

Advanced HTML5

Section 1: Introduction to HTML5

1.1 Introduction, Tags and Elements

HTML5 is the new standard and is a cooperation between W3C and the Web Hypertext Application Technology Working Group (WHATWG) for setting the modern HTML5. HTML5 offers some new features that make webpage more dynamic.

HTML5 introduces are new sets of tags such as `<header>` and `<section>`, a `<canvas>` element for drawing 2D drawings, access to local storage (*alternative to cookies to store small amount of data in a user's browser*), new form controls like calendar, date and time, media functionality and geolocation.

Most modern browsers support most if not all of the HTML5 features.

A very useful website for learning more about the HTML5 tags and elements is the W3School website (<https://www.w3schools.com/html/default.asp>).

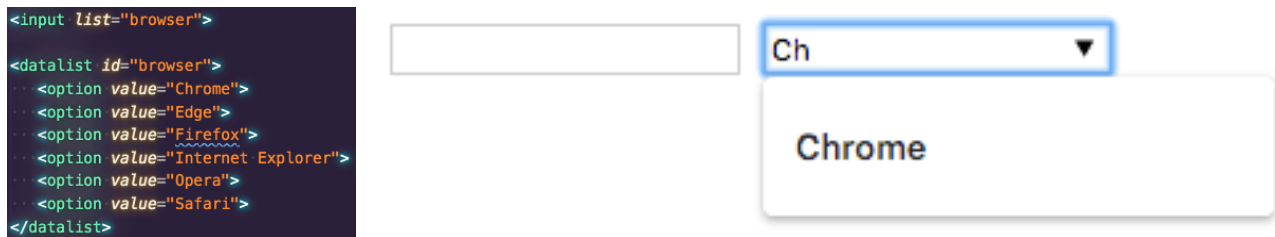
1.2 New Form Elements

The best new feature of HTML5 are the new form/input element tags which make it easy to create HTML forms for users to interact with a webpage/web app. Below are examples:

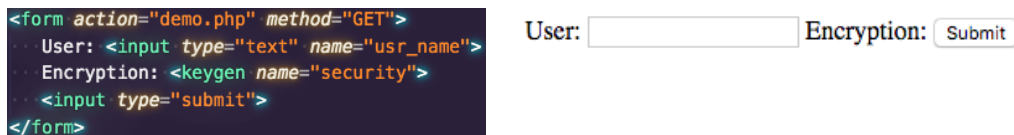
Example	Description
<code><input type="email" name=""></code>	Allows the form to validate the email address format without the use of JavaScript
<code><input type="tel" name=""></code>	Used to define a field for entering a telephone number with validation
<code><input type="color" name=""></code>	Allows to select a colour from a colour picker
<code><input type="date" name=""></code>	Allows the user to select a date from a popup calendar
<code><input type="range" name="" min="1" max="10"></code>	Control over the number input (like a slider input)
<code><input type="time" name=""></code>	Used to define a field for entering a time
<code><input type="url" name=""></code>	Used to define a field for entering a url/link

The **<datalist>** is a new form element which specifies a list of pre-defined options for an `<input>` element. It provides a autocomplete feature on the `<input>` elements. The

element will look like a text input element and the user will see a dropdown list of pre-defined options as they start to input the data (i.e. start typing). The `<input>` element's `list` attribute is used to bind it together with a `<datalist>` element, for example:



The `<keygen>` form element provides an advanced way to authenticate users on client side. The `<keygen>` tag specifies a key-pair generator field in a form and 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. For example:



The `<output>` form element performs a calculation and shows the result in the `<output>` element. For example:

