



# HTML

## Introduction to HTML5

# Agenda

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# Objectives

At the end of this module, you will be able to :

- Understand HTML 5
- Different browser support for HTML 5
- Different HTML 5 elements

# What Is HTML 5 ?

- The new version of HTML
- A new and emerging set of web standards and specifications
- HTML5 is HTML + CSS3 + JavaScript APIs



## What Is HTML 5? (Contd.).

- HTML5 allows for the creation of better web applications and websites.
- Using HTML5, web developers can expose graphics and multimedia to webpages with no need for plugins, use advanced JavaScript APIs such as client-side storages, arrange their webpages with a more meaningful structure and embed semantics in their content.
- In 1991, the first HTML specifications were published.
- The second release of HTML (HTML2) was published in 1995, introducing form based file uploads, tables and more.
- In early 1997, a new and improved HTML specification (HTML3) was published as a W3C recommendation.
- ***Note:** Most of the changes in this version were the adoption of the visual markup tags of Netscape.*

## What Is HTML 5 (Contd.).

- In late 1997, the last HTML specification(HTML4) was released. This version has changed a little over time but remained in use until 2007, when the W3C and WHATWG began work on HTML5.

***Note:** WHATWG is the Web Hypertext Application Technology Working Group. It is a working group separated from W3C and its main issue is web forms.*

- HTML5 is product of two different groups that were working on separate but related efforts:
  - W3C-was working on HTML4
  - WHATWG- was working on web forms and web applications.
- These groups began to co-operate in 2006 to create a better web experience. The product of their co-operation is HTML5. HTML5 is a new set of standards and specifications that try to fix some problems with the previous version of HTML, such as lack of guidelines, the loose structure, the lack of flexibility and more

## What is HTML 5 (Contd.).

- HTML5 is the next generation of HTML
- It will be the new standard for HTML, XHTML, and HTML DOM
- HTML5 work is still in progress and most modern browsers have some HTML5 support
- It is a co-operation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG)
- WHATWG was working with web forms and applications, and W3C was working with XHTML 2.0
- In 2006, they decided to collaborate and create a new version of HTML



## What is HTML 5 (Contd.).

- It is a language for structuring and presenting content for the WWW
- It is a core technology of the Internet originally proposed by Opera Software
- The core aim of HTML5 is
  - Is to improve the language with support for multimedia
  - Easily read by humans
  - Understood by computers and devices
- The HTML5 working group includes Apple, Google, AOL, IBM, Microsoft, Mozilla, Nokia, Opera and many hundreds of other vendors.

# Rules for HTML 5

- New features should be based on HTML, CSS, DOM, and JavaScript
- Usage of external plug-ins (like Flash) should be reduced
- Strict parsing rules are introduced to handle any errors.
- More markup to replace scripting
- Device independence should be there

# **HTML5 and the Open Web Platform**

- The Open Web Platform (OWP) is a collection of web technologies
- It is developed by W3C and other web standardization bodies
- HTML5 is part of the OWP

# The New Elements in HTML5

- HTML5 includes many new elements and features. There are approximately 1000 different working groups that write its specifications and this mass of groups produces a lot of changes.
- The following list describes some of the new elements of HTML5:
  - **Canvas**—A drawing surface that enables drawing 2D graphics with JavaScript API.
  - **Video** and **Audio**—elements that enable the inclusion of multimedia in webpages without the need for plug-ins such as Flash. They also expose a JavaScript application programming interface (API) that allows you to interact with them programmatically.
- New content-specific elements—Semantic elements such as **article**, **footer**, **header** and **nav** enable the developer to organize content with more expressive elements.
- **New form controls:** New types of input elements were introduced. These elements make it the browser's responsibility to implement the behavior of calendars, dates and email addresses freeing developers from having to create the behavior themselves.

## **The New Elements in HTML5(Contd.).**

- These new elements come with many new JavaScript APIs that enable browser functionality that was not available before HTML5.
- This includes determining the location of the browser by using the Geolocation API, the use of files through the File API and more.

