9    </datalist>
10   <input type="submit">
11 </form>
```



Lab11 : Data List Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

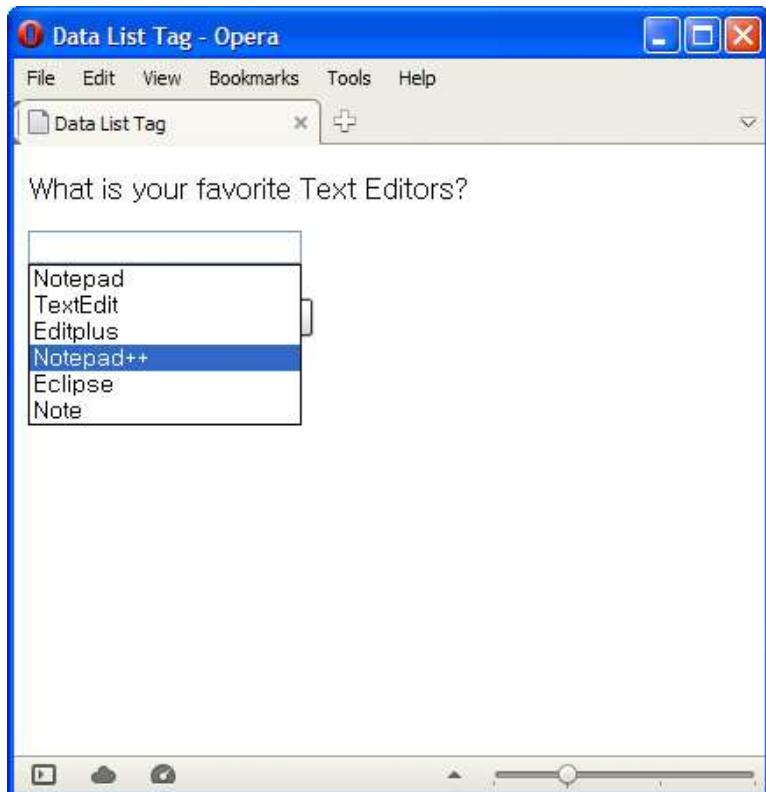
■ Files

- datalist.html
- images/submit.gif
- images/reset.gif

Lab11 : datalist.html

```
1  <!DOCTYPE html>
2  <html lang="ko">
3  <head>
4      <title>Data List Tag</title>
5  </head>
6  <body>
7      <form>
8          <p>What is your favorite Text Editors?</p>
9          <input type="text" name="editor" list="texteditors" />
10         <datalist id="texteditors">
11             <option value="Notepad" />
12             <option value="TextEdit" />
13             <option value="Editplus" />
14             <option value="Notepad++" />
15             <option value="Eclipse" />
16             <option value="Note" />
17         </datalist>
18         <br /><br />
19         <input type="image" src="images/submit.gif" border="0">
20         <input type="image" src="images/reset.gif" border="0">
21     </form>
22 </body>
23 </html>
```

Lab11 : Result



<option>

- Defines an option in a select list.
- Attributes

- **disabled**

- Specifies that an option should be disabled.

```
1  <select>
2    <option value="volvo" disabled>Volvo</option>
3    <option value="saab">Saab</option>
4    <option value="vw">VW</option>
5    <option value="audi">Audi</option>
6  </select>
```



<option> (Cont.)

■ Attributes

- **label**

- Specifies a shorter label for an option.

```
1 1 <select>
2 2   <option label="Volvo">Volvo (Latin for "I roll")</option>
3 3   <option label="Saab">Saab (Swedish Aeroplane AB)</option>
4 4   <option label="Mercedes">Mercedes (Mercedes-Benz)</option>
5 5   <option label="Audi">Audi (Auto Union Deutschland Ingolstadt)</option>
6 6 </select>
```



<option> (Cont.)

■ Attributes

- **selected**

- Specifies that an option should be pre-selected when the page loads.

```
1  <select>
2    <option value="volvo">Volvo</option>
3    <option value="saab">Saab</option>
4    <option value="vw">VW</option>
5    <option value="audi" selected>Audi</option>
6  </select>
```



<option> (Cont.)

■ Attributes

● **value**

- Specifies the value to be sent to a server.

```
1  <form action="demo_form.asp">
2  <select name="cars">
3      <option value="volvo">Volvo XC90</option>
4      <option value="saab">Saab 95</option>
5      <option value="mercedes">Mercedes SLK</option>
6      <option value="audi">Audi TT</option>
7  </select>
8  <input type="submit" value="Submit">
9
10
11  <p>Choose a car, and click the "Submit" button to send input to the server.</p>
```



The screenshot shows a dropdown menu with the following options:

- Volvo XC90
- Volvo XC90
- Saab 95** (highlighted)
- Mercedes SLK
- Audi TT

Below the dropdown menu, there is a "Submit" button. To the right of the dropdown menu, the text "and click the "Submit" button to send input to the server." is displayed.

<optgroup>

- Is used to group related options in a drop-down list.

```
1  <select>
2  <optgroup label="Swedish Cars">
3    <option value="volvo">Volvo</option>
4    <option value="saab">Saab</option>
5  </optgroup>
6  <optgroup label="German Cars">
7    <option value="mercedes">Mercedes</option>
8    <option value="audi">Audi</option>
9  </optgroup>
10 </select>
```



<optgroup> (Cont.)

■ Attributes

- **disabled**

- Specifies that an option-group should be disabled.

- **label**

- Specifies a label for an option-group

