HTML5 New Input Types

HTML5 has several new input types for forms. These new features allow better input control and validation.

This chapter covers the new input types:
- color
- date
- datetime
- datetime-local
- email
- month
- number
- range
- search
- tel
- time
- url
- week

Input Type: color

The color type is used for input fields that should contain a color.

Example

Select a color from a color picker:
Select your favorite color: <input type="color" name="favcolor">

Example

<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp">
 *Select your favorite color: <input type="color" name="favcolor">
*
 <input type="submit">
</form>

</body>
</html>

Input Type: date

The date type allows the user to select a date.

Example

Define a date control:
Birthday: <input type="date" name="bday">

Example
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp">
 Birthday: <input type="date" name="bday">
 <input type="submit">
</form>

</body>
</html>

Input Type: datetime

The datetime-local type allows the user to select a date and time (no time zone).

Example
Define a date and time control (no time zone):
Birthday (date and time): <input type="datetime-local" name="bdaytime">

Example
<!DOCTYPE html>
<html>
<body>

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

</form>

</body>
</html>

Input Type: email

The email type is used for input fields that should contain an e-mail address.

Example

Define a field for an e-mail address (will be automatically validated when submitted):
E-mail: <input type="email" name="email">

Example

<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp">
 E-mail: <input type="email" name="email">
 <input type="submit">
</form>

<p>Note: type="email" is not supported in Internet Explorer 9 and earlier versions.</p>

</body>
</html>

Input Type: month

The month type allows the user to select a month and year.

Example
Define a month and year control (no time zone):
Birthday (month and year): <input type="month" name="bdaymonth">

Example
<!DOCTYPE html>
<html>

<body>
<form action="demo_form.asp">
  Birthday (month and year): <input type="month" name="bdaymonth">
  <input type="submit">
</form>
</body>
</html>

Input Type: number

The number type is used for input fields that should contain a numeric value.
You can also set restrictions on what numbers are accepted

Example
Define a numeric field (with restrictions):
Quantity (between 1 and 5): <input type="number" name="quantity" min="1" max="5">

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
Quantity (between 1 and 5): <input type="number" name="quantity" min="1" max="5">
 <input type="submit">
</form>
<p>Note: type="number" is not supported in Internet Explorer 9 and earlier versions.</p>
</body>
</html>

Input Type: range

The range type is used for input fields that should contain a value from a range of numbers.
You can also set restrictions on what numbers are accepted.

Example

Define a control for entering a number whose exact value is not important (like a slider control):
<input type="range" name="points" min="1" max="10">

Example
<!DOCTYPE html>
<html>

<body>
<form action="demo_form.asp" method="get">
Points: 0<input type="range" name="points" min="1" max="10">10
<input type="submit">
</form>
<p>Note: type="range" is not supported in Internet Explorer 9 and earlier versions.</p>
</body>
</html>

Use the following attributes to specify restrictions:

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

Input Type: search
The search type is used for search fields (a search field behaves like a regular text field).

Example
Define a search field (like a site search, or Google search):
Search Google: <input type="search" name="googlesearch">

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
 *Search Google: <input type="search" name="googlesearch">
*
 <input type="submit">
</form>

</body>
</html>

Input Type: tel

Example
Define a field for entering a telephone number:
Telephone: <input type="tel" name="usrtel">

Example

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```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  Telephone: <input type="tel" name="usrtel"><br>
<input type="submit">
</form>
</body>
</html>
```

Input Type: time

The time type allows the user to select a time.

Example
Define a control for entering a time (no time zone):
Select a time: <input type="time" name="usr_time">

Example
```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  Select a time: <input type="time" name="usr_time">
  <input type="submit">
</form>
</body>
</html>
```

Input Type: url
The url type is used for input fields that should contain a URL address.
The value of the url field is automatically validated when the form is submitted.

Example
Define a field for entering a URL:
Add your homepage: <input type="url" name="homepage">
Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
Add your homepage: <input type="url" name="homepage">

```
<input type="submit">
</form>
<p><b>Note:</b> The type="url" is not supported in Internet Explorer 9 and earlier versions.</p>
</body>
</html>
```

Input Type: week

The week type allows the user to select a week and year.

Example

Define a week and year control (no time zone):
Select a week: <input type="week" name="week_year">

Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
Select a week: <input type="week" name="year_week">
<input type="submit">
</form>
</body>
</html>
```

HTML5 New Form Elements

HTML5 has the following new form elements:
- <datalist>
- <keygen>
- <output>

HTML5 <datalist> Element
- The <datalist> element specifies a list of pre-defined options for an <input> element.
- The <datalist> element is used to provide an "autocomplete" feature on <input> elements. Users will see a drop-down list of pre-defined options as they input data.
- Use the <input> element's list attribute to bind it together with a <datalist> elements.