# The Doctype Element

- A declaration of document type must be provided by any HTML document
- Defines the rendering mode of the browser
- Was created to enable HTML parsing and validation

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

# Browser Support

- No browsers have full HTML5 support as HTML 5 is yet not an official standard
- But all major browsers (Chrome, Safari, Firefox, Opera, Internet Explorer) continue to add new HTML5 features to their latest versions



- Internet Explorer 9, Firefox, Opera, Chrome, and Safari support the <video> element.
- **Note:** Internet Explorer 8 and earlier versions, do not support the <video> element.

# Summary

In this module, you were able to :

- Understand HTML 5
- Different browser support for HTML 5
- Different HTML 5 elements



# **Creating Form Input and Validation**



# Objectives

At the end of this module, you will be able to :

- Describe the new HTML5 input types
- Apply date pickers on webpages
- Use the new text box types on webpages
- Use the new interactive text box types on webpages

# Challenges with HTML 4.0 Forms

- The HTML 4 form fields are not validated
- The validation to the input fields can be done by
  - Writing JavaScript code in the Client side Code
  - Or the validation needs to be done at the Server side
- Almost every web page has some kind of form with search, email, sign-up etc
- It would be great if browsers had built in validation for some of the common data types we collect

# HTML – New Input types

- HTML 5 has lot of new input types
- These new features allow for better input control and validation
  - email
  - url
  - number
  - range
  - Date pickers (date, month, week, time, datetime-local)
  - search
  - color

## Input type - email

- It represents a control for editing a list of e-mail addresses given in the element's value
- HTML email address validation will only work in browsers which have support for it

```
<input type="email" placeholder="Please enter your email"  
required multiple="multiple">
```

- required - specifies that the element is a required part of form submission
- placeholder - a short phrase to help the user when entering data into the control
- multiple - specifies that the element allows multiple values

## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Input-Email</title>
</head>
<body>
<form>
<input type="email" placeholder="Please enter your email" required
multiple="multiple">
  <input type="submit">
</form>
</body>
</html>
```

## Input type – email (Contd.).

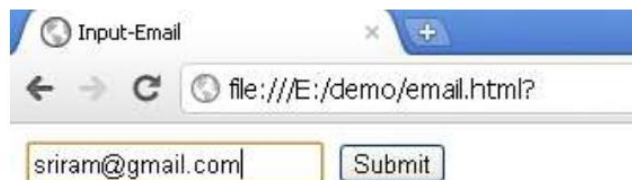
Field is empty



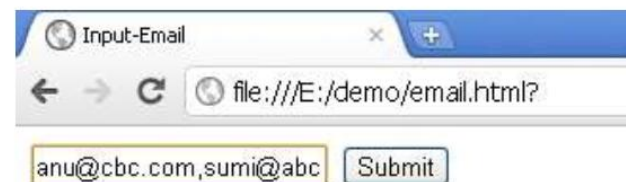
The value should be an email



Valid email – with a single email



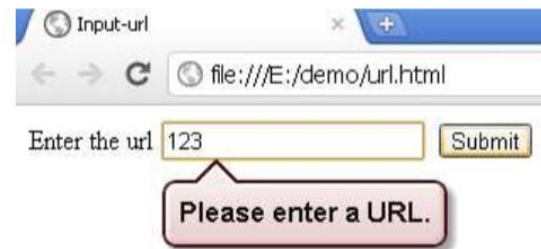
Valid-More than 1 email



# Input type - url

`<input type="url" name="URL">`

- It 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





# Input type - number

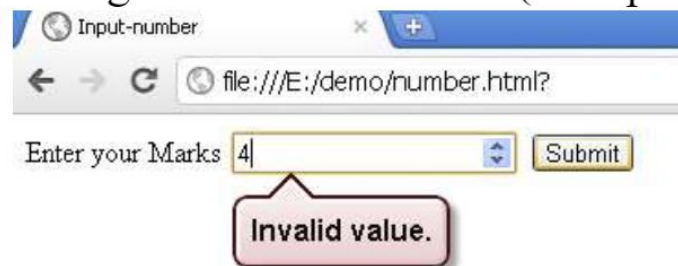
```
<input type="number" min="0" max="100">
```

Used to take a number as input



