HMTL5 FORM ENHANCEMENTS

slides and content adapted from Matt Smith 2014

HTML5 - Forms

- One of the biggest problems with XHTML forms was that they were just dumb fields.
- You had to check that the user had completed the from and report any errors to the user.
- This was done using a client-side scripting language e.g. JavaScript and / or a server-side scripting language e.g. PHP .
- Now, HTML5 has come to the rescue
- It provides built-in validation for many of the most common types of data entered via web forms.
- Eventually, you won't need JavaScript validation at all for these fundamental data types.
- However, until everyone is using an HTML5 browser, some JavaScript validation will still be required.
- We will look at some features of HTML5 that Chrome supports.

HTML5 - Forms

- Internet Explorer (at time of writing) does not support HTML5.
- HTML5 makes developing forms quicker.
- The new features are largely new values of the `type` attribute of the `input` element.
- **Note**: Not all browsers support the new input types. If this is the case, a **textbox** appears instead of the new HTML5 input type and you will have to validate your form using JavaScript.

HTML5 Form Attributes

- HTML5 has made some significant improvements to forms by adding many form enhancements that were not available in HTML 4 or XHTML.
- These enhancements include the following attributes:
- `required`
- `placeholder`
- `autofocus`
- `pattern.`

Required attribute

- The **required** attribute can be applied to any number of fields in a form.
- Any field that is designated as required must have a value entered in the field for the form to submit.
- If the user clicks the submit button and a required field has no data entered, an error will be generated and the form data will not be submitted to the server.

```
<label for="pass">Your password</label>
<input type="password" id="pass" name="pass" required>
```

PLACEHOLDER ATTRIBUTE

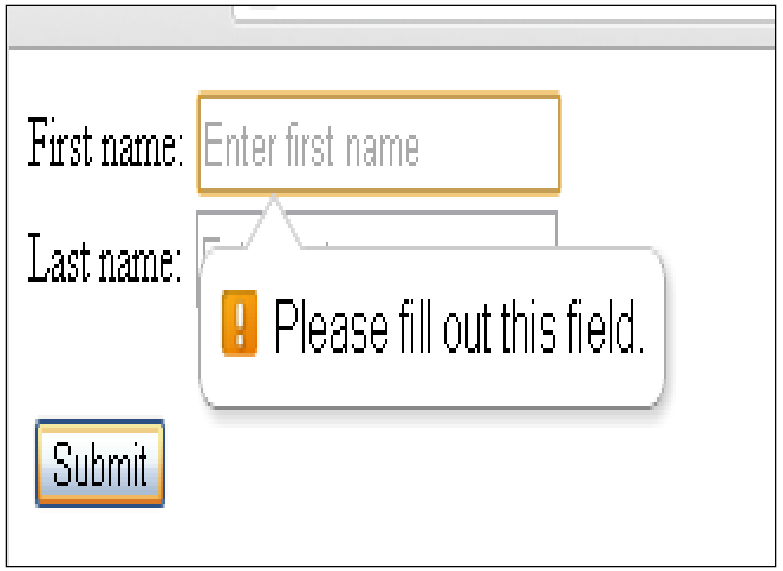
- Placeholders are a great way to give visitors a hint or extra instructions for filling out the form.
- The placeholder attribute will put text in a light grey color inside your text box.
- When the user begins to input text in the file, the light grey text will disappear, and it will come back, if the user leaves the field without entering any information.

REQUIRED & PLACEHOLDER ATTRIBUTES

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

<form action="" method = "post">
  First name: <input type="text" name="firstName" required placeholder = "Enter first name">
  <br>
  Last name: <input type="text" name="lastName" required placeholder = "Enter last name">
  <br>
  <br>
<input type="submit">
</form>

</body>
</html>
```

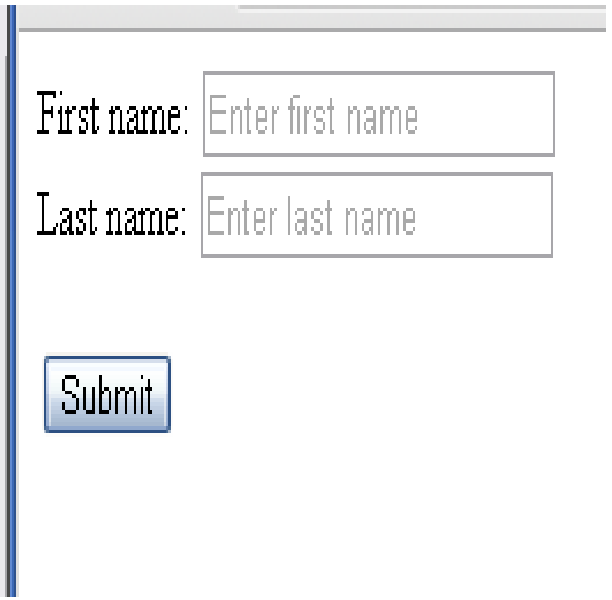


AUTOFOCUS ATTRIBUTE

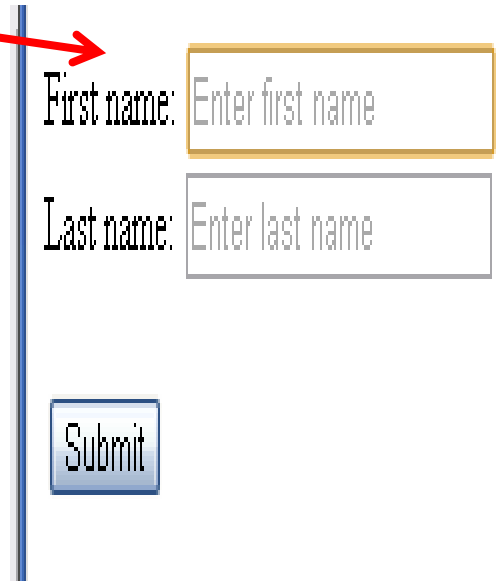
- When desired, an element can have the `autofocus` attribute set to have a value of `autofocus.`
- If it is the first element to have this attribute, the input element will, by default, have focus when the page loads.
- In the previous example, no element had `autofocus` set, so the visitor was required to click on the first (or some) element to begin filling out the form.
- Notice the difference in the two renderings on the next slide.

AUTOFOCUS ATTRIBUTE

```
<form action="" method = "post">
  First name: <input type="text" name="firstName" required placeholder = "Enter first name"
  autofocus>
```



No autofocus on first element of form



Autofocus on first element of form

Pattern attribute – Example 1

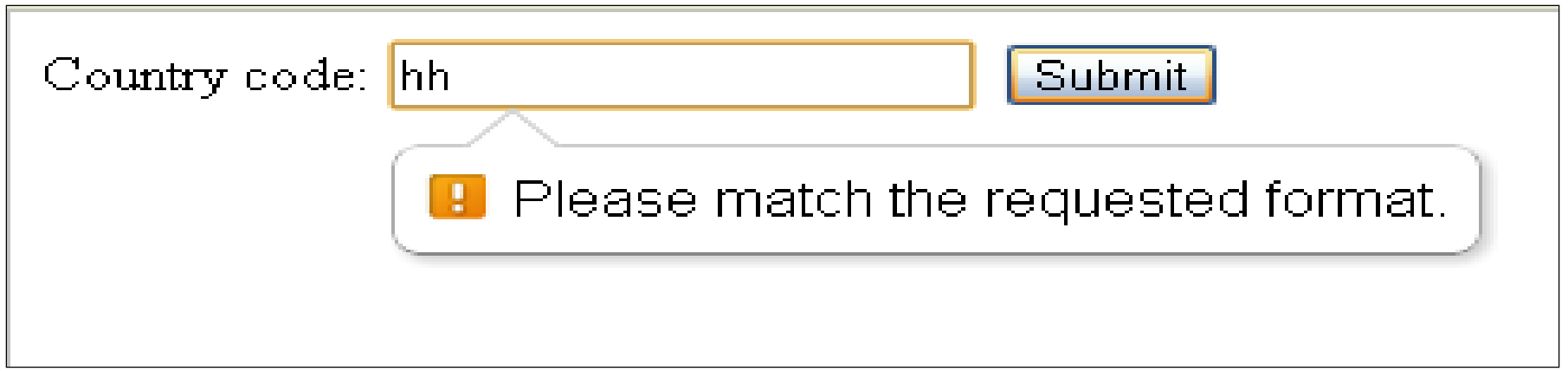
- The pattern attribute specifies a **regular expression** that the <input> element's value is checked against.
- Common regular expressions will be covered later.
- The example uses this regular expression - **[A-Za-z]{3}**
- It means the following:
- **[A-Za-z] – any letter in the alphabet in upper or lower case**
- **{3} – must occur 3 times**
- We are checking that the user enters three letters. It does not matter if these are a mixture of upper and lower case.
- If the user enter < 3 letters or enter digits or leaves the field blank, an error message appears – "*Please match the requested format*"

Pattern attribute – Example 1

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

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

</body>
</html>
```



PATTERN ATTRIBUTE – EXAMPLE 2

- Example: *A Product Number consists of three uppercase letters followed by four digits e.g. USB5678.*
- Use **required** and **pattern to** ensure that the field has a value and that the value matches the correct format for a Product Number.
- **pattern="[A-Z]{3}[0-9]{4}"**
- Pattern attribute works with the following input types:
  - text, search, url, tel, email, and password.
- Use a placeholder to let the user know what to enter.
- Note: **title** attribute (which displays a tooltip) also available to let the user know format of the data to enter.

NEW INPUT TYPES IN HTML5

- Date
- Number
- Time
- Range
- Color
- Email
- Url
- Tel

- <input type = “date”..>
- <input type = “number” ..>
- <input type = “time”..>
- <input type = “range”..>
- <input type = “color”..>
- <input type = “email”..>
- <input type = “url”..>
- <input type = “tel”..>

There are more…

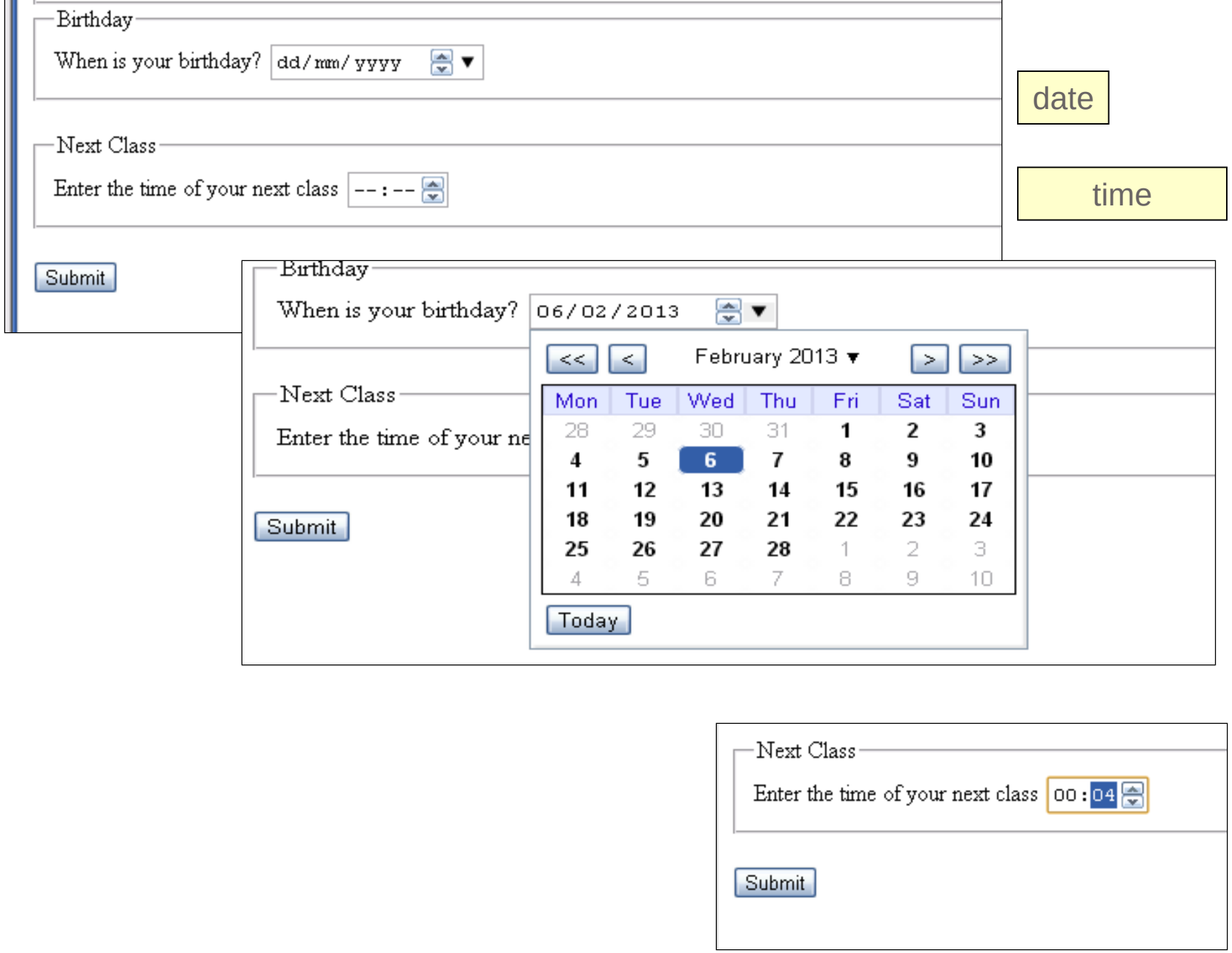
Calendar and Time Controls

- A common issue web developers have to deal with is how to create calendar widgets that allow the users to pick a date from a calendar so they do not have to enter the date themselves.
- In the past, creation of such a widget always required JavaScript, but with HTML5 the need to use JavaScript is disappearing.
- HTML5 has several new input types that create different calendar and time controls.
- Currently, not all browsers support these new types. The new HTML5 input type `date` allows the user to select a calendar date.
- In Chrome, a calendar with a date picker is provided.

DATE & TIME ATTRIBUTES

```
<fieldset>
  <legend> Birthday </legend>
          When is your birthday?
          <input type="date" name="birthday" required>
</fieldset>
<br>

<fieldset>
  <legend> Next Class </legend>
          Enter the time of your next class
          <input type="time" name="classTime" required>
</fieldset>
<br>
```


Birthday
When is your birthday?
dd/mm/yyyy
Next Class
Enter the time of your next class
--:--
Submit
Birthday
When is your birthday?
06/02/2013
<<
<
February 2013
>
>>
Mon Tue Wed Thu Fri Sat Sun
28 29 30 31 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 1 2 3
4 5 6 7 8 9 10
Today
Next Class
Enter the time of your ne
Submit
Next Class
Enter the time of your next class
00:04
Submit

date

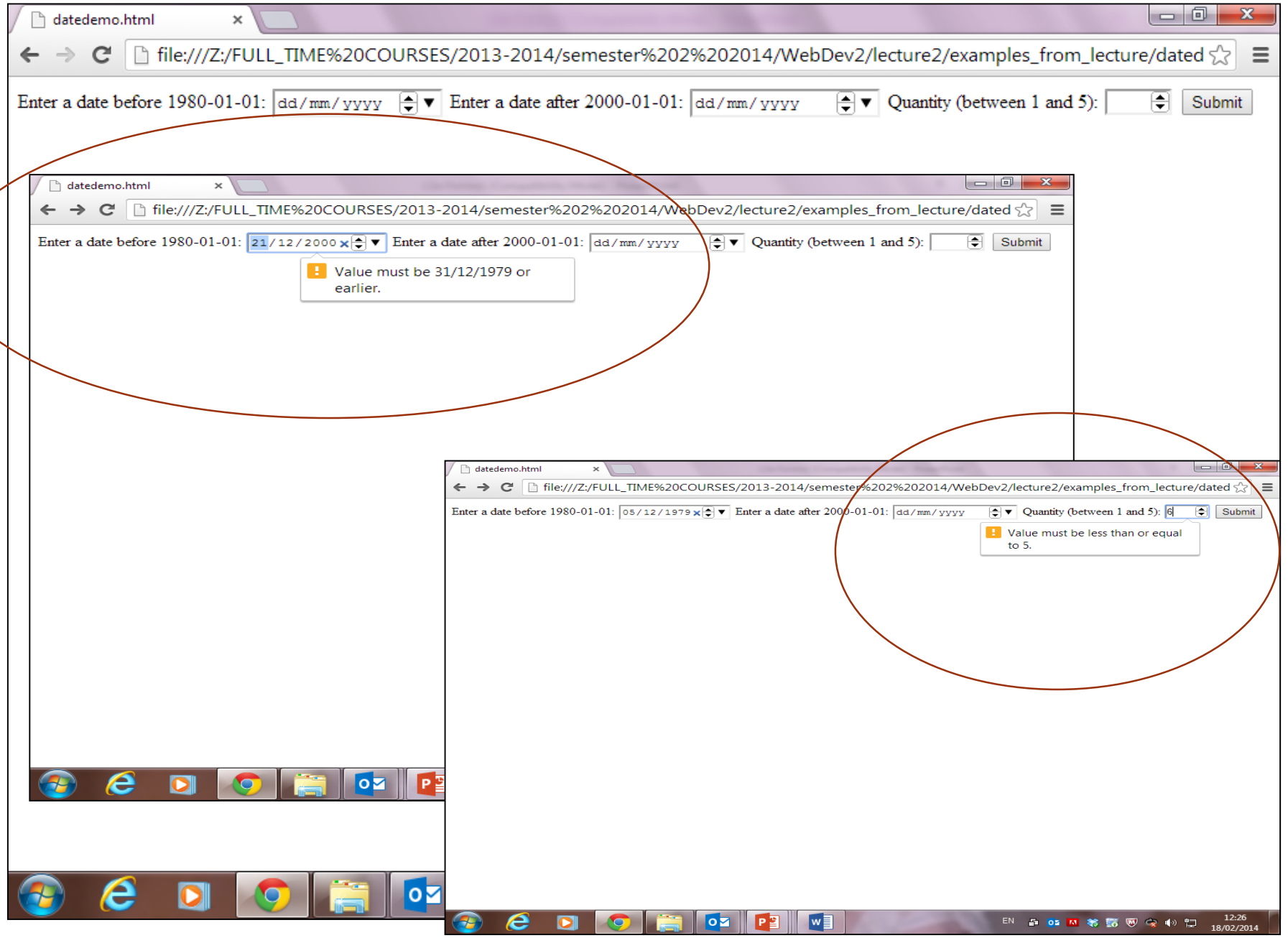
time

Date and Time attributes

- There are two new attributes, **`min`** and **`max`** that can be used to restrict the values for dates and times of the widget.
- For a date, if you wanted to make sure the user could not pick a date to far in the past, the **`min`** attribute would be set.
- Similarly, to make sure that they cannot enter a date too far in the future, the **`max`** attribute would be set.
- The values would have the format: **`YYYY-MM-DD.`**
- For times, similar restrictions are allowed but the format for a time is **`HH:MM.`**
- There are other variations of date and time available in HTML5 e.g. datetime, datetime-local, month, time and week.

Number attribute

- The new **number** input type is used to allow the user to enter a number.
- It accepts only numbers, otherwise, a validation error is returned.
- It allows the **min** and **max** attributes to be specified to limit the range of values that can be selected.
- It also allows for another new attribute, **step**, which allows you to specify the increment values that can be entered.
- The **min** and **max** attributes works with the following input types: **number, range, date**,


datedemo.html
file:///Z:/FULL_TIME%20COURSES/2013-2014/semester%202%202014/WebDev2/lecture2/examples_from_lecture/dated
Enter a date before 1980-01-01: dd/mm/yyyy
Enter a date after 2000-01-01: dd/mm/yyyy
Quantity (between 1 and 5):
Submit
21/12/2000
Value must be 31/12/1979 or earlier.
05/12/1979
6
Value must be less than or equal to 5.
EN
12:26
18/02/2014

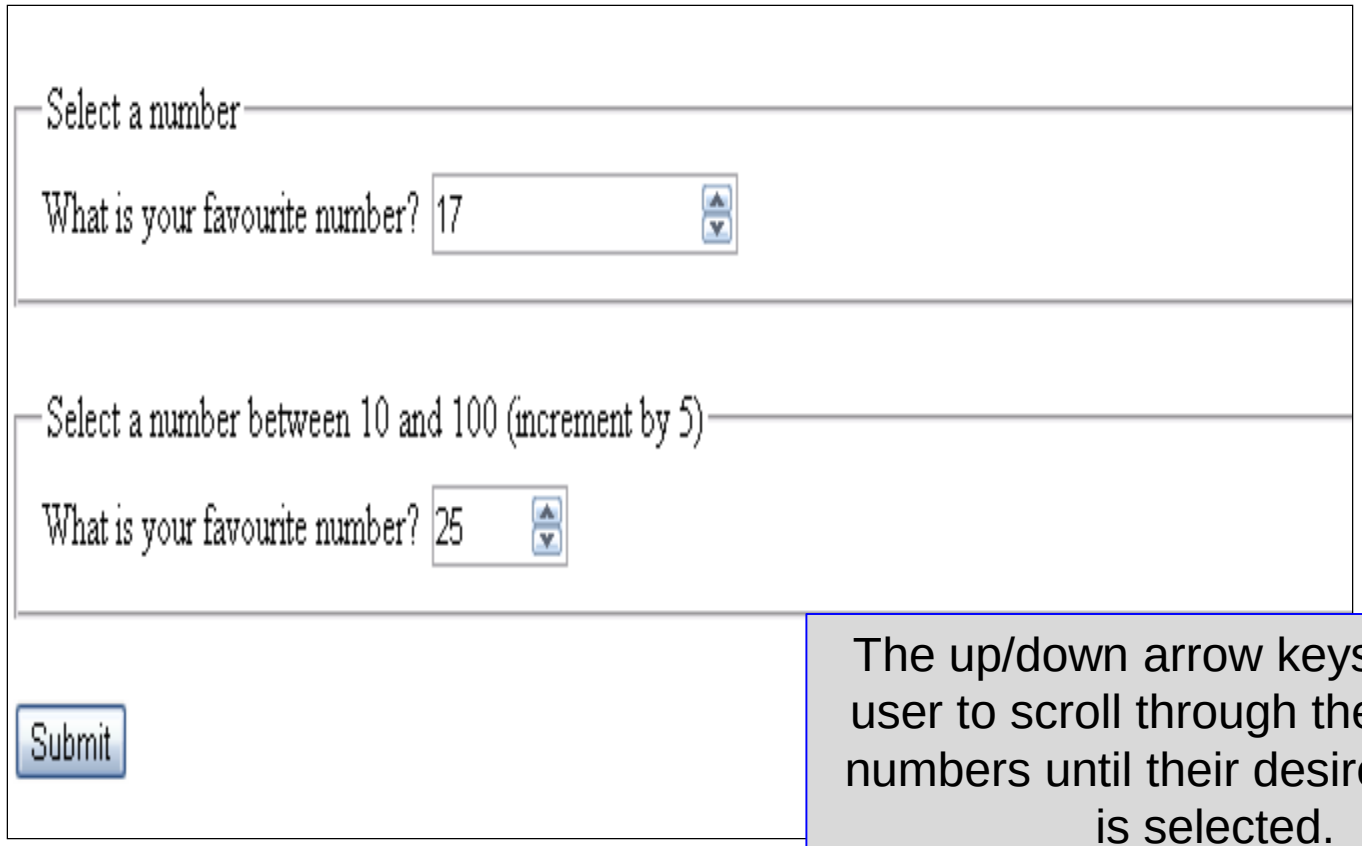
NUMBER ATTRIBUTE

```
<fieldset>
    <legend> Select a number  </legend>
            What is your favourite number?
            <input type="number" name="numberGetter" required>
 </fieldset>
<br>

 <fieldset>
    <legend> Select a number between 10 and 100 (increment by 5) </legend>
            What is your favourite number?
            <input type="number" name="numberLimiter" min = "10" max = "100" step = "5" required>
   </fieldset>
<br>
```

Allows you to scroll through the numbers

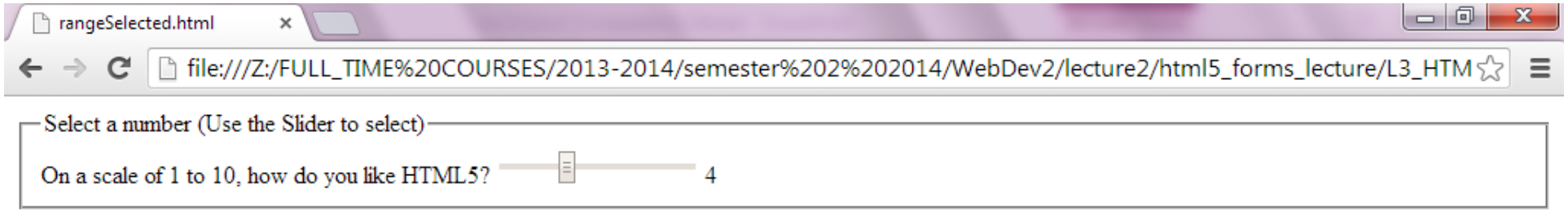
NUMBER ATTRIBUTE



The up/down arrow keys allow the user to scroll through the available numbers until their desired number is selected.