Example

An <input> element with pre-defined values in a <datalist>:

<input list="browsers">
<datalist id="browsers">
　<option value="Internet Explorer">
　<option value="Firefox">
　<option value="Chrome">
　<option value="Opera">
　<option value="Safari">
　</datalist>

Example

<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp" method="get">

<input list="browsers" name="browser">
<datalist id="browsers">
　<option value="Internet Explorer">
　<option value="Firefox">
　<option value="Chrome">
　<option value="Opera">
　<option value="Safari">
</datalist>
<input type="submit">
</form>

<p>Note: The datalist tag is not supported in Internet Explorer 9 and earlier versions, or in Safari.</p>

</body>
</html>

HTML5<keygen> Element

- The purpose of the <keygen> element is to provide a secure way to authenticate users.
- The <keygen> tag specifies a key-pair generator field in a form.
- When the form is submitted, two keys are generated, one private and one public.

- The private key is stored locally, and the public key is sent to the server. The public key could be used to generate a client certificate to authenticate the user in the future.

Example
A form with a keygen field:
<form action="demo_keygen.asp" method="get">
Username: <input type="text" name="usr_name">
Encryption: <keygen name="security">
<input type="submit">
</form>

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_keygen.asp" method="get">
Username: <input type="text" name="usr_name">
Encryption: <keygen name="security">
<input type="submit">
</form>
</body>
</html>

HTML5Element
The element represents the result of a calculation (like one performed by a script).

Example
Perform a calculation and show the result in an element:
<form oninput="x.value=parseInt(a.value)+parseInt(b.value)">0
<input type="range" id="a" value="50">100 +
<input type="number" id="b" value="50">=
</form>

Example
<!DOCTYPE html>
<html>
<body>
<form oninput="x.value=parseInt(a.value)+parseInt(b.value)">0
<input type="range" id="a" value="50">100 +
<input type="number" id="b" value="50">=

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<output name="x" for="a b"></output>
</form>
</body>
</html>

HTML5 New Form Elements
Tag   Description
<datalist>   Specifies a list of pre-defined options for an <input> element
<keygen>   Specifies a key-pair generator field in a form
<output>   Represents the result of a calculation
HTML5 New Form Attributes

HTML5 has several new attributes for <form> and <input>.

New attributes for <form>:
   • autocomplete
   • novalidate

New attributes for <input>:
   • autocomplete
   • autofocus
   • form
   • formaction
   • formenctype
   • formmethod
   • formnovalidate
   • formtarget
   • height and width
   • list
   • min and max
   • multiple
   • pattern (regexp)
   • placeholder
   • required
   • step

<form>/<input> autocomplete Attribute

The autocomplete attribute specifies whether a form or input field should have autocomplete on or off.

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When autocomplete is on, the browser automatically complete values based on values that the user has entered before.

Example

An HTML form with autocomplete on (and off for one input field):
```
<form action="demo_form.asp" autocomplete="on">
  First name:<input type="text" name="fname"><br>
  Last name: <input type="text" name="lname"><br>
  E-mail: <input type="email" name="email" autocomplete="off"><br>
  <input type="submit">
</form>
```

Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp" autocomplete="on">
  First name:<input type="text" name="fname"><br>
  Last name: <input type="text" name="lname"><br>
  E-mail: <input type="email" name="email" autocomplete="off"><br>
  <input type="submit">
 </form>
<p>Fill in and submit the form, then reload the page to see how autocomplete works.</p>
<p>Notice that autocomplete is "on" for the form, but "off" for the e-mail field.</p>
</body>
</html>
```

<form> novalidate Attribute
The novalidate attribute is a boolean attribute.
When present, it specifies that the form-data (input) should not be validated when submitted.

Example
Indicates that the form is not to be validated on submit:
```
<form action="demo_form.asp" novalidate>
  E-mail: <input type="email" name="user_email">
  <input type="submit">
</form>
```

Example
```
<!DOCTYPE html>
```

```
<html>
<body>
<form action="demo_form.asp" novalidate>
E-mail: <input type="email" name="user_email">
<input type="submit">
</form>
<p><strong>Note:</strong> The novalidate attribute of the form tag is not supported in Internet
Explorer 9 and earlier versions, or in Safari.</p>
</body>
</html>
```

<input> autofocus Attribute

The autofocus attribute is a boolean attribute.

When present, it specifies that an <input> element should automatically get focus when the page loads.

Example

Let the "First name" input field automatically get focus when the page loads:
First name:<input type="text" name="fname" autofocus>

Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  First name:<input type="text" name="fname" autofocus><br>
  Last name: <input type="text" name="lname"><br>
  <input type="submit">
</form>
<p><strong>Note:</strong> The autofocus attribute of the input tag is not supported in Internet
Explorer 9 and earlier versions.</p>
</body>
</html>
```

<input>form Attribute

The form attribute specifies one or more forms an <input> element belongs to.