```
<input type="number" min="0" max="100" step="3">
```

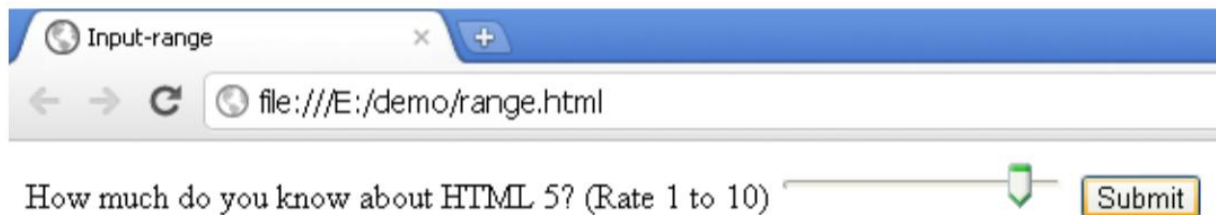
step-specifies legal number intervals (if step="3", legal numbers could be -3,0,3,6, etc)



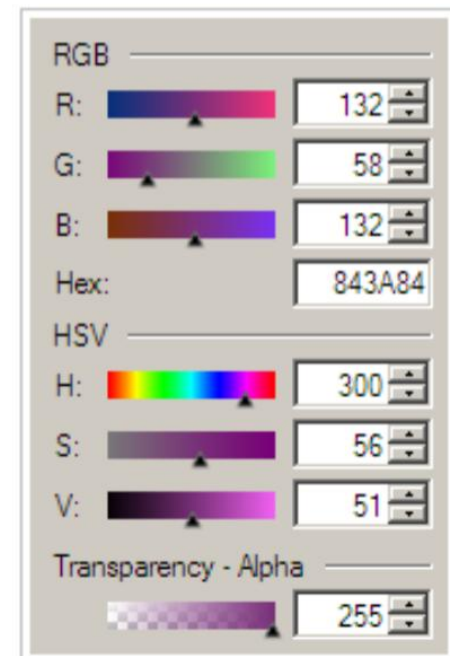
# Input type - range

- Slider control is a very useful user interface to set a number within a range

```
<input type="range" name="Range" min="1" max="10" required>
```



A screenshot of a web browser window titled "Input-range". The address bar shows the file path "file:///E:/demo/range.html". Below the address bar, there is a text input field containing "How much do you know about HTML 5? (Rate 1 to 10)". To the right of the text field is a range slider with a green triangle marker. Further right is a yellow "Submit" button.



A screenshot of a color picker interface. It displays various color models and their values:

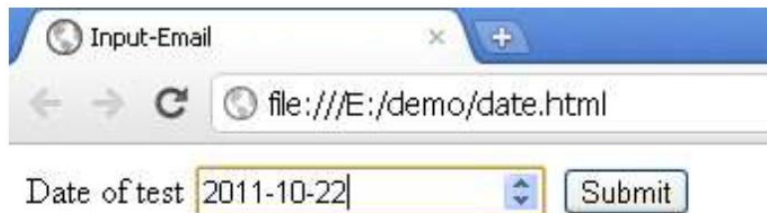
- RGB**: R: 132, G: 58, B: 132
- Hex**: 843A84
- HSV**: H: 300, S: 56, V: 51
- Transparency - Alpha**: 255

Each value is accompanied by a slider and a numeric input field.

## Input type – Date pickers - date

- Date and time field can be easily found in many web forms
- Typical applications are like ticket booking, appointment booking etc
- HTML5, the web browser ensures user can only enter a valid date-time string into the input textbox

```
<input type="date" name="set_date" />
```



## Input type – Date pickers – date (Contd.).