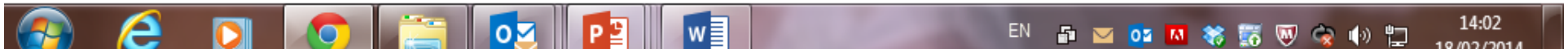
Slider Control – Range attribute

- The new **range** input type generates a slider control.
- It has no text area for the user to type into.
- Like the `number` input type, it can use the **min**, **max**, and **step** attributes.
- Prior to HTML5, you would have needed JavaScript code to generate and control the widget.
- There is limited control over how the slider looks because, at the moment, the controls are browser-specific.
- However, you can apply a height and width to the range control.
- If you specify a height larger than the width, the control is displayed vertically instead of the default horizontal rendering.



Slider Control – Range attribute

```
<form oninput="x.value=parseInt(a.value)">
   <fieldset>
       <legend>Select a number (Use the Slider to select)  </legend>
            On a scale of 1 to 10, how do you like HTML5?
                  <input type="range" name="a" min = "1" max = "10"required>
           <output name="x"></output>
     </fieldset>
</form>
```



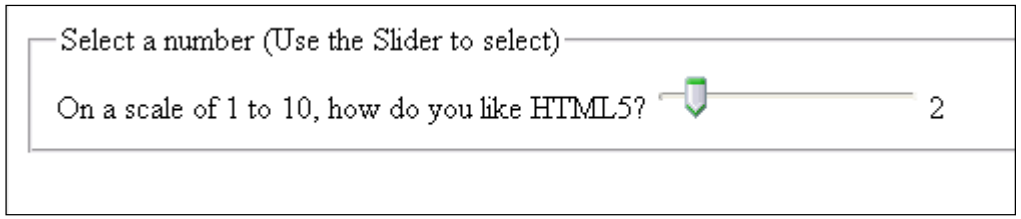
Displaying results with the `output` element

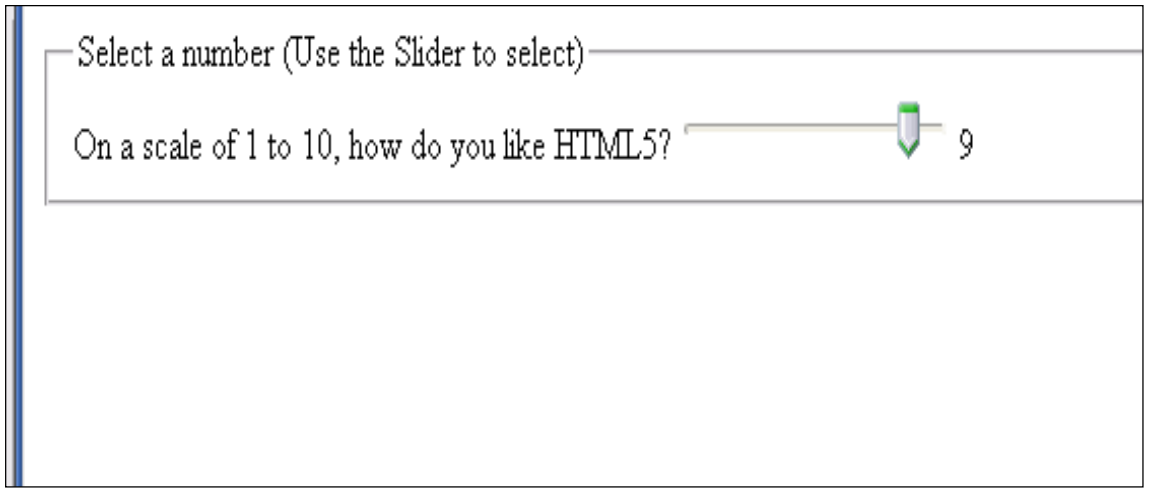
- The `output` element uses JavaScript to display results, usually from a calculation or from a script.
- It however, can also be used to add a little extra functionality to various input types like the `range` type we just saw.
- To have the value that the range slider is currently set at as the slider is being dragged you would use the output element.
- The default value is blank, but when the user moves the slider, the output value is changed and displayed to the user in real time.
- The example on the next two pages illustrates this technique. Don't worry about the JavaScript at this point.

Displaying Results with the **Output** element

```
<form oninput="x.value=parseInt(a.value)">
    <fieldset>
        <legend>Select a number (Use the Slider to select)  </legend>
                On a scale of 1 to 10, how do you like HTML5?
                <input type="range" name="a" min = "1" max = "10"required>
                <output name="x"></output>
      </fieldset>
</form>
```

