



Web Technologies and Programming

Lecture 11

HTML 5 Form elements

Summary of the previous lecture

- **Creating forms in HTML**
 - **Common Form Attributes**
 - **When to Use GET AND POST?**
 - **Form elements**
 - Textbox
 - Password Field
 - Hidden Field
 - Checkbox
 - Radio Button
 - Text Area
 - Select List
 - Submit Button
 - Reset Button
- **Adding form elements**

Outline

- **HTML5 enhancements in form**
- **XHTML**

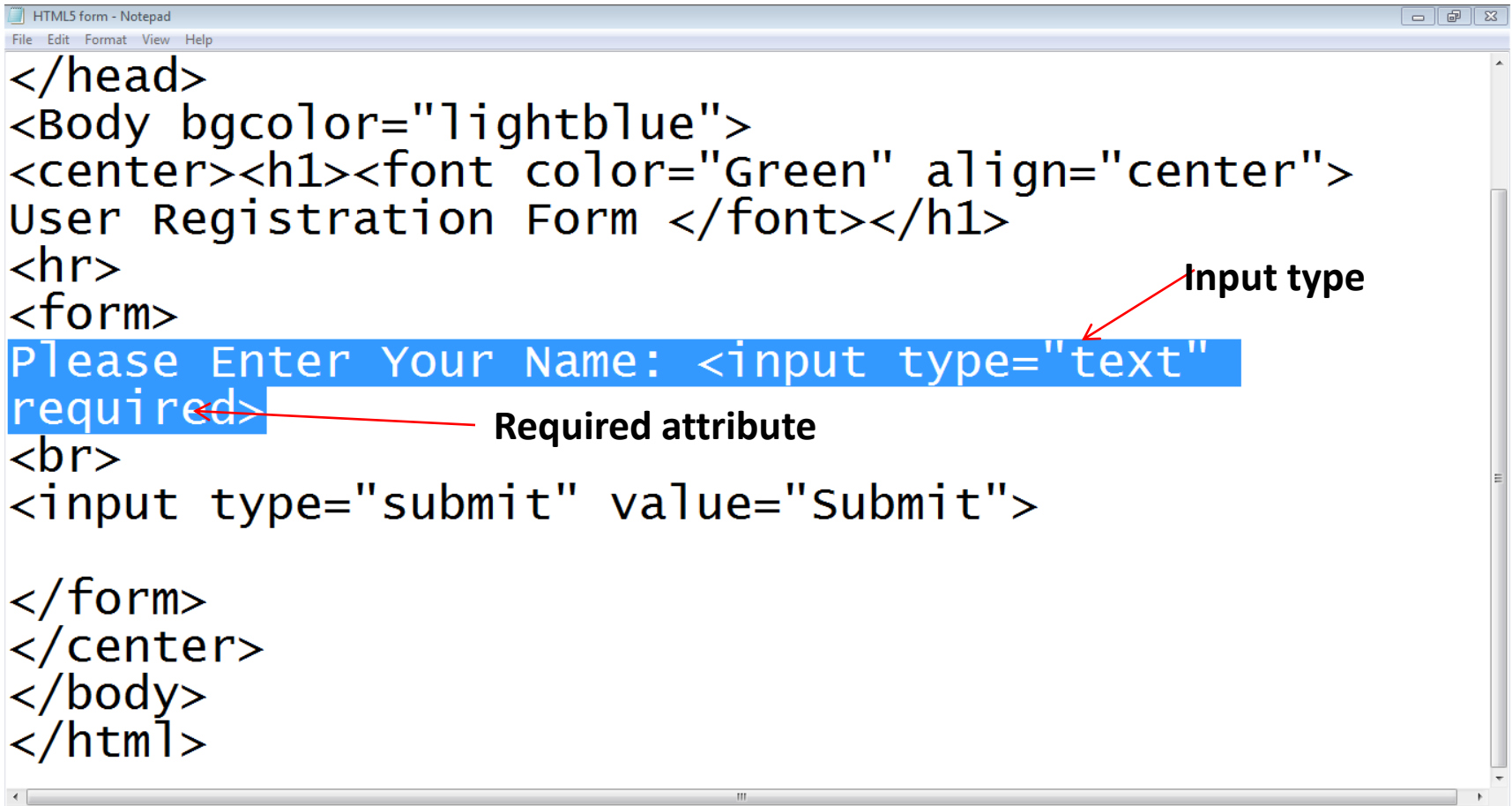
1. HTML-5 form enhancement

- HTML5 enhances the forms in **two ways**
 - Adding new attributes to **existing** elements
 - **New** elements

1.1 The required attribute

- Required attribute:
 - tells the browser to **only submit** the form if the field in question is **filled out**
 - **ensures** that all necessary information is provided by the user
 - **<input type="text" name="name" required>**

1.1 The required attribute...



```
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your Name: <input type="text"
required>
<br>
<input type="submit" value="Submit">

</form>
</center>
</body>
</html>
```

Input type

Required attribute

1.1 The required attribute...



The screenshot shows a web browser window with a single tab titled 'HTML FOrms'. The address bar displays a file path: `file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/HTML5%20fo`. The main content area has a light blue background and features the title 'User Registration Form' in a large, bold, green serif font. Below the title is a horizontal line. Underneath the line, the text 'Please Enter Your Name:' is followed by an empty text input field. To the right of the input field, a small white tooltip with a yellow warning icon and the text 'Please fill out this field.' is visible. Below the input field is a 'Submit' button. A red arrow points from the text 'Error message' to the tooltip.

User Registration Form

Please Enter Your Name:

Submit

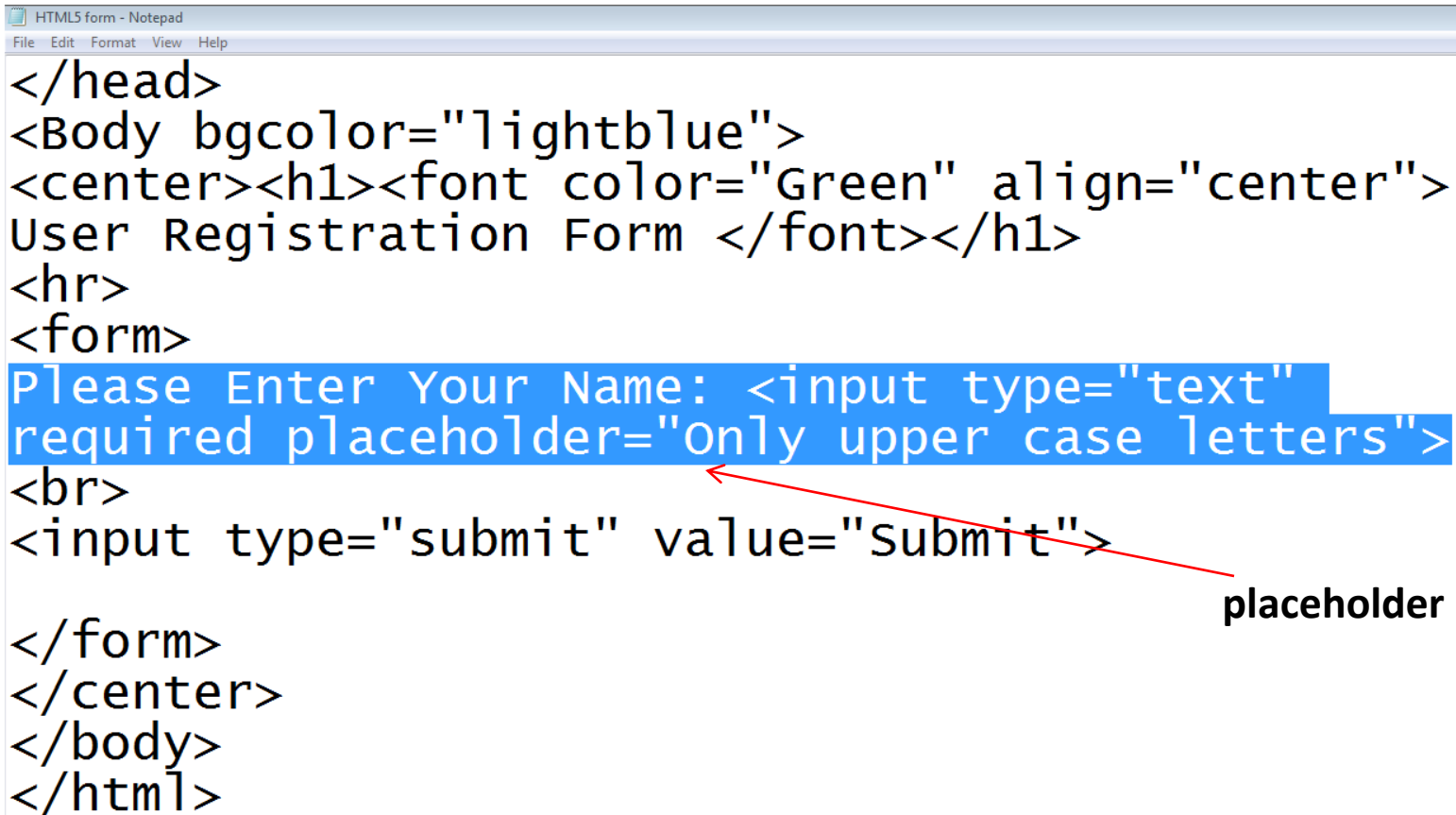
! Please fill out this field.

Error message

1.2 The placeholder attribute

- Placeholder attribute:
 - Allows a **short hint** to be displayed inside the form element
 - tell the user **what data** should be entered in that field
 - **<input type="text" name="name"**
placeholder="Only upper case letters" >

1.2 The placeholder attribute...

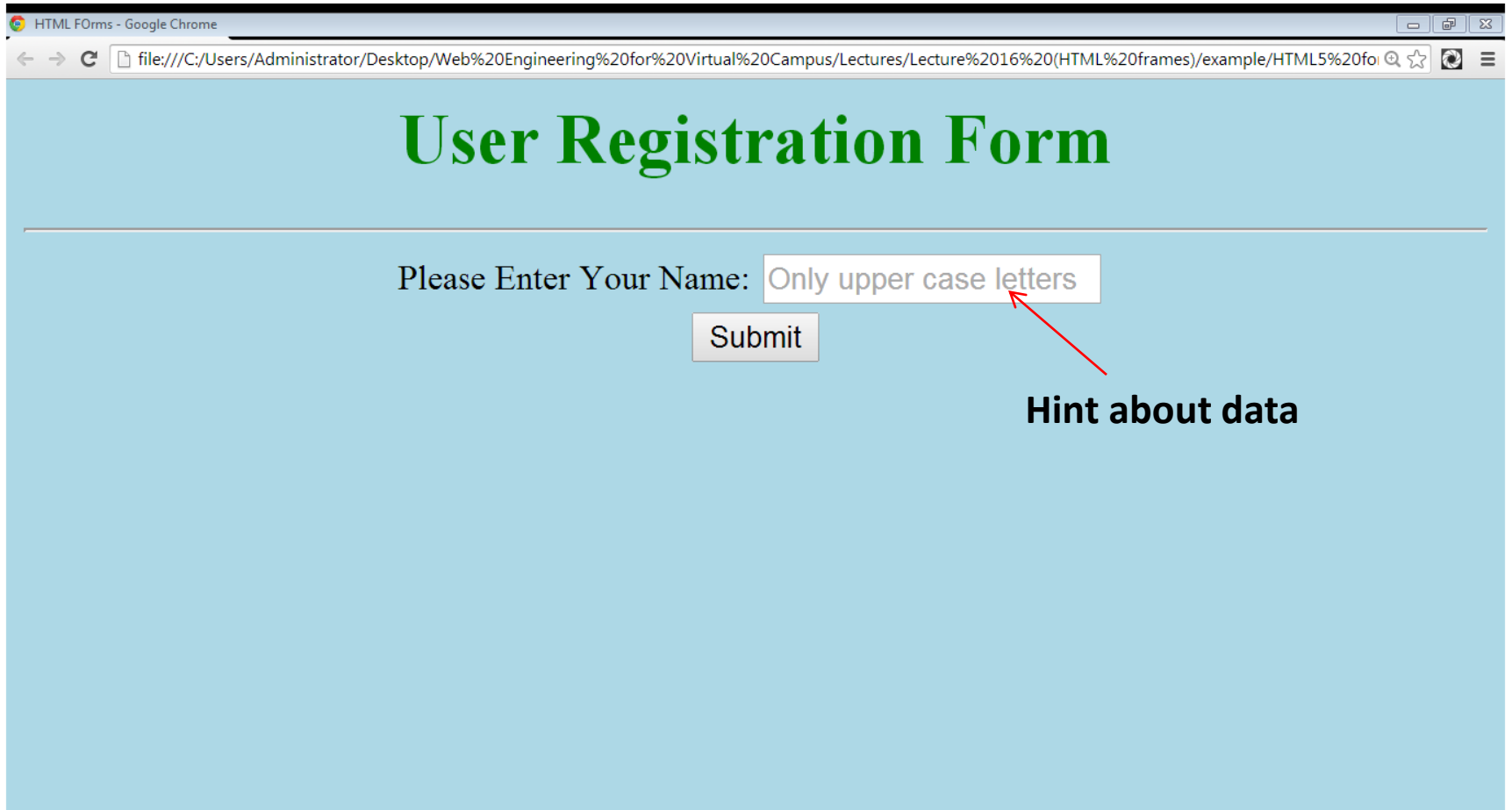


```
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your Name: <input type="text"
required placeholder="only upper case letters">
<br>
<input type="submit" value="submit">

</form>
</center>
</body>
</html>
```

placeholder

1.2 The placeholder attribute...



The screenshot shows a web browser window with the title "HTML FOrms - Google Chrome". The address bar displays a file path: `file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/HTML5%20fo`. The main content area has a light blue background and features the title "User Registration Form" in a large, green, serif font. Below the title is a horizontal line. Underneath the line, the text "Please Enter Your Name:" is followed by a text input field. The input field contains the placeholder text "Only upper case letters" in a light gray font. Below the input field is a "Submit" button. A red arrow points from the text "Hint about data" to the placeholder text in the input field.