```
<input type="month" name="month" />
```

Creates a date input control for specifying a particular month in a year



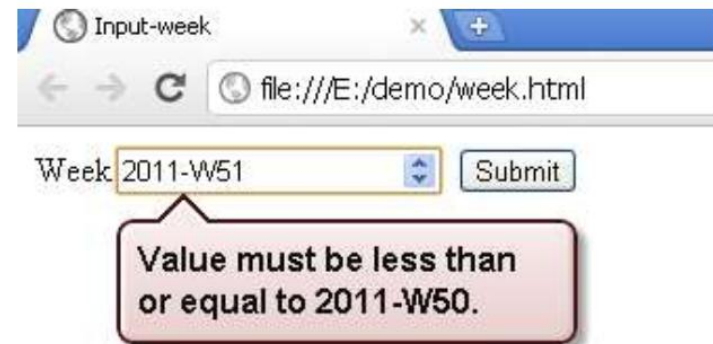
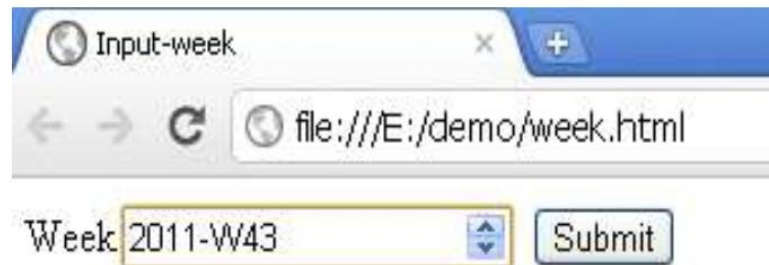
```
<input type="month" name="month" min="2011-1" max="2011-12"/>
```



## Input type – Date pickers – week

```
<input type="week" name="week" min="2011-W15" max="2011-W50" />
```

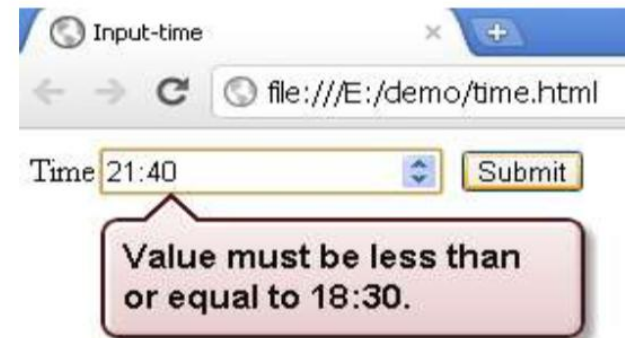
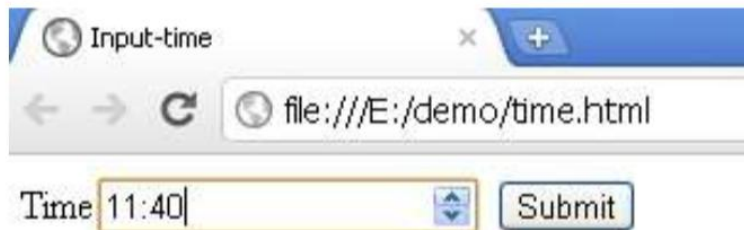
- Allows entry and validation of a week number



## Input type – Date pickers – time

```
<input type="time" name="Time" min="11:40" max="18:30">
```

- Allows entry and validation of a valid time

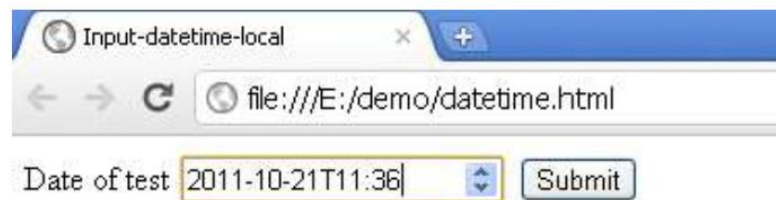




# Input type – Date pickers – datetime-local

```
<input type="datetime-local" name="set_date" />
```

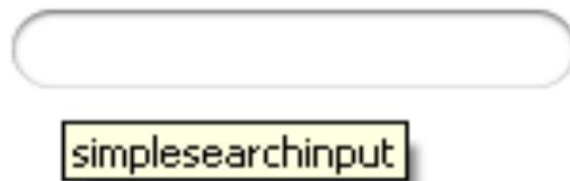
- It creates a combined date/time input field
- The value is an ISO formatted date and time



## Input type - Search