Displaying Results with the **Output** element



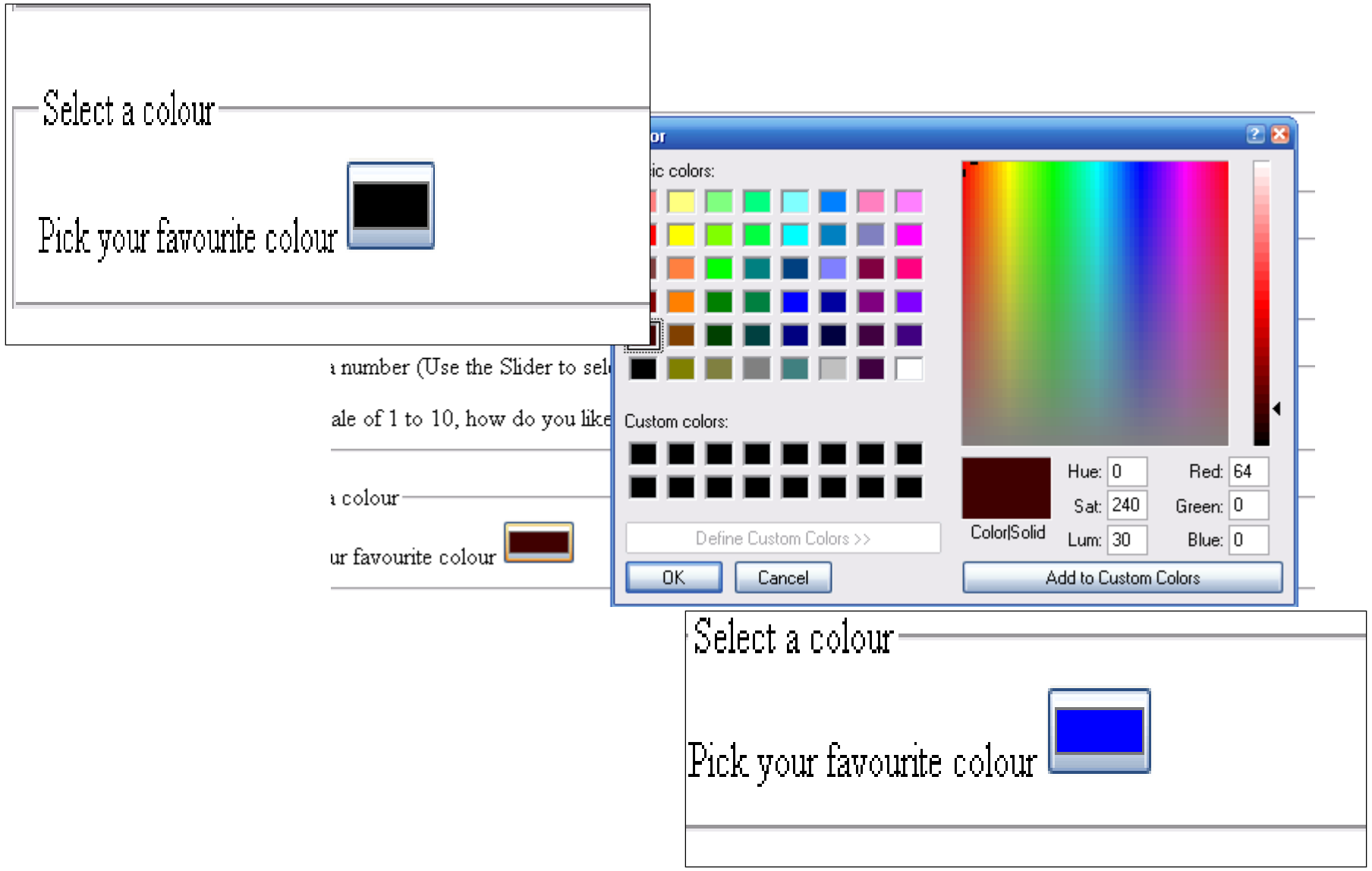


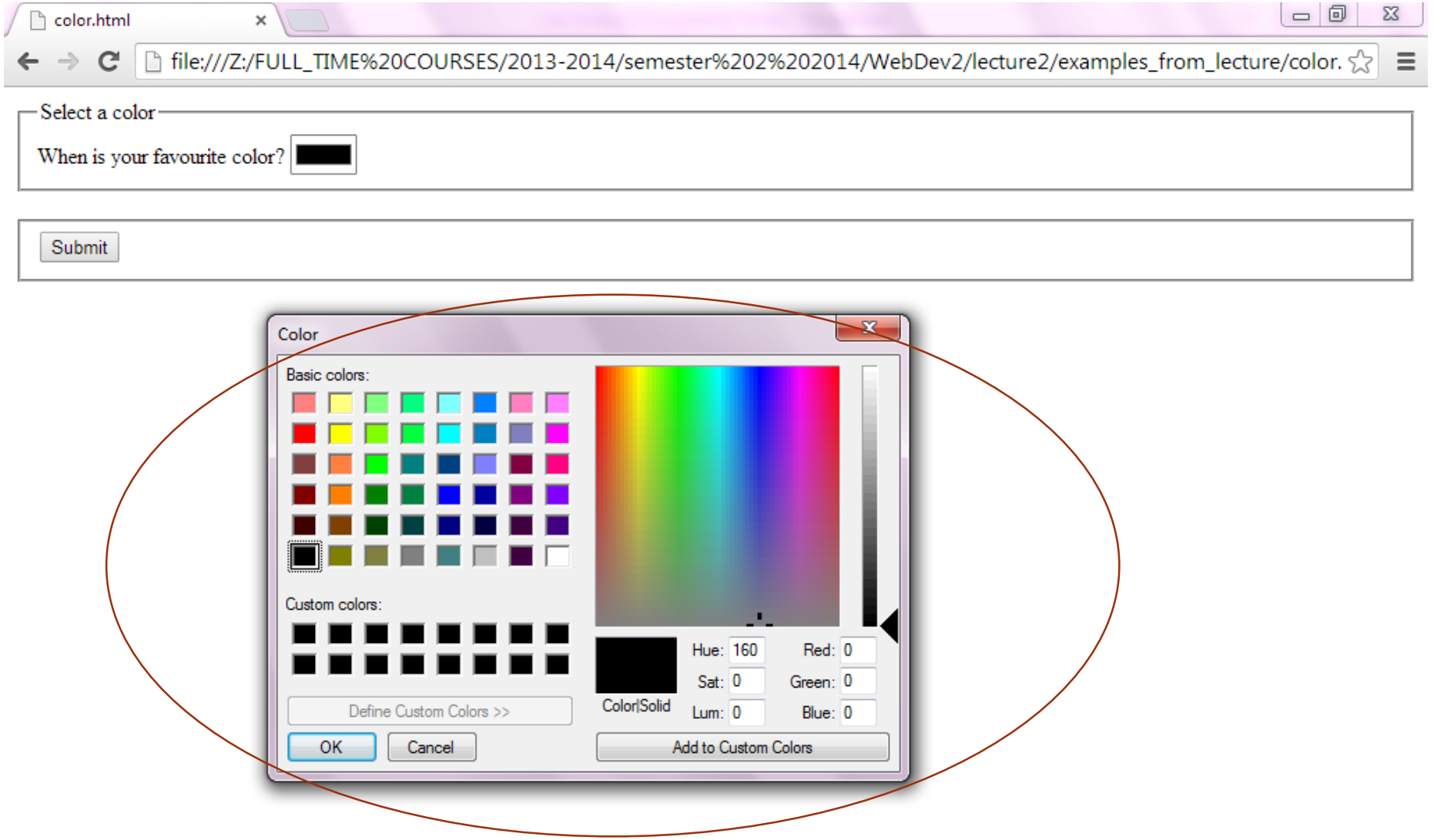
Color attribute

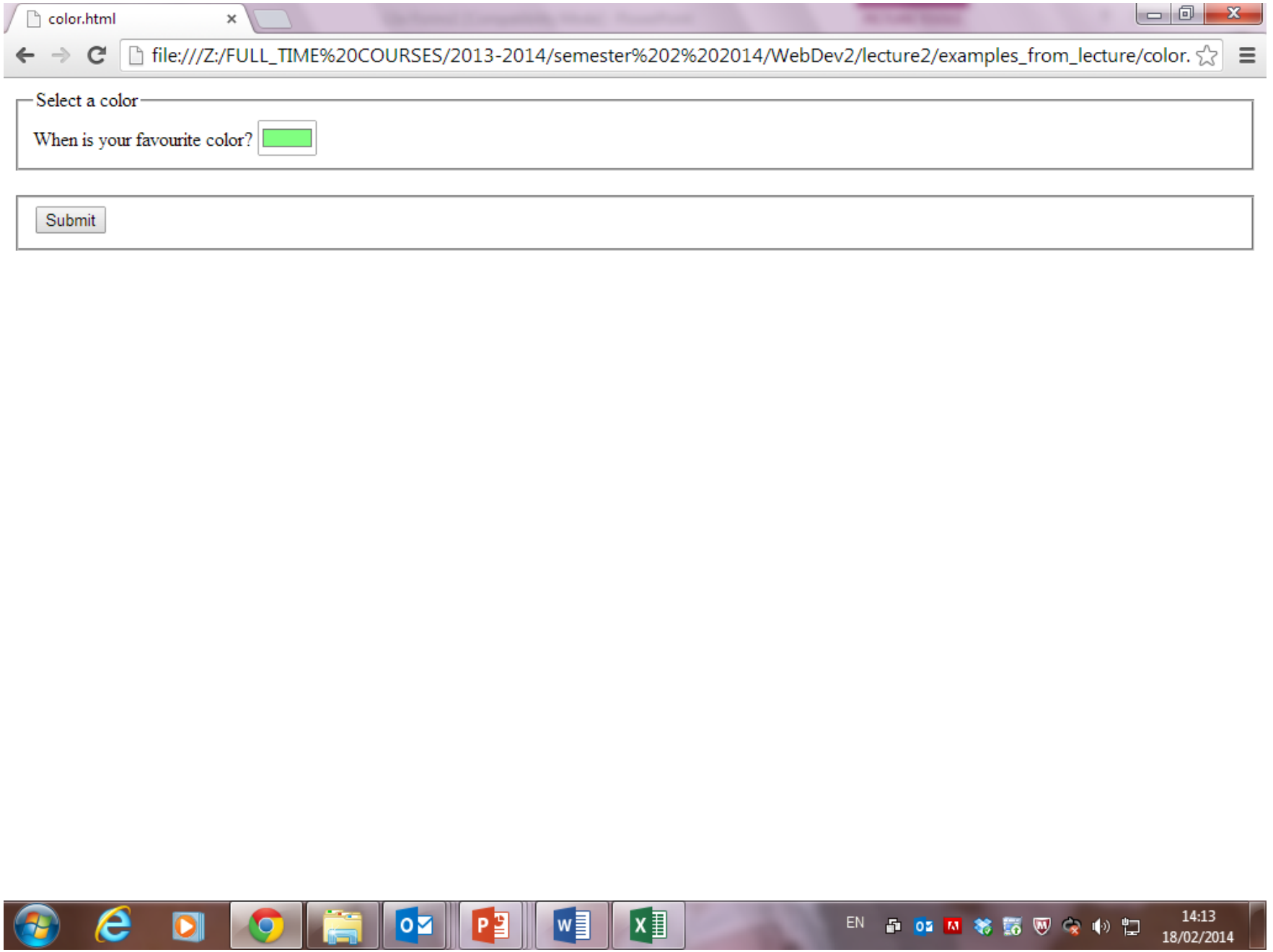
- The new **color** input type allows the user a choice of some basic colors with the options of entering a hex value or using a color picker, similar to what is used in many software packages.

```
    <fieldset>
        <legend>Select a colour  </legend>
                Pick your favourite colour
                <input type="color" name="colour" required>
      </fieldset>
  <br>
<input type="submit">
</form>
```