```
1  <select>
2    <optgroup label="Swedish Cars">
3      <option value="volvo">Volvo</option>
4      <option value="saab">Saab</option>
5    </optgroup>
6    <optgroup label="German Cars" disabled>
7      <option value="mercedes">Mercedes</option>
8      <option value="audi">Audi</option>
9    </optgroup>
10   </select>
```



Lab12 : Option & OptGroup Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

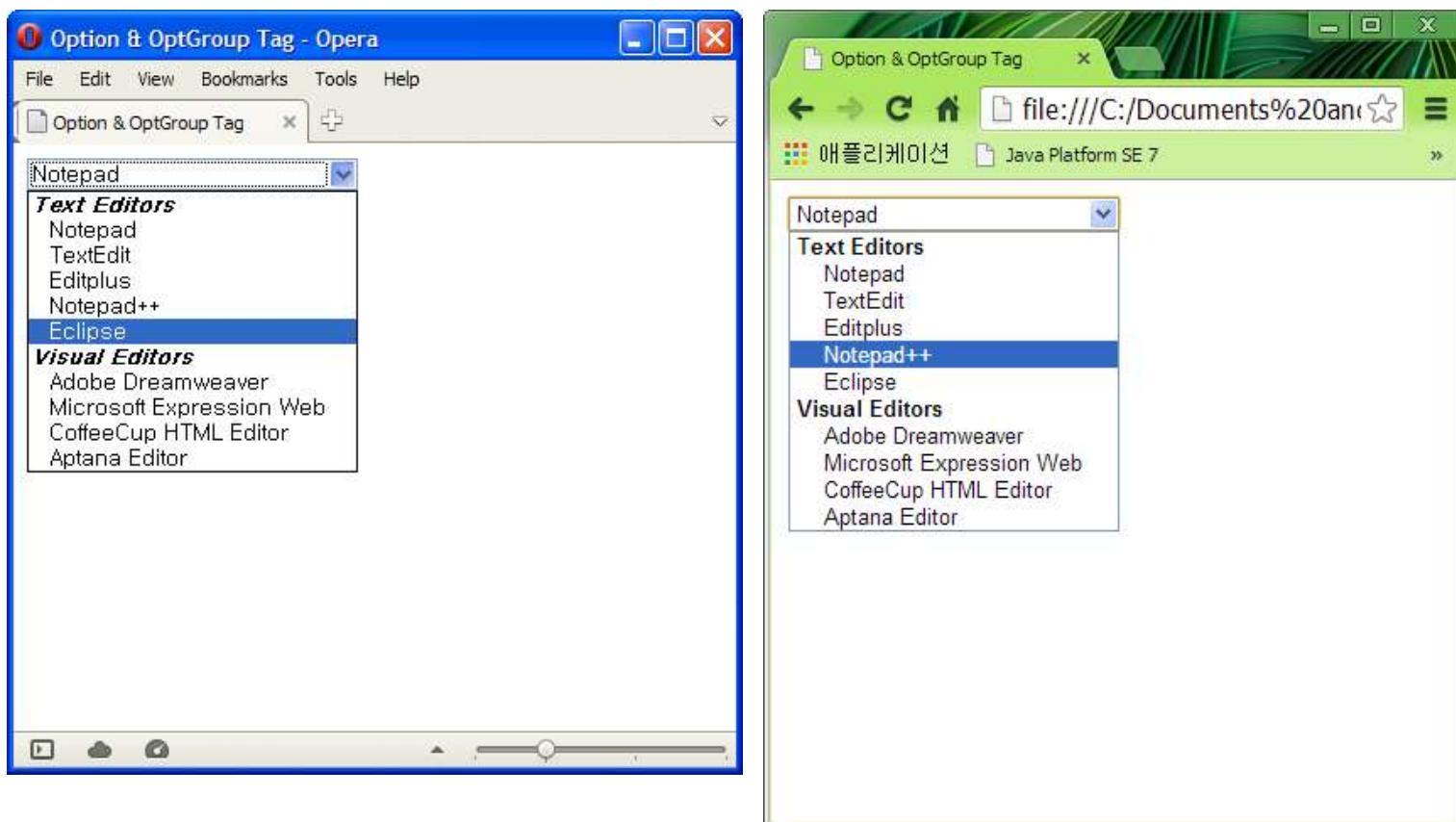
■ Files

- optgroup.html

Lab12 : optgroup.html

```
1  <!DOCTYPE html>
2  <html lang="ko">
3  <head>
4  <title>Option & OptGroup Tag</title>
5  </head>
6  <body>
7  <form>
8  <select>
9  <optgroup label="Text Editors">
10 <option value="Notepad">Notepad
11 </option>
12 <option value="TextEdit">TextEdit
13 </option>
14 <option value="Editplus">Editplus
15 </option>
16 <option value="Notepad++">Notepad++
17 </option>
18 <option value="Eclipse">Eclipse
19 </option>
20 </optgroup>
21 <optgroup label="Visual Editors">
22 <option value="Adobe Dreamweaver">
23 Adobe Dreamweaver</option>
24 <option value="Microsoft Expression Web">
25 Microsoft Expression Web</option>
26 <option value="CoffeeCup HTML Editor">
27 CoffeeCup HTML Editor</option>
28 <option value="Aptana Editor">
29 Aptana Editor</option>
30 </optgroup>
31 </select>
32 </form>
33 </body>
34 </html>
```

Lab12 : Result



<textarea>

- Defines a multi-line text input control.
- A text area can hold an unlimited number of characters, and the text renders in a fixed-width font (usually *Courier*).
- Attributes
 - **cols**
 - Specifies the visible width of a text area.
 - **rows**
 - Specifies the visible number of lines in a text area.

<textarea> (Cont.)

```
1  ⊂<textarea rows="4" cols="50">
2  At w3schools.com you will learn how to make a website.
3  We offer free tutorials in all web development technologies.
4  </textarea>
```

At w3schools.com you will learn how to make a website. We offer free tutorials in all web development technologies.

<textarea> (Cont.)

■ Attributes

- **name**

- Specifies a name for a text area.

- **readonly**

- Specifies that a text area should be read-only

```
1  <textarea rows="4" cols="50" readonly>
2  At w3schools.com you will learn how to make a website.
3  We offer free tutorials in all web development technologies.
4  </textarea>
```

At w3schools.com you will learn how to make a website. We offer free tutorials in all web development technologies.

<textarea> (Cont.)

■ Attributes

- **autofocus**



- Specifies that a text area should automatically get focus when the page loads.

```
1 <textarea rows="4" cols="50" autofocus>
2 At w3schools.com you will learn how to make a website.
3 We offer free tutorials in all web development technologies.
4 </textarea>
```

At w3schools.com you will learn how to make a website. We offer free tutorials in all web development technologies.

<textarea> (Cont.)

■ Attributes

- **form**

 new

- Specifies one or more forms the text area belongs to.

```
1   <form action="demo_form.asp" id="usrform">
2  |   Name: <input type="text" name="username">
3  |   <input type="submit">
4  |   </form>
5  |   <br>
6   <textarea rows="4" cols="50" name="comment" form="usrform">
7  |   Enter text here...</textarea>
```



The screenshot shows a web page with a form. At the top, there is a text input field labeled "Name:" with a placeholder "Enter text here..." and a blue "제출" (Submit) button. Below the input field is a large text area with the placeholder "Enter text here...".

<textarea> (Cont.)

■ Attributes

- **maxlength**



- Specifies the maximum number of characters allowed in the text area.

```
1 <textarea rows="4" cols="50" maxlength="50">
2 Enter text here...</textarea>
```

Enter text here...

<textarea> (Cont.)

■ Attributes

- **placeholder**



- Specifies a short hint that describes the expected value of a text area.

```
1 Who are you?  
2 <textarea rows="4" cols="50" placeholder="Describe yourself here...">  
3 </textarea>
```

A screenshot of a web page. On the left, there is a question "Who are you?". To its right is a large text input field. The input field has a placeholder text "Describe yourself here..." inside it. The entire input field is enclosed in a light gray border.

<textarea> (Cont.)

■ Attributes

- **required**



- Specifies that a text area is required/must be filled out.

```
1 <form action="demo_form.asp">
2 <textarea rows="4" cols="50" name="comment" required>
3 </textarea>
4 <input type="submit">
5 </form>
```



Note: The required attribute is not supported in IE and Safari.

<textarea> (Cont.)

■ Attributes

- **wrap**

 new

- Specifies how the text in a text area is to be wrapped when submitted in a form.