User Registration Form

Please Enter Your Name:

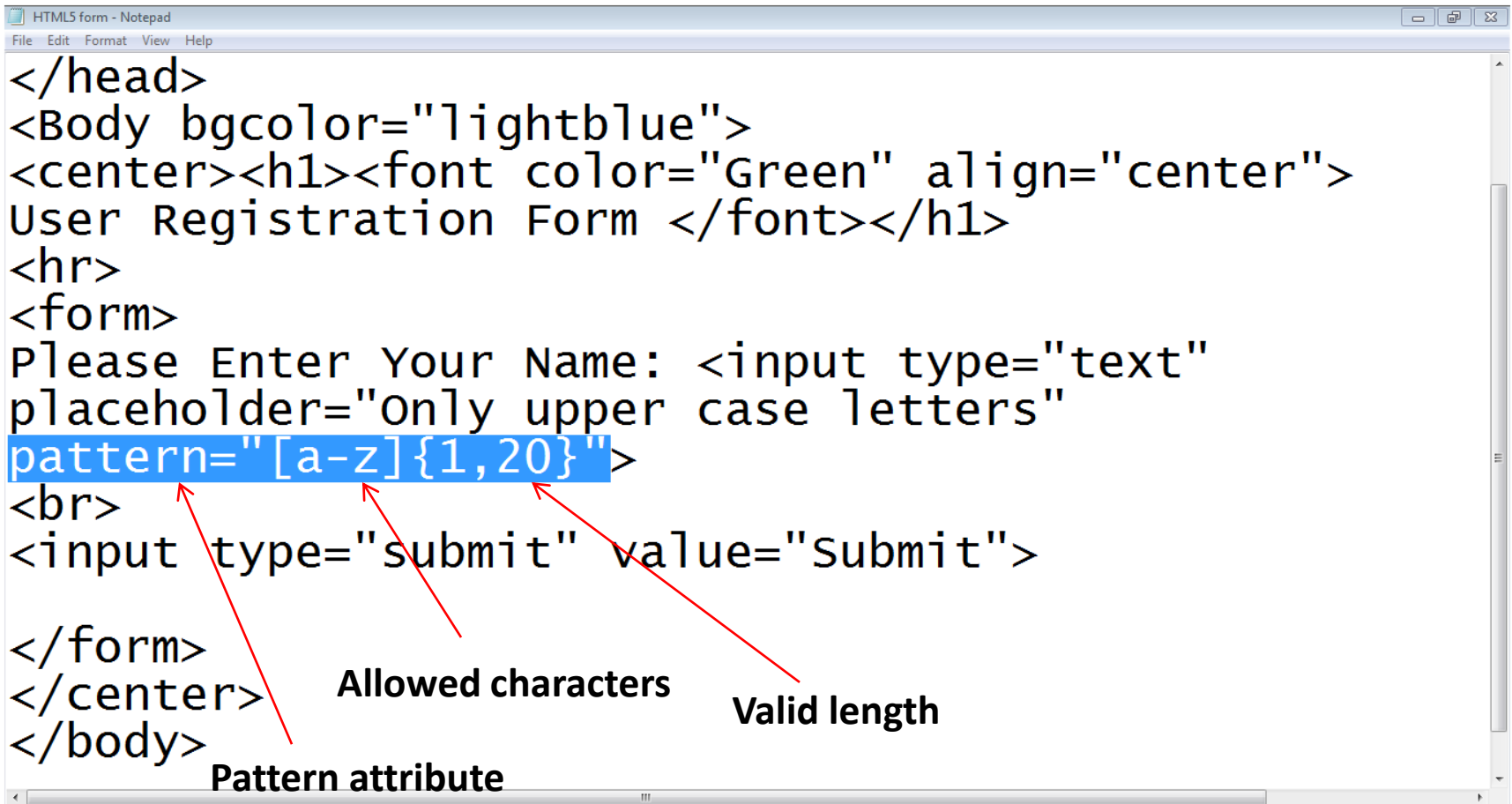
Submit

Hint about data

1.3 The pattern attribute

- **pattern attribute:**
 - enables you to provide a **regular expression** that the user's input must match in order to be considered valid
 - `<input type="text" pattern="Regular Expression">`
 - `<input type="text" pattern="[a-z]{1,20}">`

1.3 The pattern attribute



```
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your Name: <input type="text"
placeholder="Only upper case letters"
pattern="[a-z]{1,20}">
<br>
<input type="submit" value="Submit">

</form>
</center>
</body>
```

Pattern attribute

Allowed characters

Valid length

1.3 The pattern attribute...

The screenshot shows a web browser window with the title 'HTML Forms'. The address bar displays the file path: `file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/HTML5%20form.h`. The main content area has a light blue background and features the title 'User Registration Form' in green. Below the title, there is a form with the label 'Please Enter Your Name:'. The input field contains the text 'A1'. A red arrow points from the text 'Invalid input' below the input field to the text 'A1'. To the right of the input field is a 'Submit' button. To the right of the 'Submit' button is an error message box with a yellow warning icon and the text 'Please match the requested format.'. A red arrow points from the text 'Error message' below the error message box to the error message box.

HTML Forms

file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/HTML5%20form.h

User Registration Form

Please Enter Your Name:

Submit

Please match the requested format.

Invalid input

Error message

1.3 The pattern attribute...

- **Writing Regular Expression:**
 - **[]**: makes a class of characters
 - **-**: means a range of characters
 - **[a-z],[0-9]**
 - **[^]**: negates the class of character
 - **[^0-9]**
 - **{n}**: matches a character, class or sub-pattern for n times
 - **{ n, m}**: matches a character, class or sub-pattern for minimum n times and maximum m times

1.3 The pattern attribute...

- **Example patterns:**

– `<input type="text" pattern="[a-zA-Z]{1,20}">`

Only alphabets Allowed length

– `<input type="text" pattern="[a-zA-Z]{1,20} [ ] [a-zA-Z]{1,20}">`

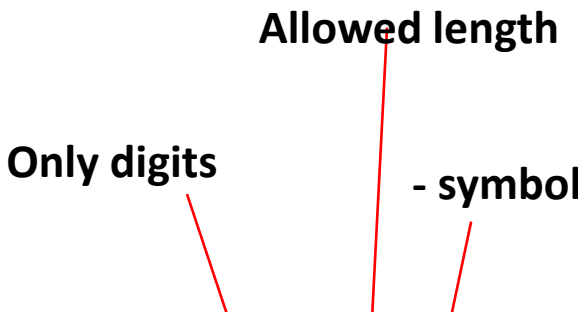
Only alphabets Allowed length Space is allowed