Color attribute




color.html
file:///Z:/FULL_TIME%20COURSES/2013-2014/semester%202%202014/WebDev2/lecture2/examples_from_lecture/color.
Select a color
When is your favourite color?
Submit
Color
Basic colors:
Custom colors:
Define Custom Colors >>
OK
Cancel
Color|Solid
Hue: 160
Sat: 0
Lum: 0
Red: 0
Green: 0
Blue: 0
Add to Custom Colors
EN
14:12
18/02/2014


color.html
file:///Z:/FULL_TIME%20COURSES/2013-2014/semester%202%202014/WebDev2/lecture2/examples_from_lecture/color.
Select a color
When is your favourite color?
Submit
EN
14:13
18/02/2014

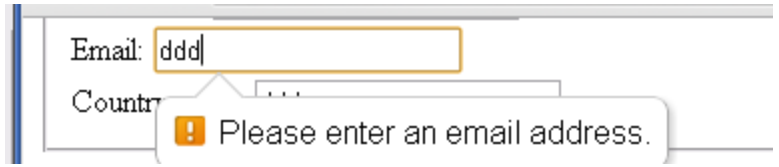
EMAIL ATTRIBUTE

- The email type is used for input fields that should contain an email address.
- Checks that the email has the correct format e.g. name@xyz.ie
- Chrome does not appear, at present, to check for . ie
- Error message: *Please enter an email address* appears, if the user leaves the field blank or enters an invalid email

```
Email: <input type="email" name="useremail" required>
```

EMAIL ATTRIBUTE

E-mail: <input type="email" name="useremail"
title = "Email (Format: john@itb.ie)" required>



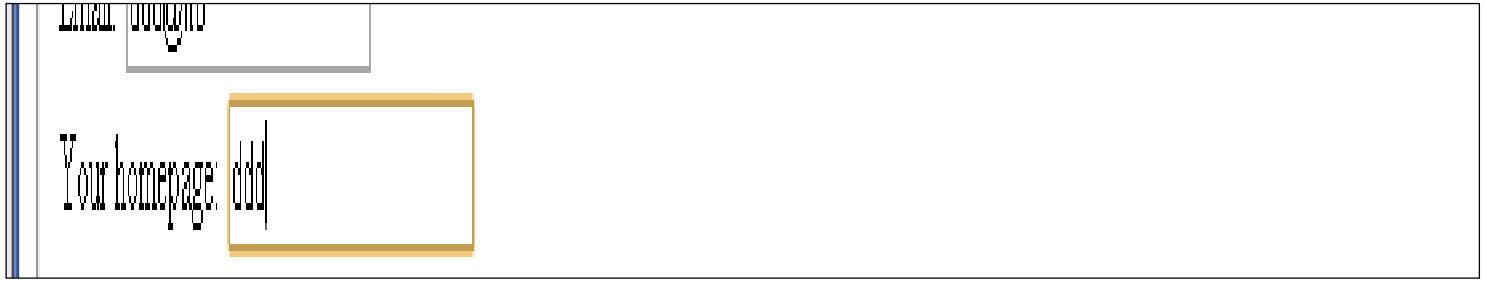
URL ATTRIBUTE

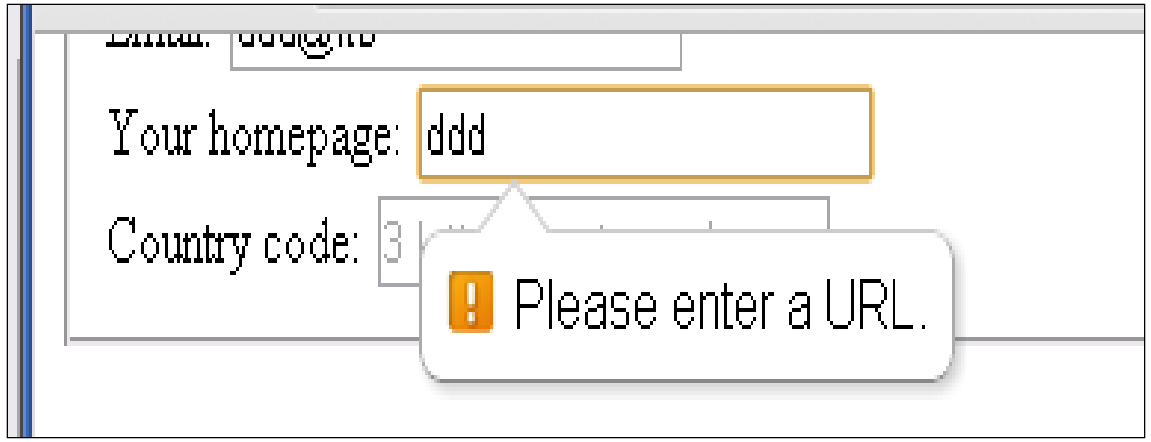
- The url type is used for input fields that should contain a URL address.
- The value of the url field is automatically validated when the form is submitted.
- Please enter a URL appears if the URL field is formatted incorrectly or is left blank.

Your homepage:

```
<input type="url" name="homepage“ required>
```

URL ATTRIBUTE





TELEPHONE ATTRIBUTE

- The **tel** type is used for input fields that should contain a telephone number
- The value of the tel field is automatically validated when the form is submitted.

```
<form action=“ ">
        Telephone: <input type="tel"
name="usertel">
  <br>
  <input type="submit">
</form>
```

TELEPHONE ATTRIBUTE

- The telephone may have a pattern associated with it and a title indicating the format expected

d = matches a digit or blank space

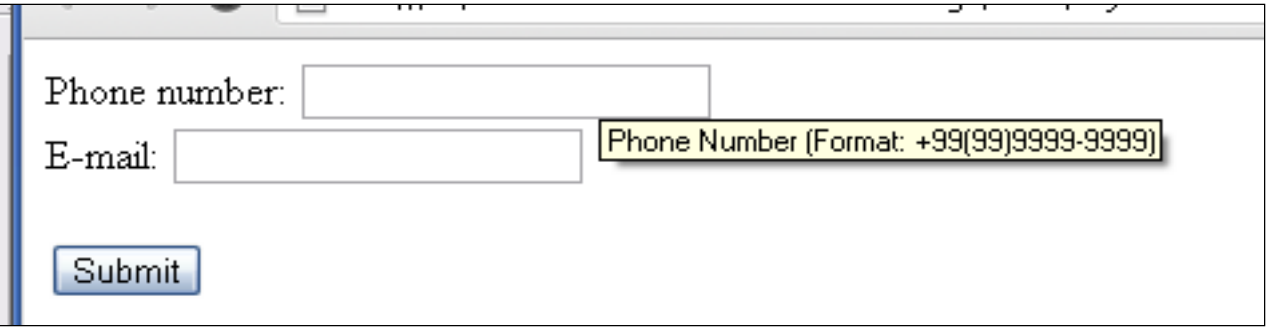
<input type="tel"

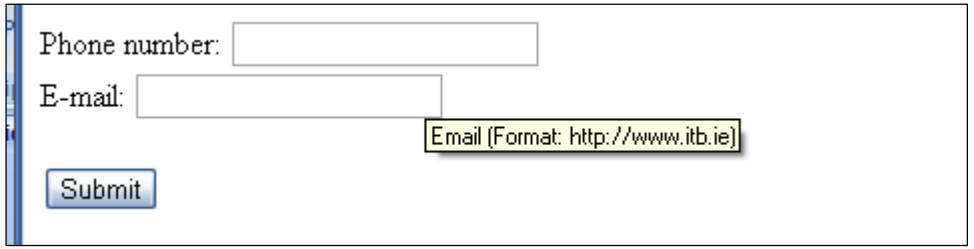
pattern = "[\+]\d{2}[\(]\d{2}[\)]\d{4}[\-]\d{4}"