Example

An input field located outside the HTML form (but still a part of the form):
```
<form action="demo_form.asp" id="form1">
  First name: <input type="text" name="fname"><br>
  <input type="submit" value="Submit">
</form>
```

Last name: <input type="text" name="lname" form="form1">

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp" id="form1">
First name: <input type="text" name="fname">
<input type="submit" value="Submit">
</form>
<p>The "Last name" field below is outside the form element, but still part of the form.</p>
Last name: <input type="text" name="lname" form="form1">
</body>
</html>

<input> formenctype Attribute
The formenctype attribute specifies how the form-data should be encoded when submitting it to the server (only for forms with method="post")
The formenctype attribute overrides the enctype attribute of the <form> element.

Example
Send form-data that is default encoded (the first submit button), and encoded as "multipart/form-data" (the second submit button):
<form action="demo_post_enctype.asp" method="post">
  First name: <input type="text" name="fname">
  <input type="submit" value="Submit">
  <input type="submit" formenctype="multipart/form-data"
  value="Submit as Multipart/form-data">
</form>

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_post_enctype.asp" method="post">
  First name: <input type="text" name="fname">
  <input type="submit" value="Submit">
  <input type="submit" formenctype="multipart/form-data" value="Submit as Multipart/form-data">
</form>
<p>Note: The formenctype attribute of the input tag is not supported in Internet Explorer 9 and earlier versions.</p>

</body>
</html>

<ins>\<input\> formmethod Attribute</ins>

The formmethod attribute defines the HTTP method for sending form-data to the action URL.
The formmethod attribute overrides the method attribute of the \<form\> element.

Example

The second submit button overrides the HTTP method of the form:

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

Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp" method="get">
  First name: <input type="text" name="fname"><br>
  Last name: <input type="text" name="lname"><br>
  <input type="submit" value="Submit">
  <input type="submit" formmethod="post" formaction="demo_post.asp" value="Submit using
POST">
</form>
<p><strong>Note:</strong> The formmethod attribute of the input tag is not supported in Internet
Explorer 9 and earlier versions.</p>
</body>
</html>
```

<ins>\<input\> formnovalidate Attribute</ins>

The novalidate attribute is a boolean attribute.
When present, it specifies that the \<input\> element should not be validated when submitted.
The formnovalidate attribute overrides the novalidate attribute of the \<form\> element.

Example

A form with two submit buttons (with and without validation):

```
<form action="demo_form.asp">
```

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E-mail: <input type="email" name="userid">
 <input type="submit" value="Submit">
 <input type="submit" formnovalidate value="Submit without validation">
</form>

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
 E-mail: <input type="email" name="userid">
 <input type="submit" value="Submit">
 <input type="submit" formnovalidate value="Submit without validation">
</form>
<p>Note: The formnovalidate attribute of the input tag is not supported in Internet
Explorer 9 and earlier versions, or in Safari.</p>
</body>
</html>

<input>formtarget Attribute
The formtarget attribute specifies a name or a keyword that indicates where to display the response that
is received after submitting the form.
The formtarget attribute overrides the target attribute of the <form> element.

Example
A form with two submit buttons, with different target windows:
<form action="demo_form.asp">
 First name: <input type="text" name="fname">
 Last name: <input type="text" name="lname">
 <input type="submit" value="Submit as normal">
 <input type="submit" formtarget="_blank"
 value="Submit to a new window">
</form>

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
 First name: <input type="text" name="fname">

Last name: <input type="text" name="lname">
 <input type="submit" value="Submit as normal">
 <input type="submit" formtarget="_blank" value="Submit to a new window/tab">
</form>
<p>Note: The formtarget attribute of the input tag is not supported in Internet Explorer 9 and earlier versions.</p>
</body>
</html>

<input> height and width Attributes
The height and width attributes specify the height and width of an <input> element.

Example
Define an image as the submit button, with height and width attributes:
<input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  First name: <input type="text" name="fname">
  Last name: <input type="text" name="lname">
  <input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
</form>
<p>Note: The input type="image" sends the X and Y coordinates of the click that activated the image button.</p>
</body>
</html>

<input> list Attribute
The list attribute refers to a <datalist> element that contains pre-defined options for an <input> element.

Example
An <input> element with pre-defined values in a <datalist>:
<input list="browsers">
<datalist id="browsers">
  <option value="Internet Explorer">
  <option value="Firefox">
  <option value="Chrome">