```
1 <form action="demo_form.asp">
2   <textarea rows="2" cols="20" name="usrtxt" wrap="hard">
3     At W3Schools you will find free Web-building tutorials.
4   </textarea>
5   <input type="submit">
6 </form>
```



Lab13 : TextArea Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- `textarea.html`

Lab13 : textarea.html

```
1  <!DOCTYPE html>
2  <html>
3  |  <head>
4  |  |  <title>TextArea Tag</title>
5  |  </head>
6  |  <body>
7  |  |  <form>
8  |  |  |  * 이름 : <input type="text" name="name" size="15" maxlength="8" />
9  |  |  |  <br /><br />
10 |  |  |  * Email : <input type="email" name="mail" size="15" maxlength="20" />
11 |  |  |  <br /><br />
12 |  |  |  * 남기고 싶은 말 :<br />
13 |  |  |  <textarea name="field" cols="50" rows="10"></textarea>
14 |  |  |  <br /><br />
15 |  |  |  <input type="image" src="images/submit.gif" border="0">
16 |  |  |  <input type="image" src="images/reset.gif" border="0">
17 |  |  </form>
18 |  </body>
19 </html>
```

Lab13 : Result

The image displays two side-by-side screenshots of a web browser window titled "TextArea Tag".

Left Screenshot (Opera): The browser has a blue title bar. The menu bar includes File, Edit, View, Bookmarks, Tools, and Help. A toolbar below the menu bar contains icons for back, forward, search, and other functions. The main content area shows a form with the following fields:

- * 이름 :
- * Email :
- * 남기고 싶은 말 :

At the bottom of the form are two buttons: "전송하기" (Send) and "다시쓰기" (Reuse).

Right Screenshot (Firefox): The browser has a green title bar. The menu bar includes File, Edit, View, Bookmarks, Tools, and Help. A toolbar below the menu bar includes icons for back, forward, search, and other functions. The main content area shows a form with the same fields as the left screenshot.

Both screenshots show the same form structure and button placement, demonstrating the consistency of the application's presentation across different browsers.

<keygen>



- Specifies a key-pair generator field used for forms.
- When the form is submitted, the private key is stored locally, and the public key is sent to the server.

<keygen> (Cont.)

■ Attributes

- **autofocus**



- Specifies that a <keygen> element should automatically get focus when the page loads.

```
1  <form action="demo_keygen.asp" method="get">
2    Username: <input type="text" name="usr_name">
3    Encryption: <keygen name="security" autofocus>
4    <input type="submit">
5  </form>
```

Username:	<input type="text"/>	Encryption:	<input type="button" value="2048(높은 등급)"/>	<input type="button" value="제출"/>
-----------	----------------------	-------------	--	-----------------------------------

<keygen> (Cont.)

■ Attributes

- **challenge**



- Specifies that the value of the <keygen> element should be challenged when submitted.

<keygen> (Cont.)

■ Attributes

- **disabled**

 new

- Specifies that a <keygen> element should be disabled.

```
1 <form action="demo_keygen.asp" method="get">
2   Username: <input type="text" name="usr_name">
3   Encryption: <keygen name="security" disabled>
4     <input type="submit">
5   </form>
```

Username:	<input type="text"/>	Encryption:	<input type="button" value="2048(높은 등급)"/>	<input type="button" value="제출"/>
-----------	----------------------	-------------	--	-----------------------------------

<keygen> (Cont.)

■ Attributes

- **form**



- Specifies one or more forms the <keygen> element belongs to.

```
1   <form action="demo_keygen.asp" method="get" id="secureform">
2    Username: <input type="text" name="usr_name">
3    <input type="submit">
4  </form>
5
6  <p>The keygen field below is outside the form element, but still part of the form.</p>
7   Encryption: <keygen name="security" form="secureform">
```

Username: 제출

The keygen field below is outside the form element, but still part of the form.

Encryption:

<keygen> (Cont.)

■ Attributes

- **keytype**



- Specifies the security algorithm of the key.
- **rsa | dsa | ec**

```
1 <form action="demo_keygen.asp" method="get">
2   Username: <input type="text" name="usr_name">
3   Encryption: <keygen name="security" keytype="rsa">
4     <input type="submit">
5 </form>
```

Username:	<input type="text"/>	Encryption:	<input type="button" value="2048(높은 등급)"/>	<input type="button" value="제출"/>
Note: The keygen tag is not supported in Internet Explorer.				
<input type="button" value="2048(높은 등급)"/>				
<input type="button" value="1024(중간 등급)"/>				

<keygen> (Cont.)

■ Attributes

- **name**



- Defines a name for the <keygen> element.

```
1 <form action="demo_keygen.asp" method="get">
2   Username: <input type="text" name="usr_name">
3   Encryption: <keygen name="security" keytype="rsa">
4     <input type="submit">
5 </form>
```

Username: Encryption:

<output>



- Represents the result of a calculation (like one performed by a script).
- Attributes

- **for**



- Specifies the relationship between the result of the calculation, and the elements used in the calculation

```
1 <form oninput="x.value=parseInt(a.value)+parseInt(b.value)">0
2   <input type="range" id="a" value="50">100
3   + <input type="number" id="b" value="50">
4   = <output name="x" for="a b"></output>
5 </form>
```

A screenshot of a web browser showing a simple form. It contains three inputs: a range slider with a green track and a blue slider handle set to 100, a text input field containing the number 50 with a yellow border, and a text input field containing the result 120 with a blue border. The text input fields for 50 and 120 have small upward and downward arrows to their right, indicating they are also range inputs.

<output> (Cont.)

■ Attributes

- **form**



- Specifies one or more forms the output element belongs to.

```
1  <form action="demo_form.asp" id="numform" oninput="x.value=parseInt(a.value)+parseInt(b.value)">0
2    <input type="range" id="a" name="a" value="50">100
3    +<input type="number" id="b" name="b" value="50">
4    <br><br>
5    <input type="submit">
6  </form>
7
8  <p>The output element below is outside the form, but still a part of it.</p>
9  <output form="numform" name="x" for="a b"></output>
```

The screenshot shows a web page with a form. At the top, there is a range input with a value of 100 and a text input next to it with a value of 50. Below the inputs, the text "The output element below is outside the form, but still a part of it." is displayed. At the bottom left, there is a button labeled "제출".

0 100 +

제출

The output element below is outside the form, but still a part of it.

<output> (Cont.)

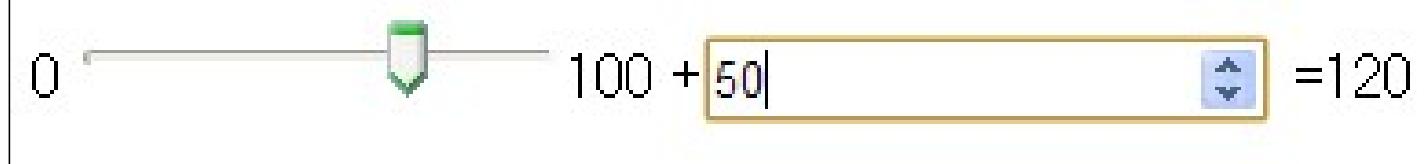
■ Attributes

- **name**

 new

- Specifies a name for the output element.