title = "Phone Number (Format: +99(99)9999-9999)">

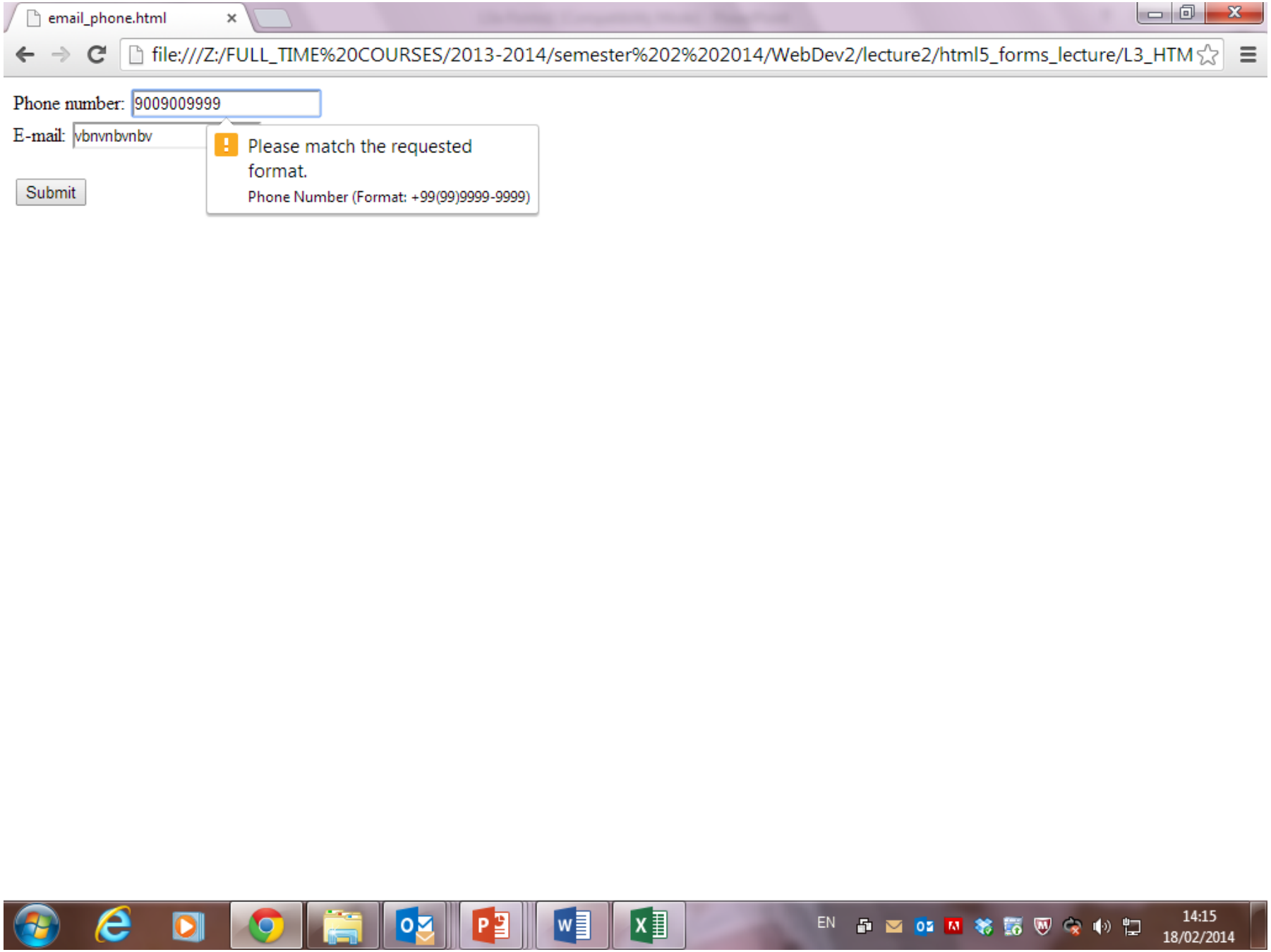
The title attribute gives extra information about an element.
The information is shown as tooltip text when the mouse moves over the element.

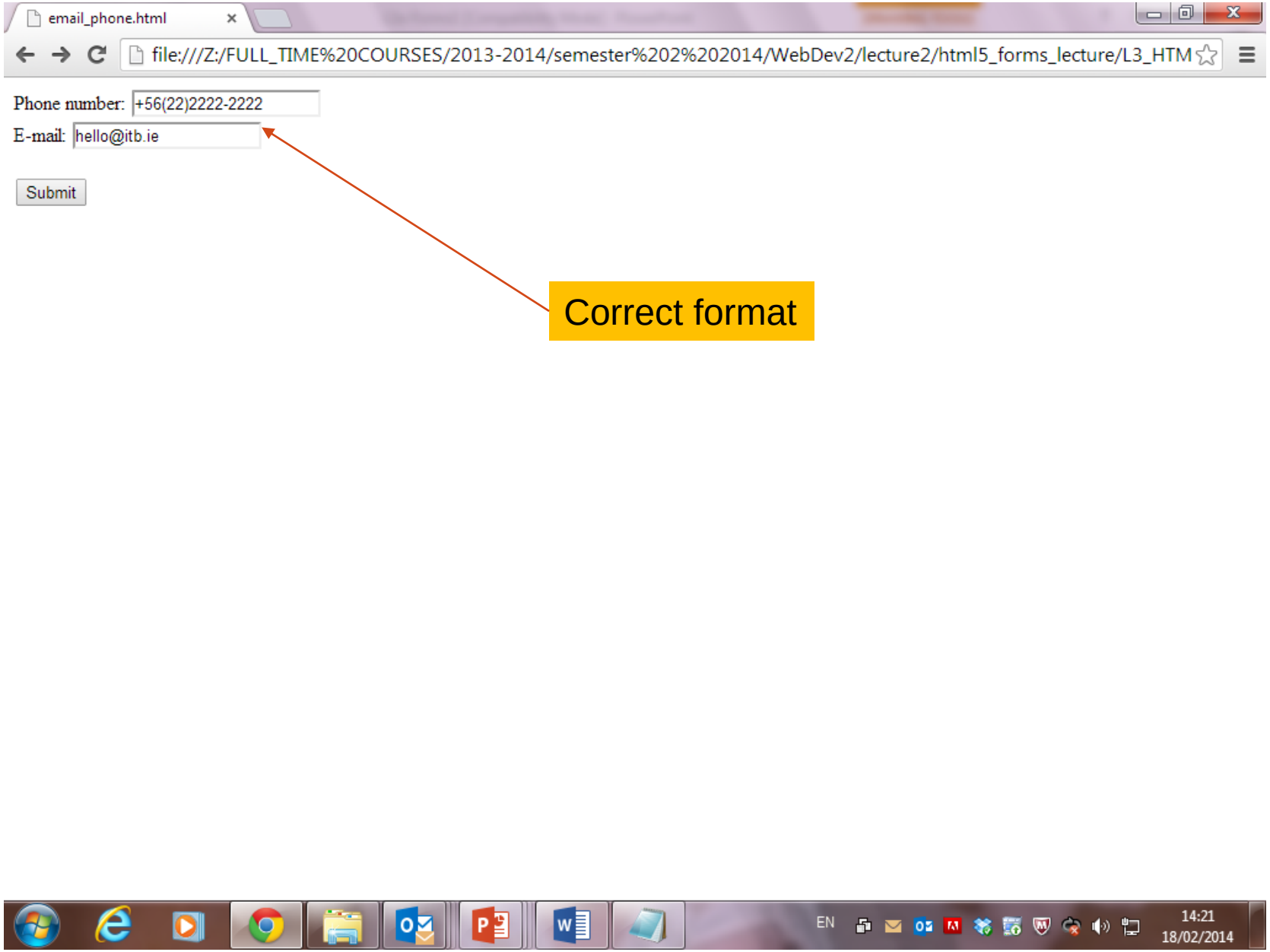
EMAIL AND TELEPHONE





The **title** attribute specifies extra information about an element.
The information is shown as a **tooltip text** when the mouse moves over the element.


email_phone.html
file:///Z:/FULL_TIME%20COURSES/2013-2014/semester%202%202014/WebDev2/lecture2/html5_forms_lecture/L3_HTM
Phone number: 9009009999
E-mail: vbnvnbvnbv
Please match the requested format.
Phone Number (Format: +99(99)9999-9999)
Submit
EN
14:15
18/02/2014


email_phone.html
file:///Z:/FULL_TIME%20COURSES/2013-2014/semester%202%202014/WebDev2/lecture2/html5_forms_lecture/L3_HTM
Phone number: +56(22)2222-2222
E-mail: hello@itb.ie
Submit
Correct format
EN
14:21
18/02/2014