Last name Allowed length

1.3 The pattern attribute...

- **Example patterns:**

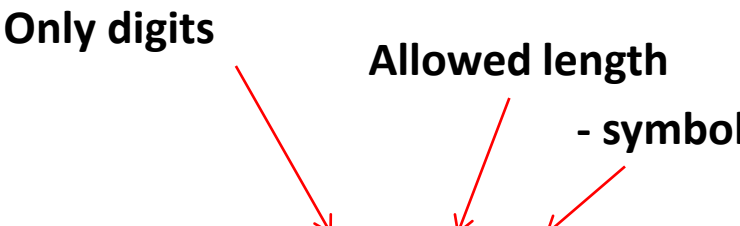
– `<input type="text" pattern="[0-9]{2}[-][0-9]{2}[-][0-9]{4}">`



Annotations for the first pattern:

- Only digits (points to `[0-9]`)
- Allowed length (points to `{2}`)
- symbol (points to `[-]`)

– `<input type="text" pattern="[0-9]{5} [-][0-9]{7} [-][0-9]{1}">`



Annotations for the second pattern:

- Only digits (points to `[0-9]`)
- Allowed length (points to `{5}`)
- symbol (points to `[-]`)

1.4 The disabled attribute

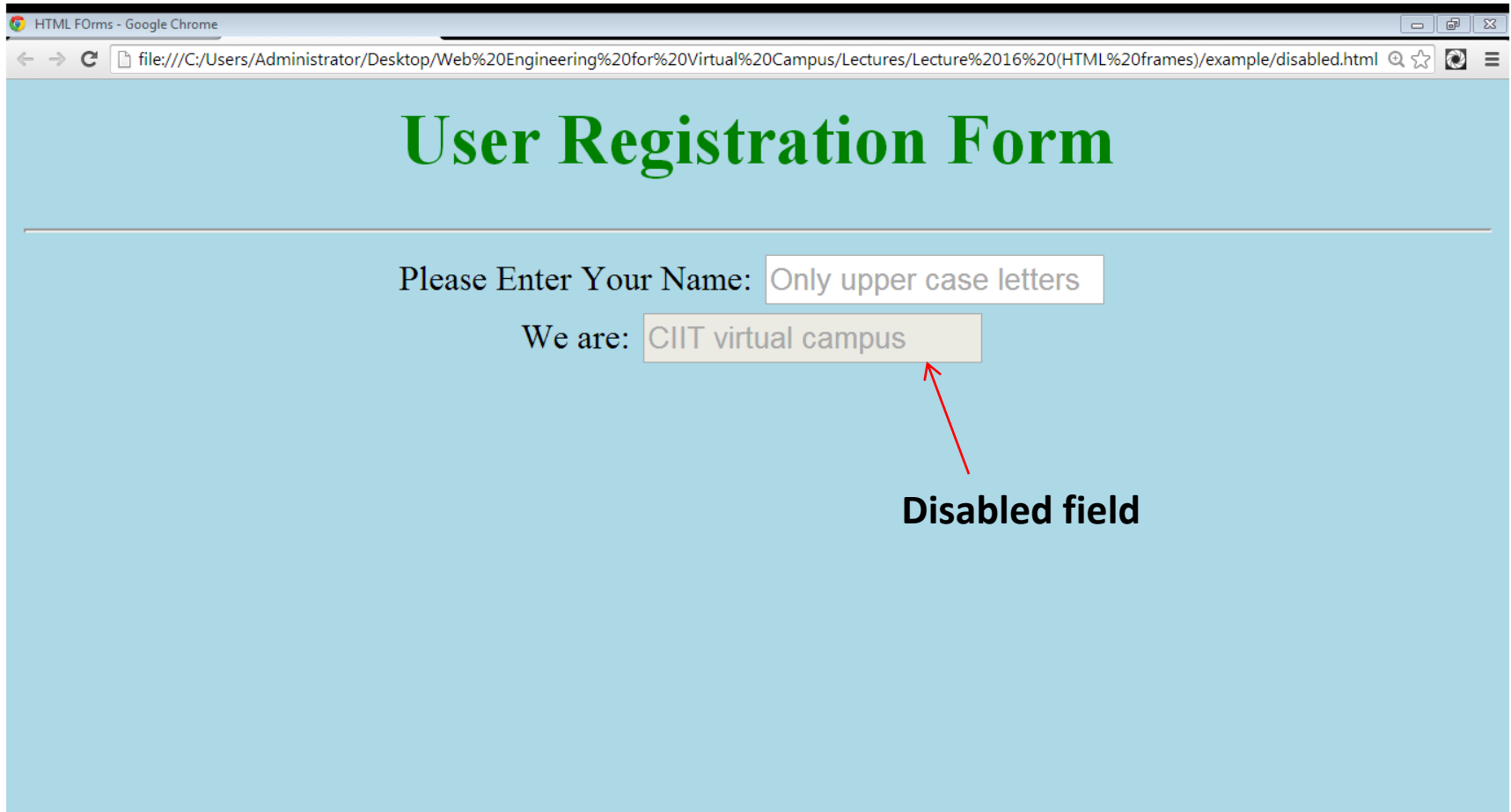
- **disabled attribute:**
 - have the content grayed out in the browser
 - prohibit the user from focusing on a form control that has the disabled
 - `<input type="text" disabled>`

1.4 The disabled attribute...

```
HTML5 form - Notepad
File Edit Format View Help
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your Name: <input type="text"
placeholder="Only upper case letters"
pattern="[a-z]{1,20}">
<br>
We are: <input type="text"
placeholder="CIIT virtual campus"
disabled>
<br>
<input type="submit" value="Submit">
<br>
</form>
</center>
```

Input field is disabled

1.4 The disabled attribute...



The screenshot shows a web browser window titled 'HTML Forms - Google Chrome'. The address bar displays a file path: `file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/disabled.html`. The main content area has a light blue background and features the title 'User Registration Form' in a large, bold, green serif font. Below the title is a horizontal line. The form contains two text input fields. The first field is preceded by the label 'Please Enter Your Name:' and contains the text 'Only upper case letters'. The second field is preceded by the label 'We are:' and contains the text 'CIIT virtual campus'. A red arrow points from the text 'Disabled field' to the second input field, which is highlighted with a light gray background, indicating it is disabled.

User Registration Form

Please Enter Your Name:

We are:

Disabled field

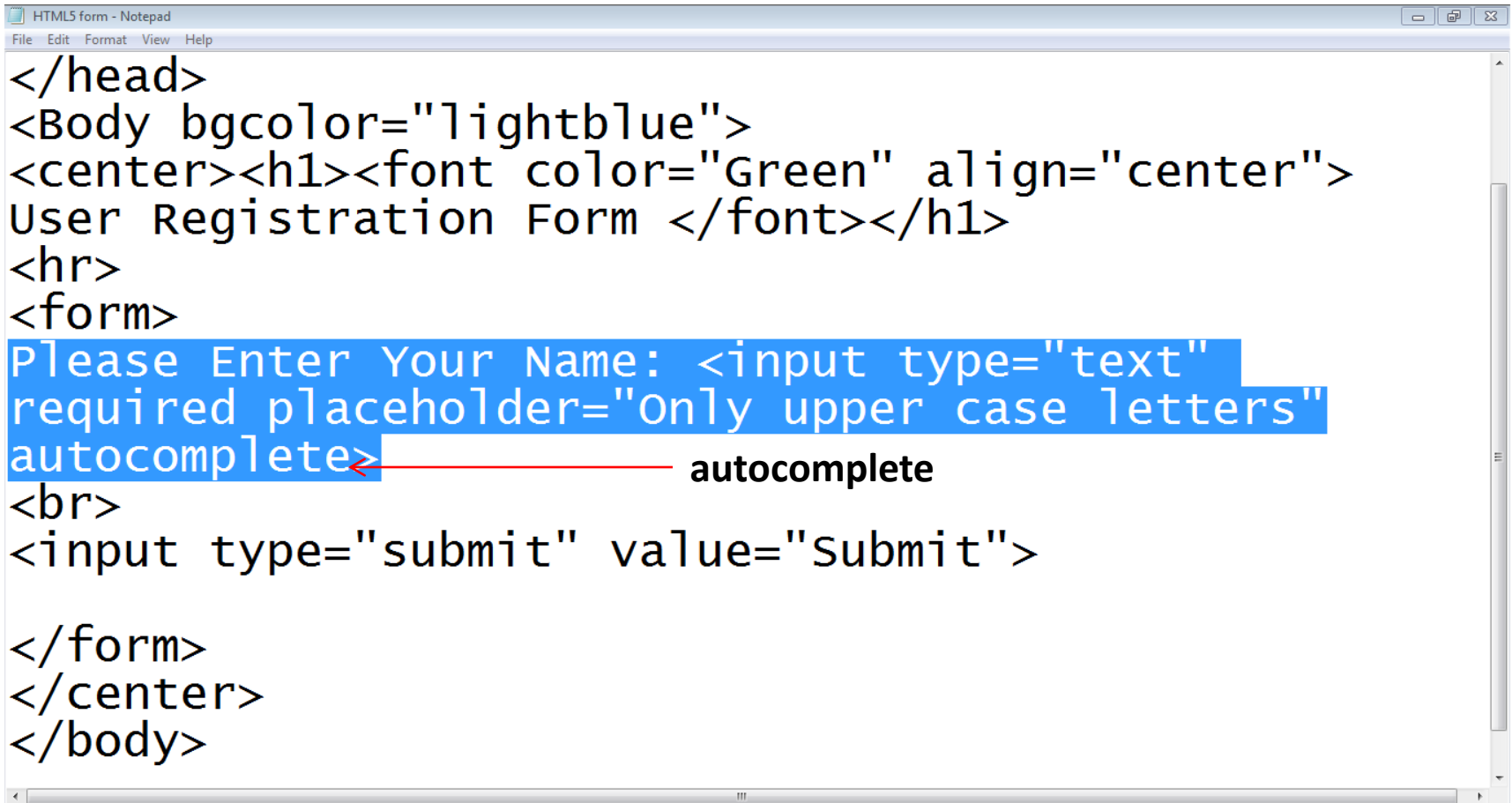
1.5 The read only attribute

- **read only attribute:**
 - it makes it impossible for the user to edit the form field
 - the field can receive focus
 - `<input type="text" readonly>`

1.6 The autocomplete attribute

- The autocomplete attribute:
 - this will be a **drop-down** list that appears when the user **begins typing**
 - **<input type="text" autocomplete>**

1.6 The autocomplete attribute...



```
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your Name: <input type="text"
required placeholder="Only upper case letters"
autocomplete>
<br>
<input type="submit" value="Submit">

</form>
</center>
</body>
```

1.7 The datalist element

- The datalist element:
 - a text field with a set of predefined autocomplete options
 - First we define an input field with list attribute
 - Then we define the datalist
 - `<input type="text" list="colors">`
 - `<datalist id="colors">`
 - `<option>Red</option>`
 - `<option>Red</option>`
 - `</datalist>`

1.7 The datalist element...

```
HTML5 form - Notepad
File Edit Format View Help
pattern="[a-z]{1,20}"
<br>
We are: <input type="text"
placeholder="CIIT virtual campus"
disabled>
<br>
Your favorite color:
<input type="text" list="colors">
    <datalist id="colors">
        <option>Red</option>
        <option>Red</option>
    </datalist>
<br>
</form>
```

List attribute

Datalist starts

options

Datalist ends

1.7 The datalist element...

HTML Forms x

file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/HTML5%20fo

User Registration Form

Please Enter Your Name:

We are:

Your favorite color:

- Red
- Red

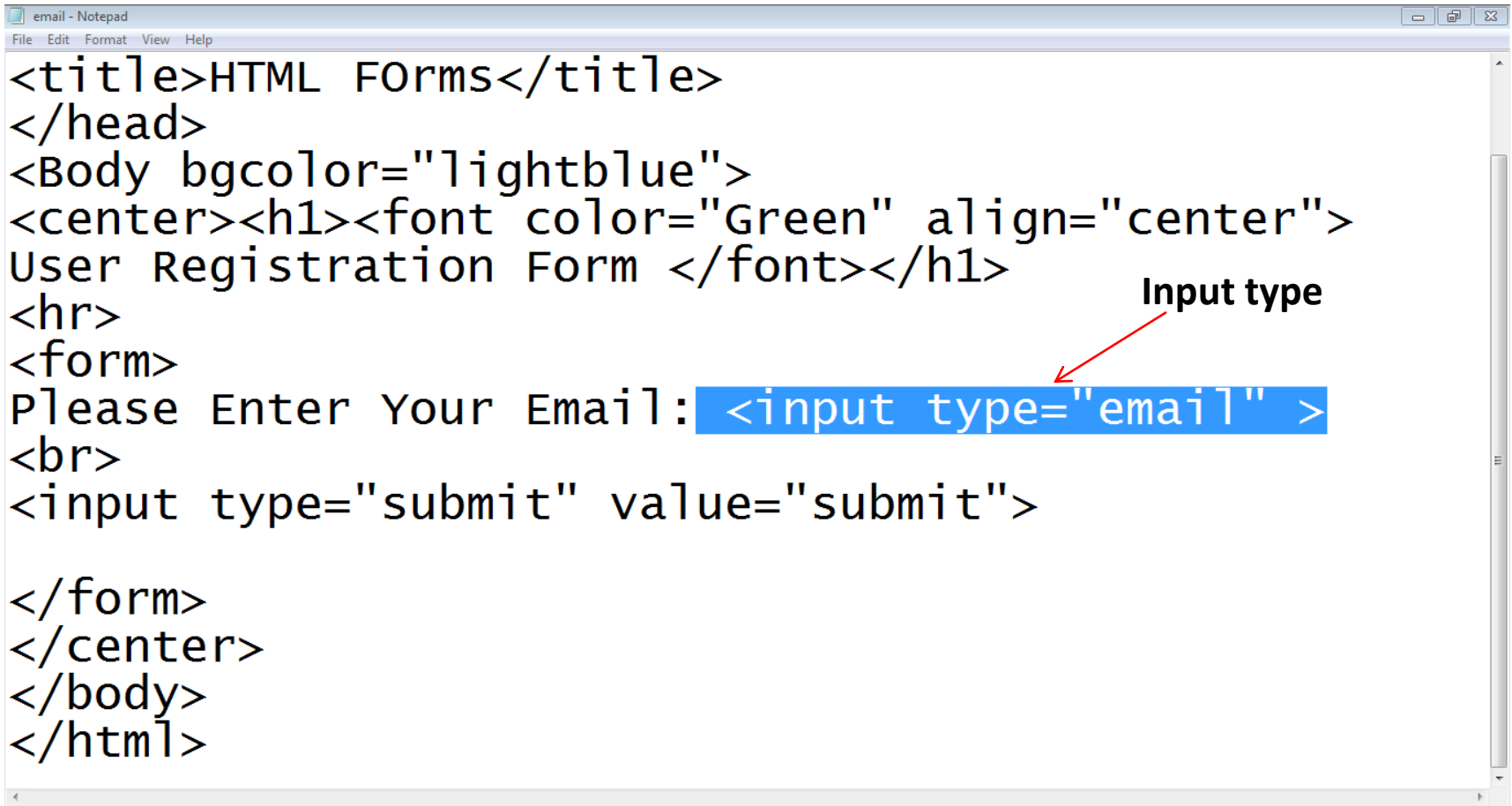
2. HTML 5 new elements

- **Email element**
- **Date element**
- **Number element**
- **Color element**

2.1 Email element

- The email element:
 - It ensures that user enters a **valid email** address
 - `<input type="email" name="email">`

2.1 Email element



```
<title>HTML Forms</title>
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your Email: <input type="email" >
<br>
<input type="submit" value="submit">

</form>
</center>
</body>
</html>
```

2.2 Date element

- The date element:
 - It shows a calendar to user to select a date
 - `<input type="date" name="DoB">`

2.2 Date element...

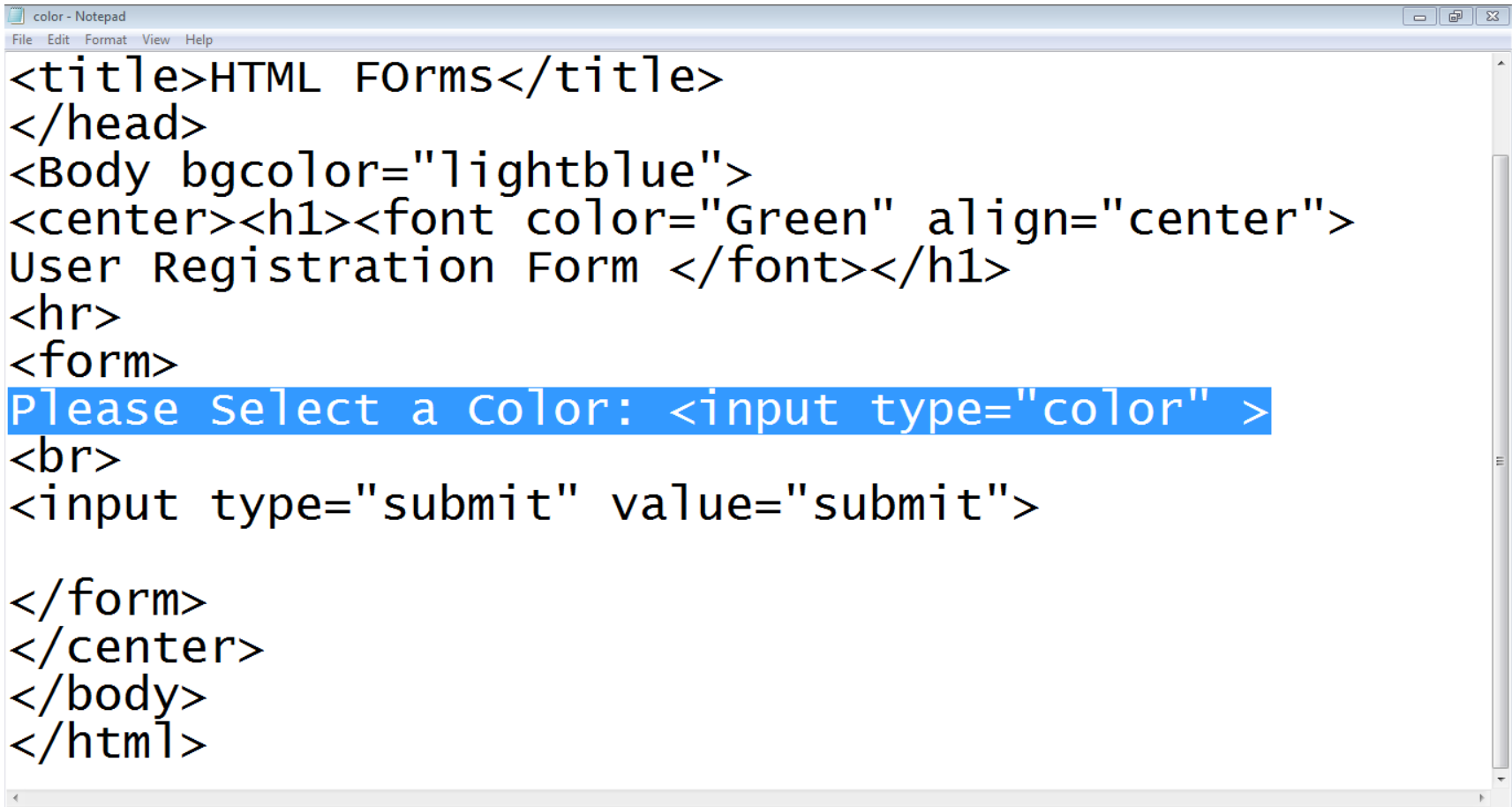
```
date - Notepad
File Edit Format View Help
<title>HTML Forms</title>
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Enter Your DoB: <input type="date" >
<br>
<input type="submit" value="submit">

</form>
</center>
</body>
</html>
```

2.3 Color element

- The color element:
 - It facilitate the user to choose a color
 - `<input type="color" name="color">`