```
1 <form oninput="x.value=parseInt(a.value)+parseInt(b.value)">0
2   <input type="range" id="a" value="50">100
3   +<input type="number" id="b" value="50">
4   =<output name="x" for="a b"></output>
5 </form>
```



The screenshot shows a web page with a form. On the left is a range slider with a green arrow pointing right, currently set at 100. To its right is a text input field containing "50". To the right of the input field is an equals sign (=). To the right of the equals sign is an output element, which displays the result "120". Above the output element is a small blue box with up and down arrows, likely a button to refresh or calculate the result.

Lab14 : Output Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

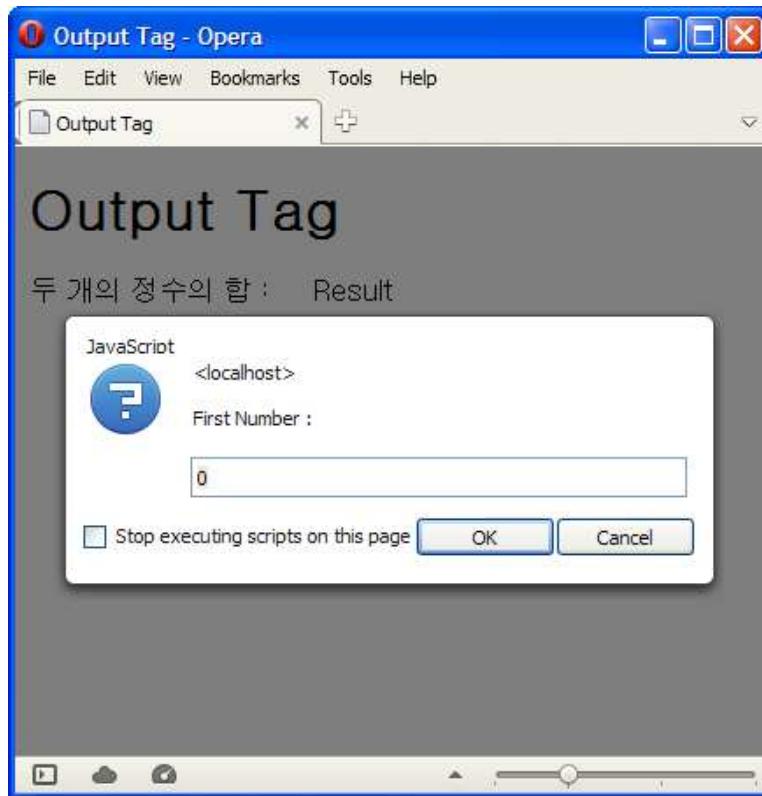
■ Files

- output.html

Lab14 : output.html

```
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title> Output Tag </title>
5          <meta charset="utf-8">
6          <script type="text/javascript">
7              function add(){
8                  var a = parseInt(prompt("First Number : ", 0));
9                  var b = parseInt(prompt("Second Number : ", 0));
10                 document.forms[0].result.value = a + b;
11             }
12         </script>
13     </head>
14     <body onload="add()">
15         <h1>Output Tag</h1>
16         <form>
17             <label>두 개의 정수의 합 : </label>
18             &nbsp;&nbsp;&nbsp;
19             <output name="result">Result</output>
20         </form>
21     </body>
22 </html>
```

Lab14 : Result



<progress>



- Represents the progress of a task.
- Attributes

- **max**



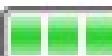
- Specifies how much work the task requires in total.

- **value**



- Specifies how much of the task has been completed.

```
1  Downloading progress:
2  <progress value="22" max="100">
3  </progress>
```

Downloading progress: 

Lab15 : Progress Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

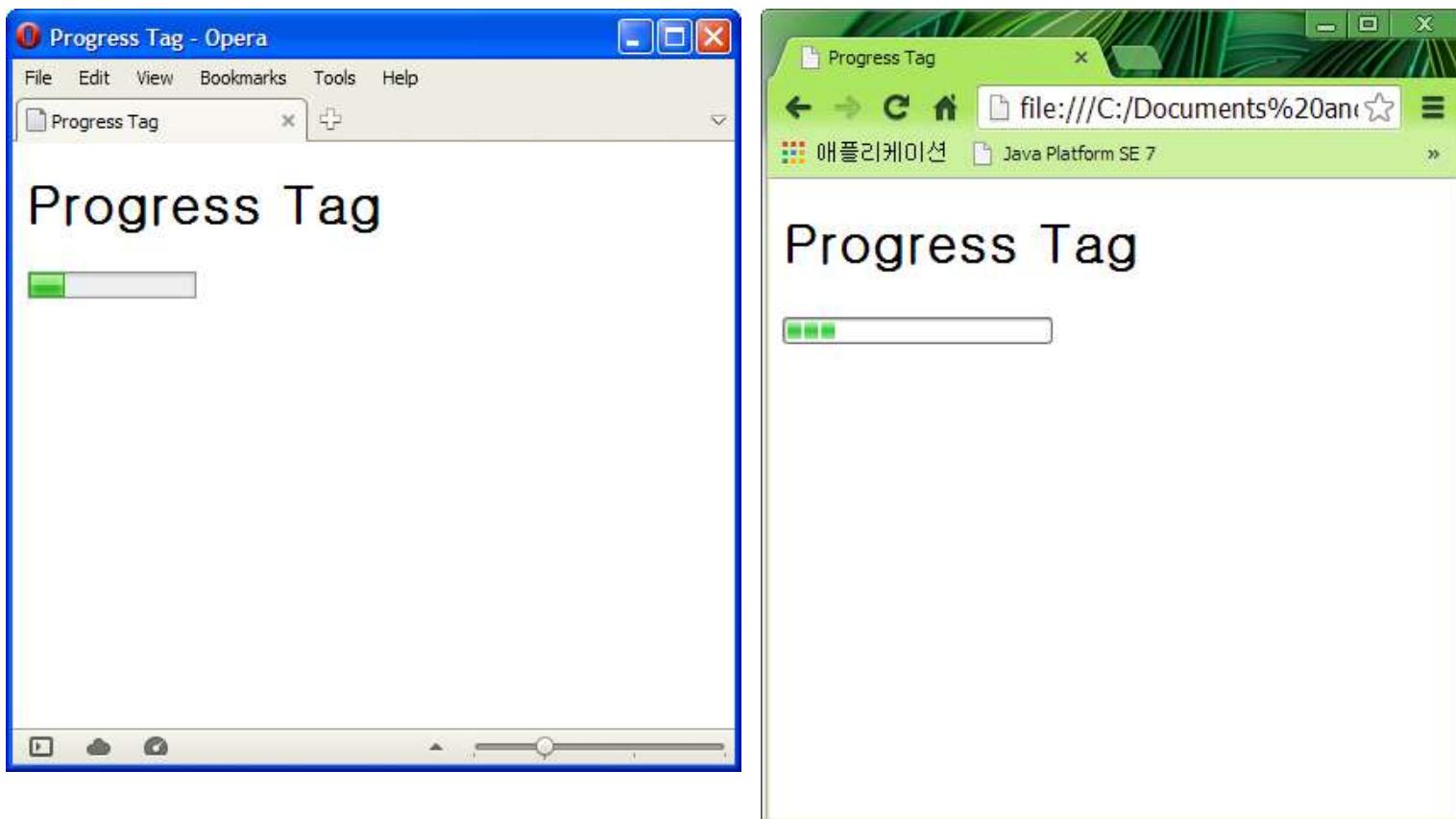
■ Files

- progress.html

Lab15 : progress.html

```
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title> Progress Tag </title>
5          <meta charset="utf-8">
6      </head>
7      <body>
8          <h1>Progress Tag</h1>
9          <progress value="22" max="100">
10         </progress>
11     </body>
12 </html>
```

Lab15 : Result



<meter>



- Defines a scalar measurement within a known range, or a fractional value.
- This is also known as a gauge.
- Examples: Disk usage, the relevance of a query result, etc.

<meter> (Cont.)

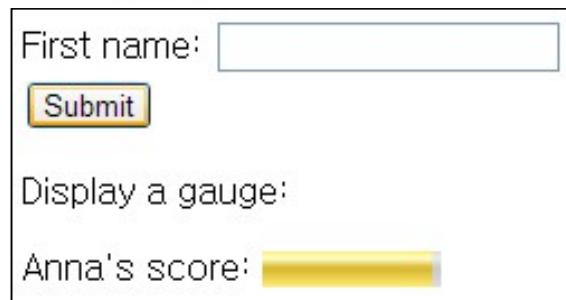
■ Attributes

- **form**



- Specifies one or more forms the <meter> element belongs to.