```
<input type="search" name="Search">
```

- It is used for search fields, like a site search, or Google search
- The difference between search and text type is only stylistic
- It takes the operating system's default rounded-corners style for search
- Currently Google Chrome does not support this



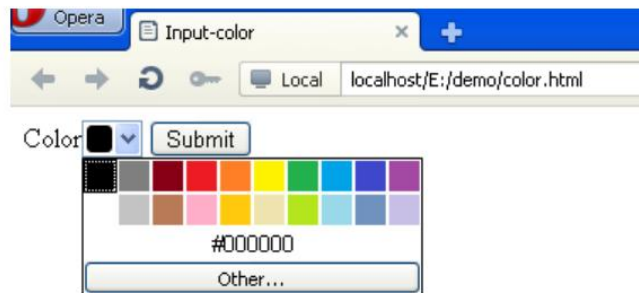


# Input type - Color

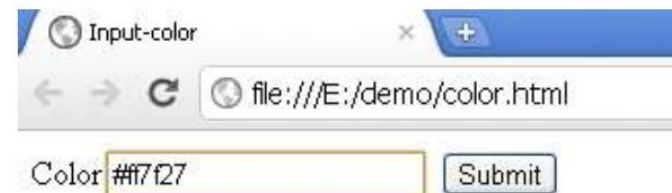
```
Color<input type="color" name="Color" required>
```

- Used to create a color control for selecting a color value
- The Opera browser will allow you to select a color from a color picker

In Opera 11.52



In Google chrome 14.0



## Input type - Color

```
<input type="color" name="get_color" value="#000000">
```

value attribute of color

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- value = simple color
- A string representing a color.
- A string exactly seven characters long, consisting of the following parts, in exactly the following order:

A "#" character.

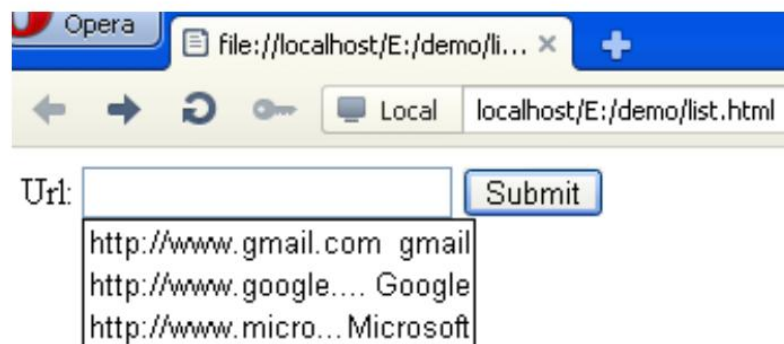
Six characters in the range 0–9, a–f, and A–F.

Color keywords (for example, strings such as “red” or “green”) are not allowed

## list attribute

- The list attribute specifies a datalist for an input field
- A datalist is a list of options for an input field

```
Url: <input type="text" list="url_list" name="url" />  
<datalist id="url_list">  
  <option label="gmail" value="http://www.gmail.com" />  
  <option label="Google" value="http://www.google.com" />  
  <option label="Microsoft" value="http://www.microsoft.com" />  
</datalist>
```



## Example

```
<!DOCTYPE html>
<html>
<body>
<form action="color.jsp" method="get">
Url: <input type="text" list="url_list" name="url" />
<datalist id="url_list">
    <option label="gmail" value="http://www.gmail.com" />
    <option label="Google" value="http://www.google.com" />
    <option label="Microsoft" value="http://www.microsoft.com" />
</datalist>
<input type="submit" />
</form>
</body>
</html>
```

# Summary

In this module, you were able to :

- Describe the new HTML5 input types
- Apply date pickers on webpages
- Use the new text box types on webpages
- Use the new interactive text box types on webpages



# Thank You