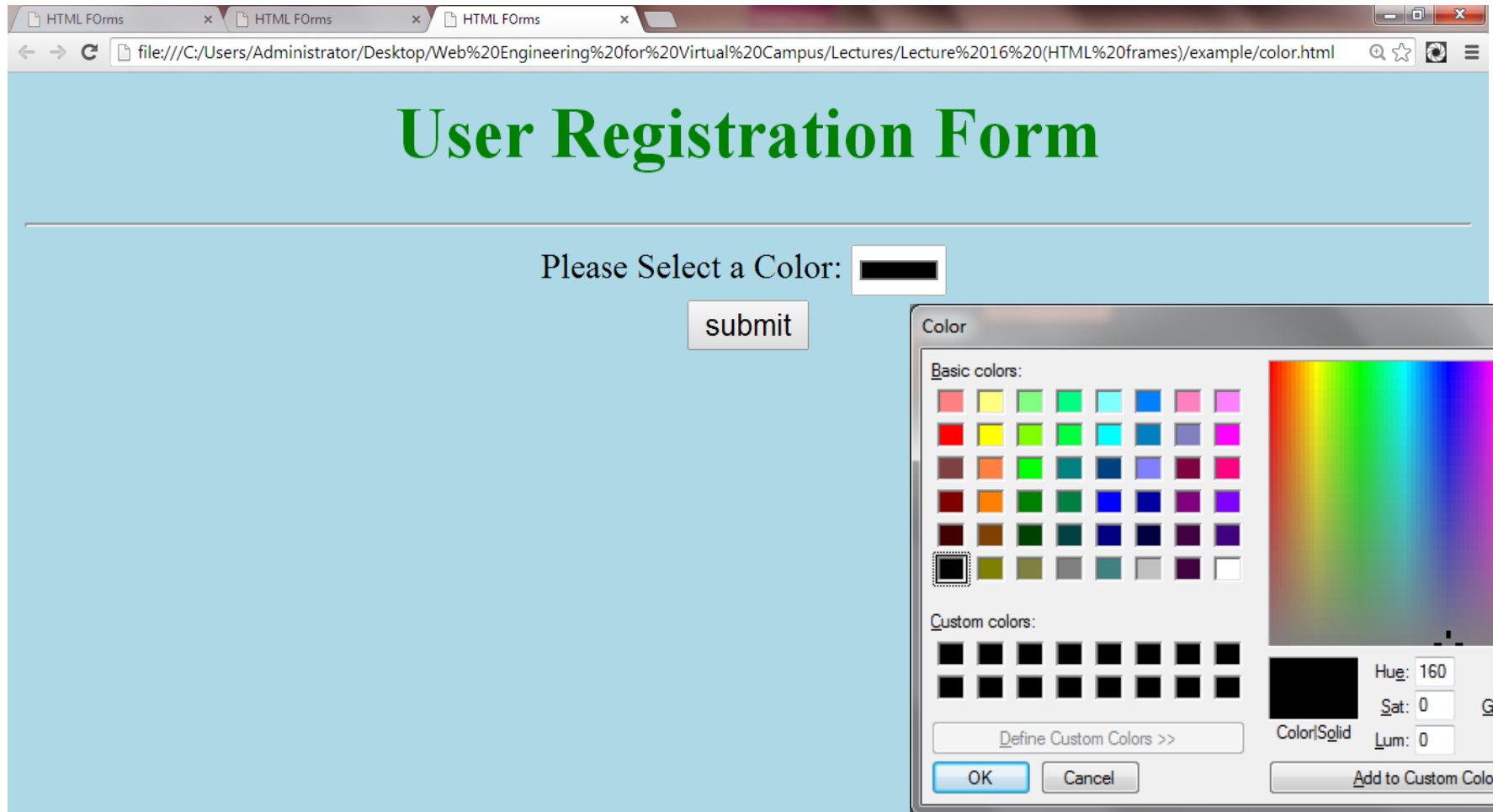
2.3 Color element....



```
<title>HTML Forms</title>
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please Select a color: <input type="color" >
<br>
<input type="submit" value="submit">

</form>
</center>
</body>
</html>
```

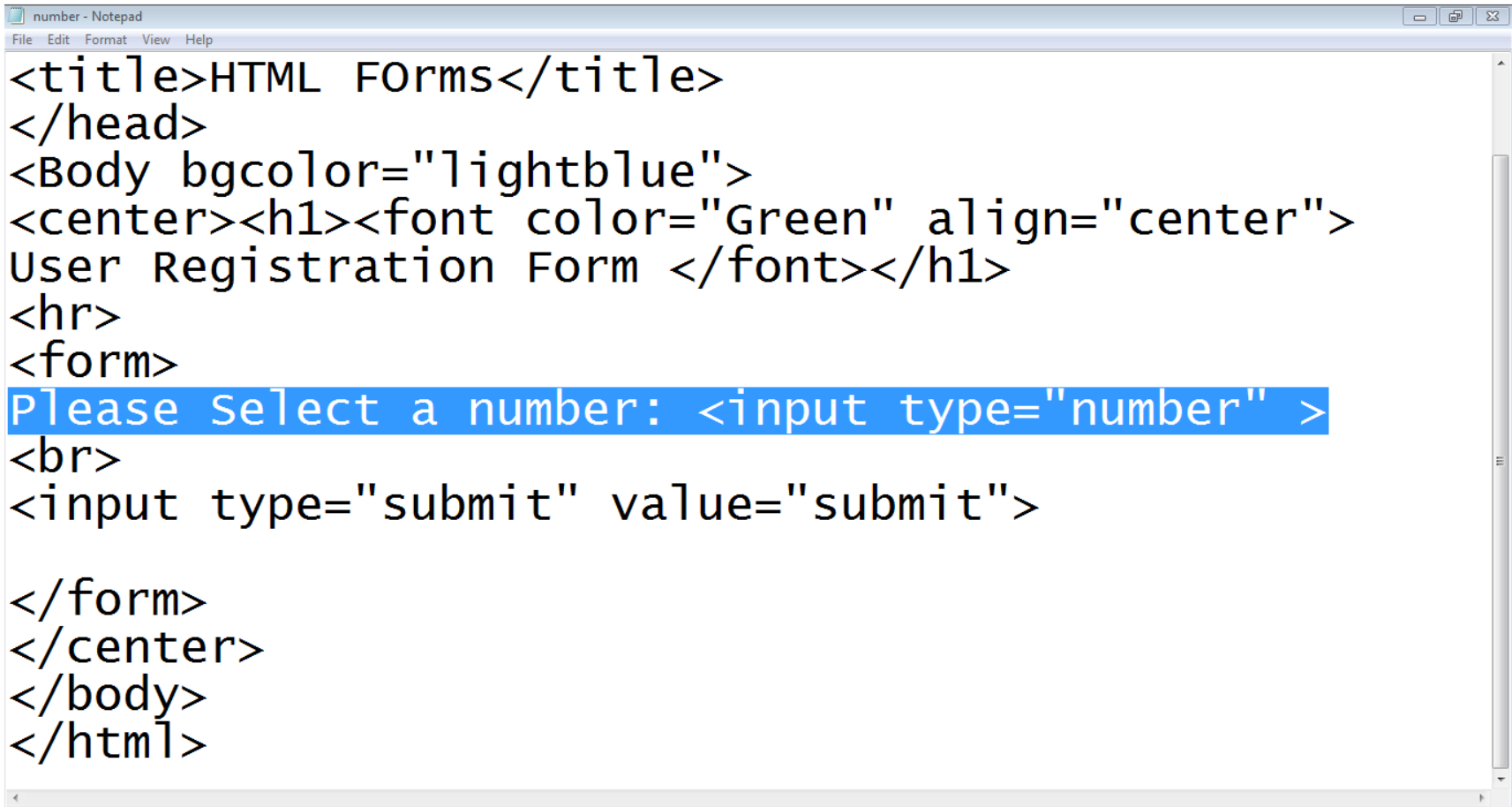
2.3 Color element...