```
1  1<form action="demo_form.asp" method="get" id="form1">
2    First name: <input type="text" name="fname"><br>
3    <input type="submit" value="Submit">
4  </form>
5
6  <p>Display a gauge:</p>
7  <p>Anna's score:</p>
8  <input type="text" value="1234567890"/>
9  <input type="text" value="1234567890"/>
10 </p>
```



A screenshot of a web browser showing an HTML form. The form contains a text input field labeled "First name:" with the placeholder "Anna". Below it is a submit button labeled "Submit". A paragraph below the input field contains the text "Display a gauge:". Another paragraph below it contains the text "Anna's score:" followed by a meter element. The meter has a yellow progress bar indicating a value of 95, with the scale ranging from 0 to 100.

<meter> (Cont.)

■ Attributes

- **high**

• new

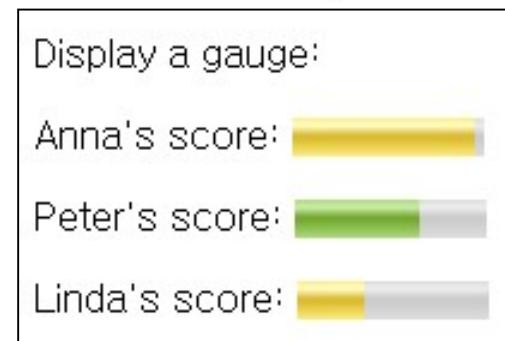
- Specifies the range that is considered to be a high value.

- **low**

• new

- Specifies the range that is considered to be a low value.

```
1 <p>Display a gauge:</p>
2 <p>Anna's score: <meter min="0" low="40" high="90" max="100" value="95"></meter></p>
3 <p>Peter's score: <meter min="0" low="40" high="90" max="100" value="65"></meter></p>
4 <p>Linda's score: <meter min="0" low="40" high="90" max="100" value="35"></meter></p>
```



<meter> (Cont.)

■ Attributes

- **max**

 new

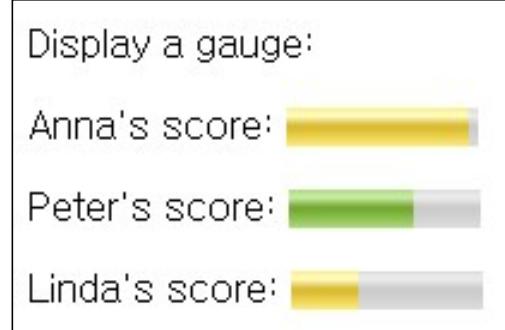
- Specifies the maximum value of the range.

- **min**

 new

- Specifies the minimum value of the range.

```
1 <p>Display a gauge:</p>
2 <p>Anna's score: <meter min="0" low="40" high="90" max="100" value="95"></meter></p>
3 <p>Peter's score: <meter min="0" low="40" high="90" max="100" value="65"></meter></p>
4 <p>Linda's score: <meter min="0" low="40" high="90" max="100" value="35"></meter></p>
```



<meter> (Cont.)

■ Attributes

- **optimum**



- Specifies what value is the optimal value for the gauge.

```
1 <p>Display a gauge:</p>
2 <p><meter value="0.3" high="0.9" low="0.1" optimum="0.5"></meter></p>
```



<meter> (Cont.)

■ Attributes

- **value**

 new

- Required.
- Specifies the current value of the gauge.

```
1 <p>Display a gauge:</p>
2 <p>Anna's score: <meter min="0" low="40" high="90" max="100" value="95"></meter></p>
3 <p>Peter's score: <meter min="0" low="40" high="90" max="100" value="65"></meter></p>
4 <p>Linda's score: <meter min="0" low="40" high="90" max="100" value="35"></meter></p>
```



Lab16 : Meter Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

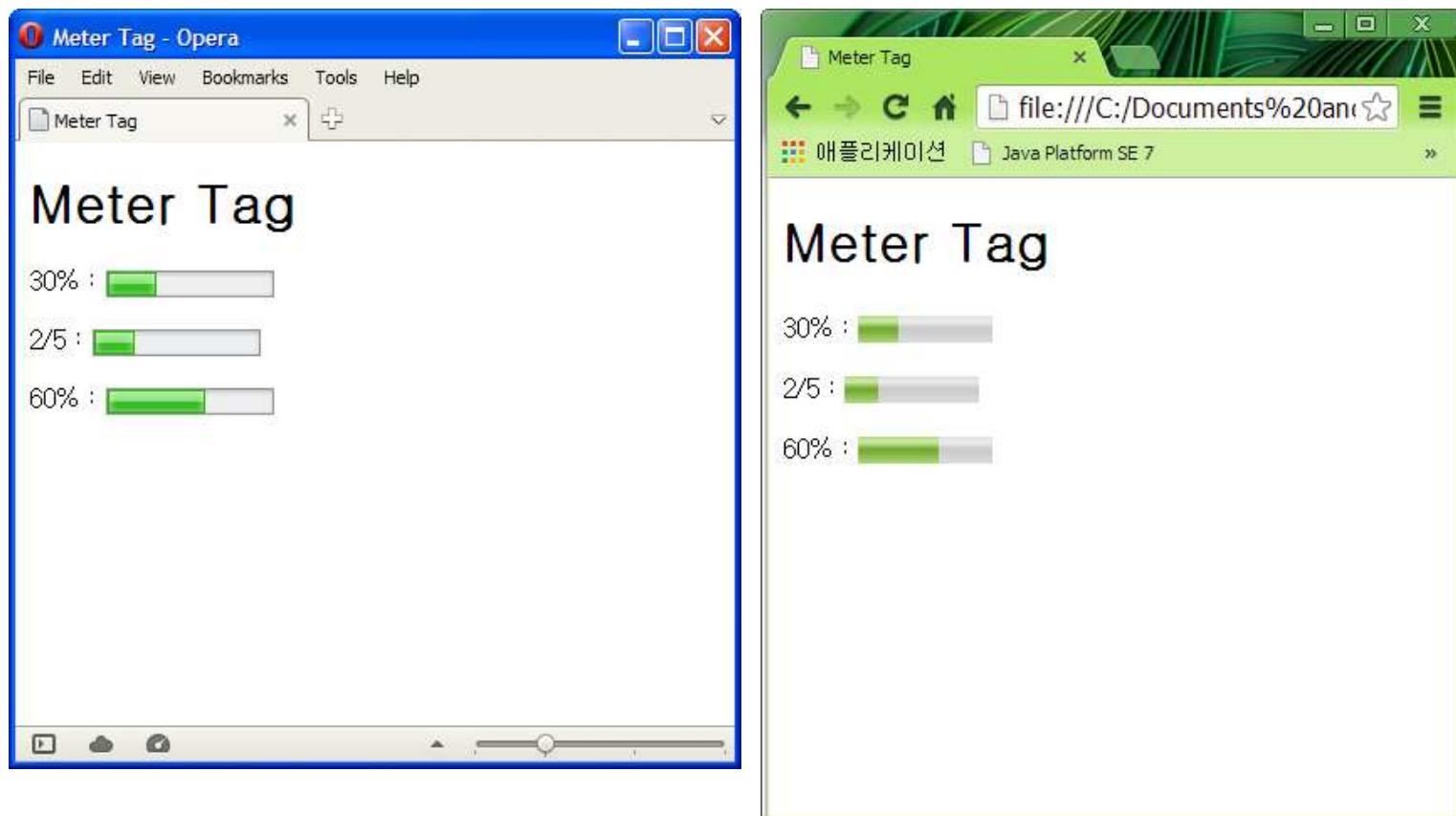
■ Files

- meter.html

Lab16 : meter.html

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title> Meter Tag </title>
5      <meta charset="utf-8">
6    </head>
7    <body>
8      <h1>Meter Tag</h1>
9      30% : <meter value="0.3">30%</meter>
10     <br /><br />
11     2/5 : <meter value="2" min="1" max="5">2/5</meter>
12     <br /><br />
13     60% : <meter value="0.6" high="0.9" low="0.1"
14       optimum="0.5">60%</meter><br /><br />
15
16    </body>
17 </html>
```

