HTML Forms

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

Example

Top of Form

First name:  
  
Last name:  


Bottom of Form

The <form> Element

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

<form>  
.  
*form elements*  
.  
</form>

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

All the different form elements are covered in this chapter: [HTML Form Elements](https://www.w3schools.com/html/html_form_elements.asp).

The <input> Element

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

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

Here are some examples:

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

All the different input types are covered in this chapter: [HTML Input Types](https://www.w3schools.com/html/html_form_input_types.asp).

Text Fields

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

Example

A form with input fields for text:

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

The <label> Element

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

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

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

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

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

Radio Buttons

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

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

Example

A form with radio buttons:

<p>Choose your favorite Web language:</p>  
  
<form>  
  <input type="radio" id="html" name="fav\_language" value="HTML">  
  <label for="html">HTML</label><br>  
  <input type="radio" id="css" name="fav\_language" value="CSS">  
  <label for="css">CSS</label><br>  
  <input type="radio" id="javascript" name="fav\_language" value="JavaScript">  
  <label for="javascript">JavaScript</label>  
</form>

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

Choose your favorite Web language:

 HTML  
 CSS  
 JavaScript

Checkboxes

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

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

Example

A form with checkboxes:

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

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

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

The Submit Button

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

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

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

Example

A form with a submit button:

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

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

Top of Form

First name:  
  
Last name:  


Bottom of Form

The Name Attribute for <input>

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

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

Example

This example will not submit the value of the "First name" input field:

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

HTML Form Attributes

This chapter describes the different attributes for the HTML <form> element.

The Action Attribute

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

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

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

Example

On submit, send form data to "action\_page.php":

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

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

The Target Attribute

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

The target attribute can have one of the following values:

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

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

Example

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

<form action="/action\_page.php" target="\_blank">

The Autocomplete Attribute

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

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

Example

A form with autocomplete on:

<form action="/action\_page.php" autocomplete="on">

The 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

A form with a novalidate attribute:

<form action="/action\_page.php" novalidate>

# HTML Form Elements

This chapter describes all the different HTML form elements.

## The HTML <form> Elements

The HTML <form> element can contain one or more of the following form elements:

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

## The <label> Element

The <label> element defines a label for several form elements.

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

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

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

## The <select> Element

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

### Example

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

The <option> element defines an option that can be selected.

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

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

### Example

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

### Visible Values:

Use the size attribute to specify the number of visible values:

### Example

<label for="cars">Choose a car:</label>  
<select id="cars" name="cars" size="3">  
  <option value="volvo">Volvo</option>  
  <option value="saab">Saab</option>  
  <option value="fiat">Fiat</option>  
  <option value="audi">Audi</option>  
</select>

### Allow Multiple Selections:

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

### Example

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

## The <textarea> Element

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

### Example

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

The rows attribute specifies the visible number of lines in a text area.

The cols attribute specifies the visible width of a text area.

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



You can also define the size of the text area by using CSS:

### Example

<textarea name="message" style="width:200px; height:600px;">  
The cat was playing in the garden.  
</textarea>

## The <button> Element

The <button> element defines a clickable button:

### Example

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

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

Click Me!

**Note:** Always specify the type attribute for the button element. Different browsers may use different default types for the button element.

## The <fieldset> and <legend> Elements

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

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

### Example

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

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

Top of Form

Personalia:First name:  
  
Last name:  


Bottom of Form

HTML Input Types

Here are the different input types you can use in HTML:

* <input type="button">
* <input type="checkbox">
* <input type="color">
* <input type="date">
* <input type="datetime-local">
* <input type="email">
* <input type="file">
* <input type="hidden">
* <input type="image">
* <input type="month">
* <input type="number">
* <input type="password">
* <input type="radio">
* <input type="range">
* <input type="reset">
* <input type="search">
* <input type="submit">
* <input type="tel">
* <input type="text">
* <input type="time">
* <input type="url">
* <input type="week">

## Input Type Color

The <input type="color"> is used for input fields that should contain a color.

Depending on browser support, a color picker can show up in the input field.

### Example

<form>  
  <label for="favcolor">Select your favorite color:</label>  
  <input type="color" id="favcolor" name="favcolor">  
</form>

## Input Type Date

The <input type="date"> is used for input fields that should contain a date.

Depending on browser support, a date picker can show up in the input field.

### Example

<form>  
  <label for="birthday">Birthday:</label>  
  <input type="date" id="birthday" name="birthday">  
</form>

You can also use the min and max attributes to add restrictions to dates:

### Example

<form>  
  <label for="datemax">Enter a date before 1980-01-01:</label>  
  <input type="date" id="datemax" name="datemax" max="1979-12-31"><br><br>  
  <label for="datemin">Enter a date after 2000-01-01:</label>  
  <input type="date" id="datemin" name="datemin" min="2000-01-02">  
</form>

## Input Type Datetime-local

The <input type="datetime-local"> specifies a date and time input field, with no time zone.

Depending on browser support, a date picker can show up in the input field.

### Example

<form>  
  <label for="birthdaytime">Birthday (date and time):</label>  
  <input type="datetime-local" id="birthdaytime" name="birthdaytime">  
</form>

## Input Type Email

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

Depending on browser support, the e-mail address can be automatically validated when submitted.