2.4 Number element

- The number element:
 - It ensures that user enters only a numeric value
 - `<input type="number" name="number">`

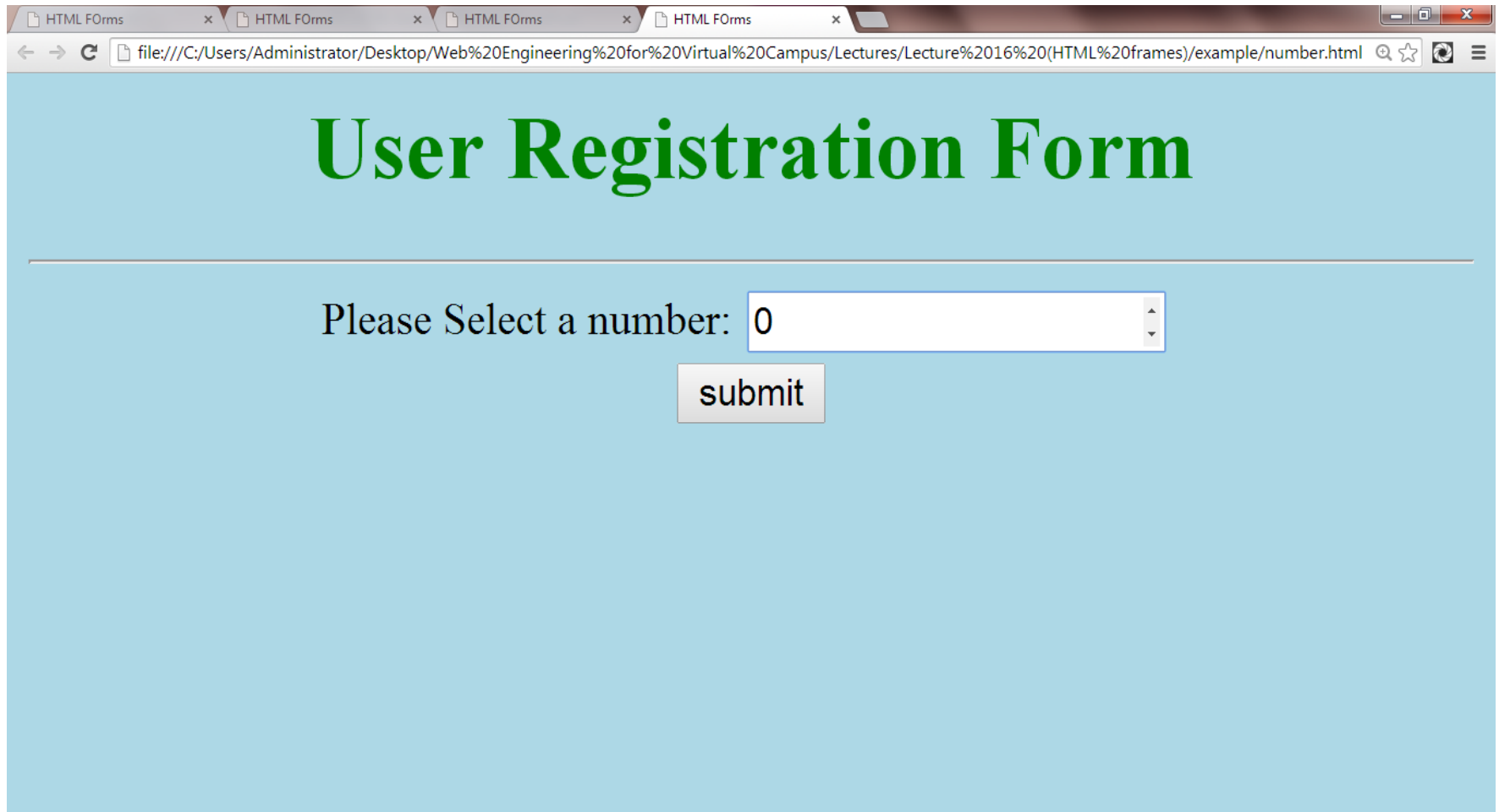
2.4 Number element...



```
<title>HTML Forms</title>
</head>
<Body bgcolor="lightblue">
<center><h1><font color="Green" align="center">
User Registration Form </font></h1>
<hr>
<form>
Please select a number: <input type="number" >
<br>
<input type="submit" value="submit">

</form>
</center>
</body>
</html>
```

2.4 Number element...



The screenshot shows a web browser window with multiple tabs labeled "HTML Forms". The address bar displays the file path: `file:///C:/Users/Administrator/Desktop/Web%20Engineering%20for%20Virtual%20Campus/Lectures/Lecture%2016%20(HTML%20frames)/example/number.html`. The main content area has a light blue background and features the title "User Registration Form" in a large, bold, green serif font. Below the title, a horizontal line separates it from the form content. The form consists of the text "Please Select a number:" followed by a white input field containing the value "0". Below the input field is a grey button with the text "submit".

User Registration Form

Please Select a number: 0

submit

3. XHTML

- **XHTML**
- **EX**tensible **H**yper**T**ext **M**arkup **L**anguage
- XHTML is almost identical to HTML
- **Stricter version** than HTML
- XHTML is HTML defined as an XML application
- XHTML is supported by all major browsers

3. XHTML

- `<body>`
 `<h1>Bad HTML`
 `<p>This is a paragraph`
 `</body>`
- Above will work in browsers.
- Above can work if used as HTML but it **will not work** as XHTML.

3. XHTML

- In XHTML
- XHTML DOCTYPE is **mandatory**
- The xmlns attribute in <html> is **mandatory**
- <html>, <head>, <title>, and <body> are **mandatory**

3. XHTML

- In **XHTML**, elements must be
- XHTML elements must be **properly nested**
- XHTML elements must always be **closed**
- XHTML elements must be in **lowercase**
- XHTML documents must have **one root element**

3. XHTML

- In **XHTML**, attributes must be
- Attribute names must be in **lower case**
- Attribute values must be **quoted**
- Attribute minimization is **forbidden**

3. XHTML

- **Example**
- **This is wrong:**
- `<p>This is a paragraph`
`<p>This is another paragraph`
- **This is correct:**
- `<p>This is a paragraph</p>`
`<p>This is another paragraph</p>`

3. XHTML

- **Example**
- **This is wrong:**
 - A break: `<br>`
A horizontal rule: `<hr>`
- **This is correct:**
 - A break: `<br />`
A horizontal rule: `<hr />`

4. How to Convert from HTML to XHTML

- **Add an XHTML <!DOCTYPE>** to the first line of every page
- **Add an xmlns** attribute to the html element of every page
- **Change all** element names to lowercase
- **Close all** empty elements
- **Change all** attribute names to lowercase
- **Quote all** attribute values

4. XHTML: Important Differences from HTML

- **Document Structure**
- XHTML DOCTYPE is **mandatory**
- The xmlns attribute in <html> is **mandatory**
- <html>, <head>, <title>, and <body> are **mandatory**

5. XML

- **By combining the strengths of HTML and XML, XHTML was developed.**
- **XHTML is HTML redesigned as XML.**
- XML is a markup language where documents must be marked up correctly (be "well-formed").

Summary

- **New attributes to existing form elements**
- **New form elements in HTML5**
- **XHTML is the strict form of HTML**

THANK YOU