Lab16 : Result



Lab17 : Form Review

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- form.html

Lab17 : form

```
1  <!DOCTYPE html>
2  <html lang="ko">
3  <head>
4      <title> 추가된 폼컨트롤 요소들 </title>
5      <meta charset="utf-8">
6      <style type="text/css">
7          body{line-height: 2em; }
8      </style>
9  </head>
10
11 <body>
12 <form method="post" action="">
13     <label for="email">이메일 : </label>
14     <input type="email" id="email" name="email"
15         placeholder="example@domain.com" required /><br />
16     URL : <input type="url" autofocus autocomplete="off" /><br />
17     숫자 : <input type="number" min="1" max="10" step="2" value="5" />
18     <br />
19     range(범위) : <input type="range" min="1" max="5" step="1" />
20     <br />
21     date(년도-월-일) : <input type="date" min="2012-04-05" max="2012-04-20" />
22     <br />
23     month(년도-월) : <input type="month" /><br />
24     week(년도-주) : <input type="week" /><br />
25     time(시-분) : <input type="time" /><br />
26     datetime(날짜-시간) : <input type="datetime" /><br />
27     datetime-local(날짜-시간) : <input type="datetime-local" /><br />
28     color(색상을 적으면 16진수값으로 반화) : <input type="color" /><br />
29     search(검색상자) : <input type="search" />
30     <input type="submit" value="검색">
31 </form>
32 </body>
33 </html>
```

Lab17 : Result

추가된 폼컨트롤 요소들 - Opera

File Edit View Bookmarks Tools Help

추가된 폼컨트롤 요소들

이메일 : example@domain.com

URL :

숫자 : 5

range(범위) :

date(년도-월-일) :

month(년도-월) :

week(년도-주) :

time(시-분) :

datetime(날짜-시간) : : UTC

datetime-local(날짜-시간) : :

color(색상을 적으면 16진수값으로 반환) :

search(검색상자) : 검색

추가된 폼컨트롤 요소들

file:///C:/Documents%20and%20S

애플리케이션 Java Platform SE 7 배우고 익히는 즐... OLC

이메일 : example@domain.com

URL :

숫자 : 5

range(범위) :

date(년도-월-일) : 2012-04-일

month(년도-월) : ----년 --월

week(년도-주) : ----, --번째 주

time(시-분) : -- --:--

datetime(날짜-시간) :

datetime-local(날짜-시간) : 연도-월-일 -- --:--

color(색상을 적으면 16진수값으로 반환) :

search(검색상자) : 검색

Lab18 : Form Review

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- form1.html
- css/form.css

Lab18 : form1.html (1/4)

```
1  <!DOCTYPE html>
2  
3  
4      <title> html5에 추가된 폼컨트롤들 </title>
5      <meta charset="utf-8">
6      <link rel="stylesheet" href="css/form.css" />
7  
8
9  <body>
10 <form id="payment">
11 <fieldset>
12     <legend>로그인 정보</legend>
13     <ul>
14         <li><label for="id">아이디</label>
15         <input type="text" id="id" name="id" required autofocus /></li>
16         <li><label for="pwd">비밀번호</label>
17         <input type="password" id="pwd" name="pwd" required /></li>
18         <li><label for="pwd2">비밀번호 확인</label>
19         <input type="password" id="pwd2" name="pwd2" required /></li>
20     </ul>
21 </fieldset>
22
```

Lab18 : form1.html (2/4)

```
23  <fieldset>
24      <legend>개인 정보 입력</legend>
25      <ul>
26          <li><label for="name">이름</label>
27          <input type="text" id="name" name="name" placeholder="5자 미만 공백없이" /></li>
28          <li><label for="mail">메일주소</label>
29          <input type="email" id="mail" name="mail" placeholder="example@domain.com" /></li>
30          <li><label for="homeP">홈페이지</label>
31          <input type="url" id="homeP" name="homeP" placeholder="http://www.abcd.com" /></li>
32          <li><label for="telNum">전화번호</label>
33          <input type="tel" id="telNum" name="telNum" placeholder="02)1111-1111" /></li>
34          <li><label for="skill">코딩 숙련도(상,중,하)</label>
35          <input type="range" id="skill" name="skill" min="1" max="3" step="1" /></li>
36      </ul>
37  </fieldset>
38
```

Lab18 : form1.html (3/4)

```
39  <fieldset>
40      <legend>주문 내용</legend>
41      <ul>
42          <li><label for="pName">상품명</label>
43          <input type="text" id="pName" name="pName" readonly value="셔츠" /></li>
44          <li><label for="pColor">색상</label>
45          <input type="text" id="pColor" name="pColor" list="myColor" />
46          <datalist id="myColor">
47              <option value="black" label="검정색" />
48              <option value="white" label="회색" />
49              <option value="skyblue" label="하늘색" />
50          </datalist>
51      </li>
52      <li><label for="pNum">주문개수</label>
53          <input type="number" id="pNum" name="pNum" min="1" max="10" step="1" value="1" /></li>
54  </ul>
55 </fieldset>
56
```

Lab18 : form1.html (4/4)

```
57 <fieldset>
58   <legend>배송일</legend>
59   <ul>
60     <li>최소 배송일은 주말 및 공휴일을 제외하고 주문일 이후 3일입니다.</li>
61     <li><label for="pDate">원하는 배송일</label>
62       <input type="date" id="pDate" name="pDate" /></li>
63   </ul>
64 </fieldset>
65 <div>
66   <button type="submit">구매하기</button>
67 </div>
68 </form>
69 </body>
70 </html>
```

Lab18 : Result

html5에 추가된 품컨트롤들 - Opera

File Edit View Bookmarks Tools Help

html5에 추가된 품컨트롤... × +

Step1 : 로그인 정보

아이디

비밀번호

비밀번호 확인

Step2 : 개인 정보 입력

이름 5자 미만 금지

메일주소 example@domain.com

홈페이지 http://www.abcd.com

전화번호 02)1111-1111

코딩숙련도(상,중,하)

Step3 : 주문 내용

상품명 셔츠

색상

주문개수 1 [↑ ↓]

Step4 : 배송일

최소 배송일은 주말 및 공휴일을 제외하고 주문일 이후 3일입니다.