Some smartphones recognize the email type, and add ".com" to the keyboard to match email input.

### Example

<form>  
  <label for="email">Enter your email:</label>  
  <input type="email" id="email" name="email">  
</form>

## Input Type Image

The <input type="image"> defines an image as a submit button.

The path to the image is specified in the src attribute.

### Example

<form>  
<input type="image" src="img\_submit.gif" alt="Submit" width="48" height="48">  
</form>

## Input Type File

The <input type="file"> defines a file-select field and a "Browse" button for file uploads.

### Example

<form>  
  <label for="myfile">Select a file:</label>  
  <input type="file" id="myfile" name="myfile">  
</form>

## Input Type Hidden

The <input type="hidden"> defines a hidden input field (not visible to a user).

A hidden field lets web developers include data that cannot be seen or modified by users when a form is submitted.

A hidden field often stores what database record that needs to be updated when the form is submitted.

**Note:** While the value is not displayed to the user in the page's content, it is visible (and can be edited) using any browser's developer tools or "View Source" functionality. Do not use hidden inputs as a form of security!

### Example

<form>  
  <label for="fname">First name:</label>  
  <input type="text" id="fname" name="fname"><br><br>  
  <input type="hidden" id="custId" name="custId" value="3487">  
  <input type="submit" value="Submit">  
</form>

## Input Type Month

The <input type="month"> allows the user to select a month and year.

Depending on browser support, a date picker can show up in the input field.

### Example

<form>  
  <label for="bdaymonth">Birthday (month and year):</label>  
  <input type="month" id="bdaymonth" name="bdaymonth">  
</form>

## Input Type Number

The <input type="number"> defines a **numeric** input field.

You can also set restrictions on what numbers are accepted.

The following example displays a numeric input field, where you can enter a value from 1 to 5:

### Example

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

## Input Restrictions

Here is a list of some common input restrictions:

|  |  |
| --- | --- |
| **Attribute** | **Description** |
| checked | Specifies that an input field should be pre-selected when the page loads (for type="checkbox" or type="radio") |
| disabled | Specifies that an input field should be disabled |
| max | Specifies the maximum value for an input field |
| maxlength | Specifies the maximum number of character for an input field |
| min | Specifies the minimum value for an input field |
| pattern | Specifies a regular expression to check the input value against |
| readonly | Specifies that an input field is read only (cannot be changed) |
| required | Specifies that an input field is required (must be filled out) |
| size | Specifies the width (in characters) of an input field |
| step | Specifies the legal number intervals for an input field |
| value | Specifies the default value for an input field |

You will learn more about input restrictions in the next chapter.

The following example displays a numeric input field, where you can enter a value from 0 to 100, in steps of 10. The default value is 30:

### Example

<form>  
  <label for="quantity">Quantity:</label>  
  <input type="number" id="quantity" name="quantity" min="0" max="100" step="10" value="30">  
</form>

## Input Type Range

The <input type="range"> defines a control for entering a number whose exact value is not important (like a slider control). Default range is 0 to 100. However, you can set restrictions on what numbers are accepted with the min, max, and step attributes:

### Example

<form>  
  <label for="vol">Volume (between 0 and 50):</label>  
  <input type="range" id="vol" name="vol" min="0" max="50">  
</form>

## Input Type Search

The <input type="search"> is used for search fields (a search field behaves like a regular text field).

### Example

<form>  
  <label for="gsearch">Search Google:</label>  
  <input type="search" id="gsearch" name="gsearch">  
</form>

## Input Type Tel

The <input type="tel"> is used for input fields that should contain a telephone number.

### Example

<form>  
  <label for="phone">Enter your phone number:</label>  
  <input type="tel" id="phone" name="phone" pattern="[0-9]{3}-[0-9]{2}-[0-9]{3}">  
</form>

## Input Type Time

The <input type="time"> allows the user to select a time (no time zone).

Depending on browser support, a time picker can show up in the input field.

### Example

<form>  
  <label for="appt">Select a time:</label>  
  <input type="time" id="appt" name="appt">  
</form>

## Input Type Url

The <input type="url"> is used for input fields that should contain a URL address.

Depending on browser support, the url field can be automatically validated when submitted.

Some smartphones recognize the url type, and adds ".com" to the keyboard to match url input.

### Example

<form>  
  <label for="homepage">Add your homepage:</label>  
  <input type="url" id="homepage" name="homepage">  
</form>

## Input Type Week

The <input type="week"> allows the user to select a week and year.

Depending on browser support, a date picker can show up in the input field.

### Example

<form>  
  <label for="week">Select a week:</label>  
  <input type="week" id="week" name="week">  
</form>

## The HTML <video> Element

To show a video in HTML, use the <video> element:

### Example

<video width="320" height="240" controls>  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogg" type="video/ogg">  
Your browser does not support the video tag.  
</video>

## The HTML <audio> Element

To play an audio file in HTML, use the <audio> element:

### Example

<audio controls>  
  <source src="horse.ogg" type="audio/ogg">  
  <source src="horse.mp3" type="audio/mpeg">  
Your browser does not support the audio element.  
</audio>