AUTOCOMPLETE ATTRIBUTE

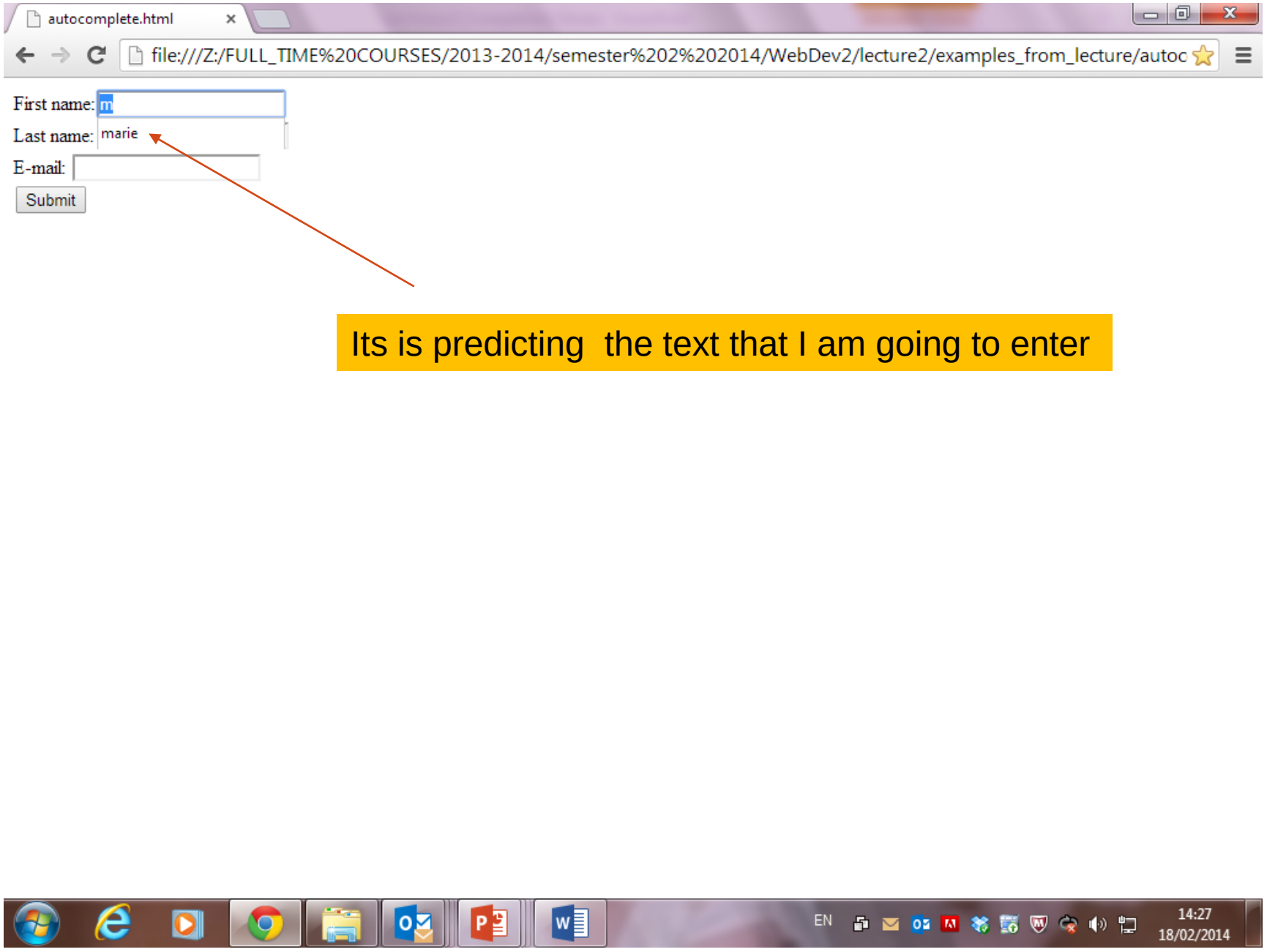
- The **autocomplete** attribute specifies whether a form or input field should have autocomplete on or off.
- When autocomplete is **on,** the browser *automatically completes values based on values that the user has entered before.*
- For example, if the field is named *name* and you had entered several variants of your name in other fields named *name*, then autocompletion provides those options in a dropdown.
- Generally autocompletion is a useful browser feature, but occasionally it can be dangerous. WHY?????

AUTOCOMPLETE ATTRIBUTE

- If the form field contains information such as a credit card number that should be left stored on the user's hard drive then you should turn autocompletion off.
- You can turn it off by setting AUTOCOMPLETE to **OFF**
- **Tip:** It is possible to have autocomplete "**on**" for the form, and "**off**" for specific input fields, or vice versa.
- **Note:** The autocomplete attribute works with <form> and the following <input> types:
- text, search, url, tel, email, password, datepickers, range, and color.

AUTOCOMPLETE ATTRIBUTE

```
<form action="showForm.html" 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>
```


autocomplete.html
file:///Z:/FULL_TIME%20COURSES/2013-2014/semester%202%202014/WebDev2/lecture2/examples_from_lecture/autoc
First name:
Last name: marie
E-mail:
Submit
Its is predicting the text that I am going to enter
EN
14:27
18/02/2014

RECAP OF HTML5 FEATURES

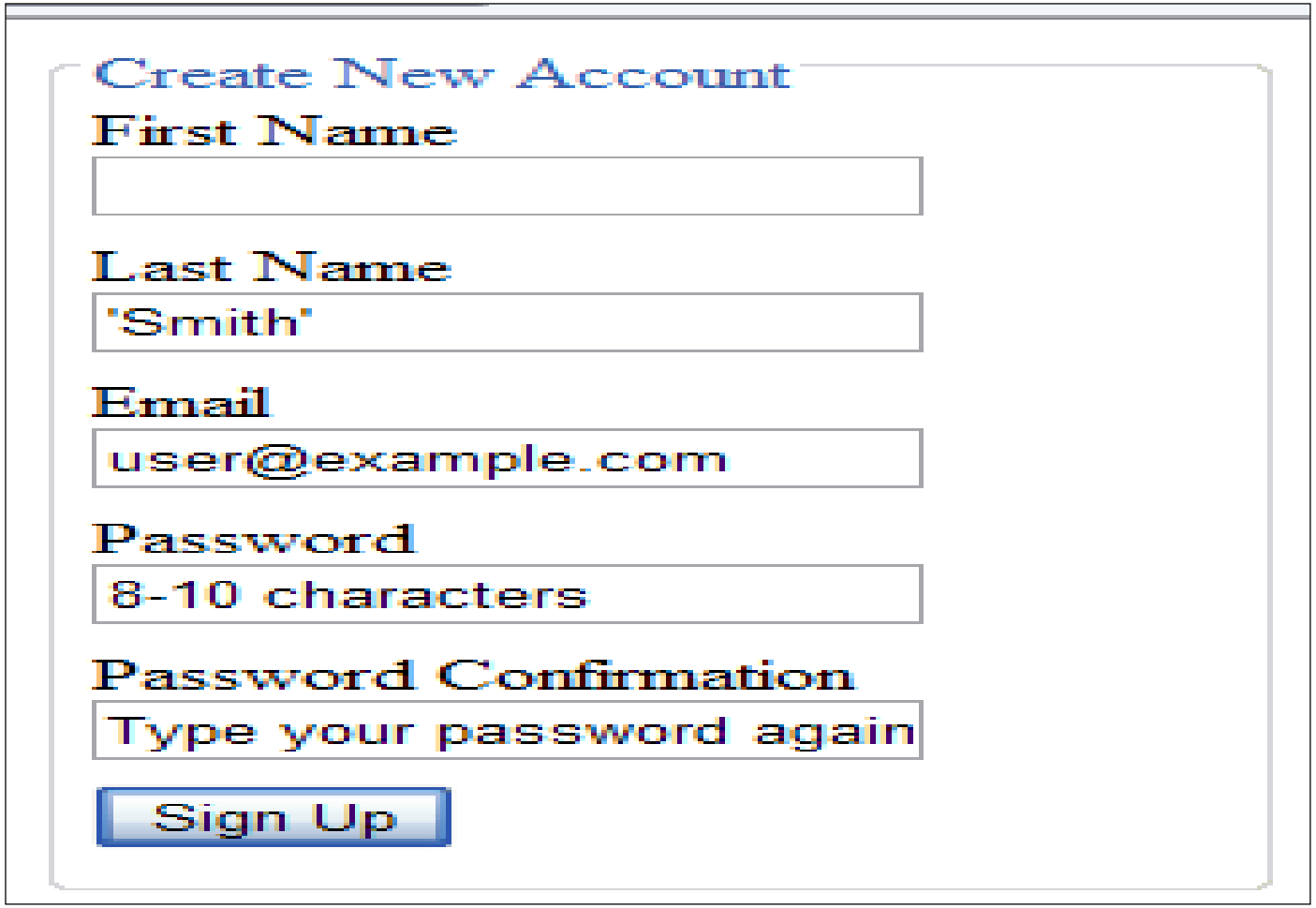
- `required`
- `placeholder`
- `autofocus`
- `pattern`

input attributes

- Date
- Number
- Time
- Range
- Color
- Email
- Url
- Tel

There are more…

WHAT ELEMENTS WOULD I USE FOR THIS FORM



Check that all fields are filled in.
Set autofocus on the first field