원하는 배송일

구매하기

html5에 추가된 품컨트롤들 x

← → C ⌛ file:///C:/Documents%20and%20Settings/Re ⌛ OLC

애플리케이션 Java Platform SE 7 배우고 싶어하는 즐... OLC

Step1 : 로그인 정보

아이디

비밀번호

비밀번호 확인

Step2 : 개인 정보 입력

이름 5자 미만 금지

메일주소 example@domain.com

홈페이지 http://www.abcd.com

전화번호 02)1111-1111

코딩숙련도(상,중,하)

Step3 : 주문 내용

상품명 셔츠

색상

주문개수 1 [↑ ↓]

Step4 : 배송일

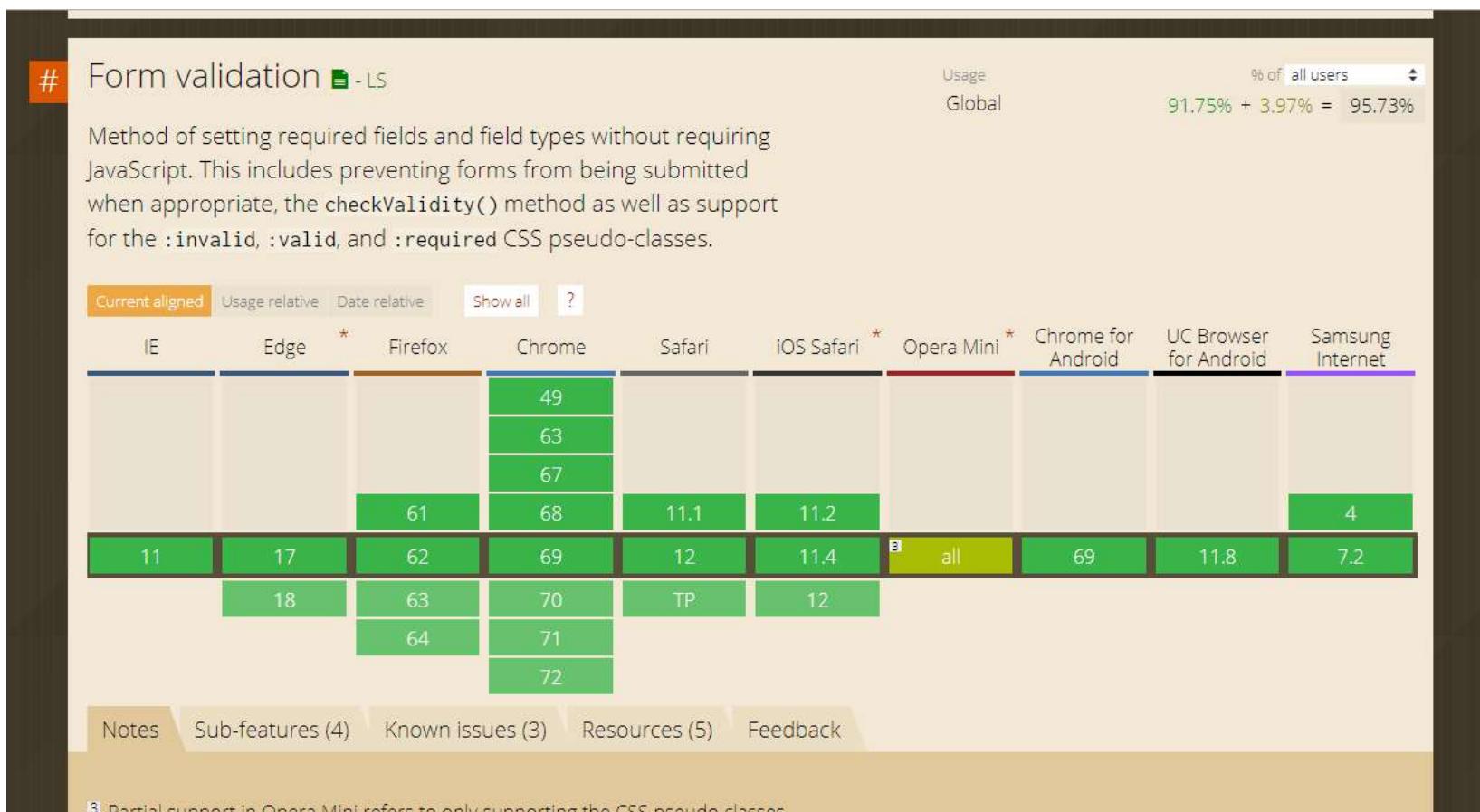
최소 배송일은 주말 및 공휴일을 제외하고 주문일 이후 3일입니다.

원하는 배송일 연도-월-일

구매하기

Form Validation

■ <https://caniuse.com/#search=Form%20validation>



Form Validation (Cont.)

- https://developer.mozilla.org/en-US/docs/Learn/HTML/Forms/Form_validation

The screenshot shows the MDN web docs page for 'Form data validation'. The page title is 'Form data validation'. The top navigation bar includes links for 'Technologies', 'References & Guides', 'Feedback', 'Sign in', and a search icon. Below the title, there are navigation links for 'Learn web development', 'Learning HTML: Guides and tutorials', and 'HTML forms'. There are also 'Previous' and 'Next' buttons, as well as a 'Languages' dropdown and edit/refresh buttons. The main content area starts with a brief introduction: 'Form validation helps us to ensure that users fill out forms in the correct format, making sure that submitted data will work successfully with our applications. This article will tell you what you need to know about form validation.' Below this, there are two callout boxes: one for 'Prerequisites' (computer literacy, understanding of HTML, CSS, and JavaScript) and one for 'Objective' (understanding form validation, its importance, and implementation). A sidebar on the left lists related topics like 'Getting started with the Web' and 'HTML – Structuring the Web'.

MDN web docs

Technologies ▾ References & Guides ▾ Feedback ▾ Sign in

Form data validation

Learn web development >
Learning HTML: Guides and tutorials >
HTML forms > Form data validation

← Previous Overview: Forms Next →

Form validation helps us to ensure that users fill out forms in the correct format, making sure that submitted data will work successfully with our applications. This article will tell you what you need to know about form validation.

Prerequisites: Computer literacy, a reasonable understanding of [HTML](#), [CSS](#), and [JavaScript](#).

Objective: To understand what form validation is, why it's important, and how to implement it.

Related Topics

- ▶ [Complete beginners start here!](#)
- ▶ [Getting started with the Web](#)
- HTML – Structuring the Web**
 - ▶ [Introduction to HTML](#)
 - ▶ [Multimedia and embedding](#)
 - ▶ [HTML tables](#)
 - ▼ [HTML forms](#)

EDIT THIS PAGE | DOWNLOAD SOURCE | HISTORY | EDITORS | FEEDBACK

Form Validation (Cont.)

- Helps us
 - to ensure that users fill out forms in the correct format, making sure that submitted data will work successfully with our applications.

Form Validation (Cont.)

- "*This field is required*" (you can't leave this field blank)
- "*Please enter your phone number in the format xxx-xxxx*" (it enforces three numbers followed by a dash, followed by four numbers)
- "*Please enter a valid e-mail address*" (if your entry is not in the format of "somebody@example.com")
- "*Your password needs to be between 8 and 30 characters long, and contain one uppercase letter, one symbol, and a number*"

Form Validation (Cont.)

- There are two different types of form validation.

- **Client-side validation**

- Is validation that occurs in the browser before the data has been submitted to the server.
- Is more user-friendly than server-side validation as it gives an instant response.

- **JavaScript**

- Validation is coded using JavaScript.
 - It is completely customizable.

- **Built-in form validation**

- Using HTML5 form validation features.
 - This generally does not require JavaScript.
 - Built-in form validation has better performance, but it is not as customizable as JavaScript.