```
 <option value="Opera">
 <option value="Safari">
</datalist>
```

Example
```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp" method="get">
<input list="browsers" name="browser">
<datalist id="browsers">
  <option value="Internet Explorer">
  <option value="Firefox">
  <option value="Chrome">
  <option value="Opera">
  <option value="Safari">
</datalist>
<input type="submit">
</form>
<p><b>Note:</b> The datalist tag is not supported in Internet Explorer 9 and earlier versions, or in Safari.</p>
</body>
</html>
```

<input> min and max Attributes
The min and max attributes specify the minimum and maximum value for an <input> element.

Example
<input> elements with min and max values:
Enter a date before 1980-01-01:
```
<input type="date" name="bday" max="1979-12-31">
```
Enter a date after 2000-01-01:
```
<input type="date" name="bday" min="2000-01-02">
```
Quantity (between 1 and 5):
```
<input type="number" name="quantity" min="1" max="5">
```

Example
<!DOCTYPE html>

```
<html>
<body>
<form action="demo_form.asp">
Enter a date before 1980-01-01:
  <input type="date" name="bday" max="1979-12-31"><br>
Enter a date after 2000-01-01:
  <input type="date" name="bday" min="2000-01-02"><br>
Quantity (between 1 and 5):
  <input type="number" name="quantity" min="1" max="5"><br>
<input type="submit">
</form>
<p><strong>Note:</strong> The max and min attributes of the input tag is not supported in Internet
Explorer 9 and earlier versions, or in Firefox.</p>
<p><strong>Note:</strong> The max and min attributes will not work for dates and time in Internet
Explorer 10, since IE 10 does not support these input types.</p>
</body>
</html>
```

<input> multiple Attribute

The multiple attribute is a boolean attribute.

When present, it specifies that the user is allowed to enter more than one value in the <input> element.

Example

A file upload field that accepts multiple values:
Select images: <input type="file" name="img" multiple>

Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  Select images: <input type="file" name="img" multiple>
  <input type="submit">
</form>
<p>Try selecting more than one file when browsing for files.</p>
<p><strong>Note:</strong> The multiple attribute of the input tag is not supported in Internet Explorer
9 and earlier versions.</p>
</body>
</html>
```

<input> pattern Attribute

The pattern attribute specifies a regular expression that the <input> element's value is checked against.

Example

An input field that can contain only three letters (no numbers or special characters):
Country code: <input type="text" name="country_code" pattern="[A-Za-z]{3}" title="Three letter country code">

Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  Country code: <input type="text" name="country_code" pattern="[A-Za-z]{3}" title="Three letter
country code">
  <input type="submit">
</form>
<p><strong>Note:</strong> The pattern attribute of the input tag is not supported in Internet Explorer
9 and earlier versions, or in Safari.</p>
</body>
</html>
```

<input> placeholder Attribute

The placeholder attribute specifies a short hint that describes the expected value of an input field (e.g. a sample value or a short description of the expected format).
The short hint is displayed in the input field before the user enters a value.

Example

An input field with a placeholder text:
<input type="text" name="fname" placeholder="First name">

Example
```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  <input type="text" name="fname" placeholder="First name"><br>
  <input type="text" name="lname" placeholder="Last name"><br>
  <input type="submit" value="Submit">
</form>
<p><strong>Note:</strong> The placeholder attribute of the input tag is not supported in Internet
Explorer 9 and earlier versions.</p>
```

</body>
</html>

<input> required Attribute
The required attribute is a boolean attribute.
When present, it specifies that an input field must be filled out before submitting the form.

Example
A required input field:
Username: <input type="text" name="usrname" required>

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
  Username: <input type="text" name="usrname" required>
  <input type="submit">
</form>
<p>Note: The required attribute of the input tag is not supported in Internet Explorer 9 and earlier versions, or in Safari.</p>
</body>
</html>

<input>step Attribute
The step attribute specifies the legal number intervals for an <input> element.
Example: if step="3", legal numbers could be -3, 0, 3, 6, etc.

Example
An input field with a specified legal number intervals:
<input type="number" name="points" step="3">

Example
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp">
 <input type="number" name="points" step="3">
 <input type="submit">
</form>
<p>Note: The step attribute of the input tag is not supported in Internet Explorer 9 and earlier versions, or in Firefox.</p>

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