Form Validation (Cont.)

- There are two different types of form validation:

- **Server-side validation**

- Is validation which occurs on the server after the data has been submitted.
 - Server-side code is used to validate the data before it is saved into the database.
 - If the data fails authentication, a response is sent back to the client to tell the user what corrections to make.

Using built-in form validation

- Using CSS pseudo-class.
- The **required** attribute.
- Validating against a regular expression.
- Constraining the length of your entries.
- Customized error messages.

Using built-in form validation (Cont.)

■ Using CSS pseudo-class.

- When an element is valid:

- The element matches the `:valid` CSS pseudo-class; this will let you apply a specific style to valid elements.
- If the user tries to send the data, the browser will submit the form, provided there is nothing else stopping it from doing so (e.g., JavaScript).

- When an element is invalid:

- The element matches the `:invalid` CSS pseudo-class; this will let you apply a specific style to invalid elements.
- If the user tries to send the data, the browser will block the form and display an error message.

Using built-in form validation (Cont.)

```
1  input:invalid {  
2      border: 2px dashed red;  
3  }  
4  
5  input:valid {  
6      border: 2px solid black;  
7  }
```

Using built-in form validation (Cont.)

■ The **required** attribute.

```
1 <form>
2   <label for="choose">Would you prefer a banana or cherry?</label>
3   <input id="choose" name="i_like" required>
4   <button>Submit</button>
5 </form>
```

Using built-in form validation (Cont.)

- Validating against a regular expression.

```
1 <form>
2   <label for="choose">Would you prefer a banana or a cherry?</label>
3   <input id="choose" name="i_like" required pattern="banana|cherry">
4   <button>Submit</button>
5 </form>
```

Using built-in form validation (Cont.)

■ Constraining the length of your entries.

```
1 <form>
2   <div>
3     <label for="choose">Would you prefer a banana or a cherry?</label>
4     <input id="choose" name="i_like" required minlength="6" maxlength="6">
5   </div>
6   <div>
7     <label for="number">How many would you like?</label>
8     <input type="number" id="number" name="amount" value="1" min="1" max="10">
9   </div>
10  <div>
11    <button>Submit</button>
12  </div>
13 </form>
```

Using built-in form validation (Cont.)

■ Customized error messages.

- The way this message is displayed depends on the browser.
- These automated messages have two drawbacks:
 - There is no standard way to change their look and feel with CSS.
 - They depend on the browser locale, which means that you can have a page in one language but an error message displayed in another language.

```
1 | var email = document.getElementById("mail");
2 |
3 | email.addEventListener("input", function (event) {
4 |   if (email.validity.typeMismatch) {
5 |     email.setCustomValidity("I expect an e-mail, darling!");
6 |   } else {
7 |     email.setCustomValidity("");
8 |   }
9 | });


```

Validating forms using JavaScript

- The HTML5 constraint validation API
 - If you want to take control over the look and feel of native error messages, or if you want to deal with browsers that do not support HTML's built-in form validation, you must use JavaScript.
 - More and more browsers now support the constraint validation API, and it's becoming reliable.
 - This API consists of a set of methods and properties available on each form element.

Validating forms using JavaScript (Cont.)

■ Properties

- **validationMessage**

- A localized message describing the validation constraints.

- **Validity**

- A **ValidityState** object describing the validity state of the element.

- **validity.customError**

- Returns **true** if the element has a custom error; **false** otherwise.

- **validity.patternMismatch**

- Returns **true** if the element's value doesn't match the provided pattern; **false** otherwise.

- If it returns **true**, the element will match the **:invalid** CSS pseudo-class.

Validating forms using JavaScript (Cont.)

■ Properties

- **validity.rangeOverflow**

- Returns **true** if the element's value is higher than the provided maximum; **false** otherwise.
- If it returns **true**, the element will match the **:invalid** and **:out-of-range** CSS pseudo-class.

- **validity.rangeUnderflow**

- Returns **true** if the element's value is lower than the provided minimum; **false** otherwise.
- If it returns **true**, the element will match the **:invalid** and **:out-of-range** CSS pseudo-class.

Validating forms using JavaScript (Cont.)

■ Properties

- **validity.stepMismatch**

- Returns **true** if the element's value doesn't fit the rules provided by the **step** attribute; otherwise **false**.
- If it returns **true**, the element will match the **:invalid** and **:out-of-range** CSS pseudo-class.

- **validity.maxLength**

- Returns **true** if the element's value is longer than the provided maximum length; else it will be **false**
- If it returns **true**, the element will match the **:invalid** and **:out-of-range** CSS pseudo-class.

Validating forms using JavaScript (Cont.)

■ Properties

- **validity.typeMismatch**

- Returns **true** if the element's value is not in the correct syntax; otherwise **false**.
- If it returns **true**, the element will match the **:invalid** CSS pseudo-class.

- **validity.valid**

- Returns **true** if the element's value has no validity problems; **false** otherwise.
- If it returns **true**, the element will match the **:valid** CSS pseudo-class; the **:invalid** CSS pseudo-class otherwise.

Validating forms using JavaScript (Cont.)

■ Properties

- **validity.valueMissing**

- Returns **true** if the element has no value but is a required field; **false** otherwise.
- If it returns **true**, the element will match the **:invalid** CSS pseudo-class.

- **willValidate**

- Returns **true** if the element will be validated when the form is submitted; **false** otherwise.

Validating forms using JavaScript (Cont.)

■ Methods

- **checkValidity()**

- Returns **true** if the element's value has no validity problems; **false** otherwise.
- If the element is invalid, this method also causes an invalid event at the element.

- **setCustomValidity(message)**

- Adds a custom error message to the element.
- If you set a custom error message, the element is considered to be invalid, and the specified error is displayed.

Lab19 : Using the constraint validation API

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- validitystate.html

Lab19 : Using the constraint validation API

The screenshot shows a web browser window titled "Validity State Demo" displaying a simple form. The form has three fields: "별명" (nickname) with value "1", "이메일" (email) with value "myemail", and "나이" (age) with value "23". Below the form is a note: "F12를 클릭하여 개발자도구의 console을 선택한 후 submit버튼을 눌러보자." (Click F12 to select the developer tools console, then press the submit button). To the right of the browser is an open developer tools window with the "Console" tab selected. The console lists numerous validation errors for the form fields, such as "text:nickname, 유효성 통과 여부 : false" and "email:myemail, 유효성 통과 여부 : false". The errors are grouped by field type and include various validation rules like "valueMissing", "typeMismatch", "patternMismatch", etc.

```
text:nickname, 유효성 통과 여부 : false
--valueMissing : false
--typeMismatch : false
--patternMismatch : true
--tooLong : false
--tooShort : false
--rangeUnderflow : false
--rangeOverflow : false
--stepMismatch : false
--badInput : false
--customError : false
--valid : false
email:myemail, 유효성 통과 여부 : false
--valueMissing : true
--typeMismatch : false
--patternMismatch : false
--tooLong : false
--tooShort : false
--rangeUnderflow : false
--rangeOverflow : false
--stepMismatch : false
--badInput : false
--customError : false
--valid : false
number:myage, 유효성 통과 여부 : false
--valueMissing : false
--typeMismatch : false
--patternMismatch : false
--tooLong : false
--tooShort : false
--rangeUnderflow : false
--rangeOverflow : false
--stepMismatch : true
```

Lab20 : Custom Validation

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- custom_validity.html

Lab20 : Custom Validation

