Lecture 8:
Client-Side Programming (HTML)

Relation to CLOs

The following Lecture is related to the CLO_3, which is as:

CLO_3: Design a web page using HTML and other design approaches.

W3C Consortium

- In October 1994, Tim Berners-Lee founded an organization—called the World Wide Web Consortium (W3C)—devoted to developing nonproprietary, interoperable technologies for the World Wide Web.

Goals of W3C:

- to make the web universally accessible—regardless of ability, language or culture.
- The W3C home page (www.w3.org) provides extensive resources on Internet and web technologies.
- Web technologies standardized by the W3C are called Recommendations.

W3C Consortium (Cont.)

Recommendations of W3C Consortium:

- Extensible Hyper Text Markup Language (XHTML)
- Cascading Style Sheets (CSS)
- Hyper Text Markup Language (HTML—now considered a “legacy” technology)
- Extensible Markup Language (XML).
- A recommendation is not an actual software product, but a document that specifies a technology’s role, syntax rules and so forth.

HTML Block and Inline Elements

- Every HTML element has a default display value, depending on what type of element it is.
- There are two display values: block and inline.
- Block level elements normally start (and end) with a new line when displayed in a browser. Examples: <h1>, <p>, <ul>, <table>
- Inline elements are normally displayed without starting a new line. Examples: <b>, <td>, <a>, <img>

The HTML Tag

- The HTML element is a block level element that can be used as a container for grouping other HTML elements.
- The element has no special meaning. Except that, because it is a block level element, the browser will display a line break before and after it.
- When used together with CSS, the element can be used to set style attributes to large blocks of content.

HTML Tag Example

```
<!DOCTYPE html>
<html>
        <body>
                <div color:”#0000FF”>
                        <h3>This is a heading</h3>
                        <p>This is a paragraph.</p>
                </div>
        </body>
</html>
```

The HTML Element

- The HTML element is an inline element that can be used as a container for text.
- The element has no special meaning.
- When used together with CSS, the element can be used to set style attributes to parts of the text.

HTML Tag Example

```
<!DOCTYPE html>
<html>
    <body>
        <p>My mother has <span color:"blue">blue</span> eyes and my
            father has <span color: "darkolivegreen">dark green</span>
            eyes.</p>
    </body>
</html>
```

HTML Forms

- HTML forms are used to pass data to a server.
- A form can contain input elements like text fields, checkboxes, radio-buttons, submit buttons and more. A form can also contain select lists, textarea, fieldset, legend, and label elements.
  - *The <form> tag is used to create an HTML form:*

    < form>

    .

    input elements

    .

    < /form>

HTML Forms - The Input Element

- The most important form element is the input element.
- The <input> element is used to select user information.
- An <input> element can vary in many ways, depending on the type attribute.
- An <input> element can be of type text field, checkbox, password, radio button, submit button, and more.

HTML Forms - The Input Element Text Fields

- <input type="text">defines a one-line input field that a user can enter text into:

  < form>

  *First name:< input type="text" name="firstname">
*

  Last name:< input type="text" name="lastname">

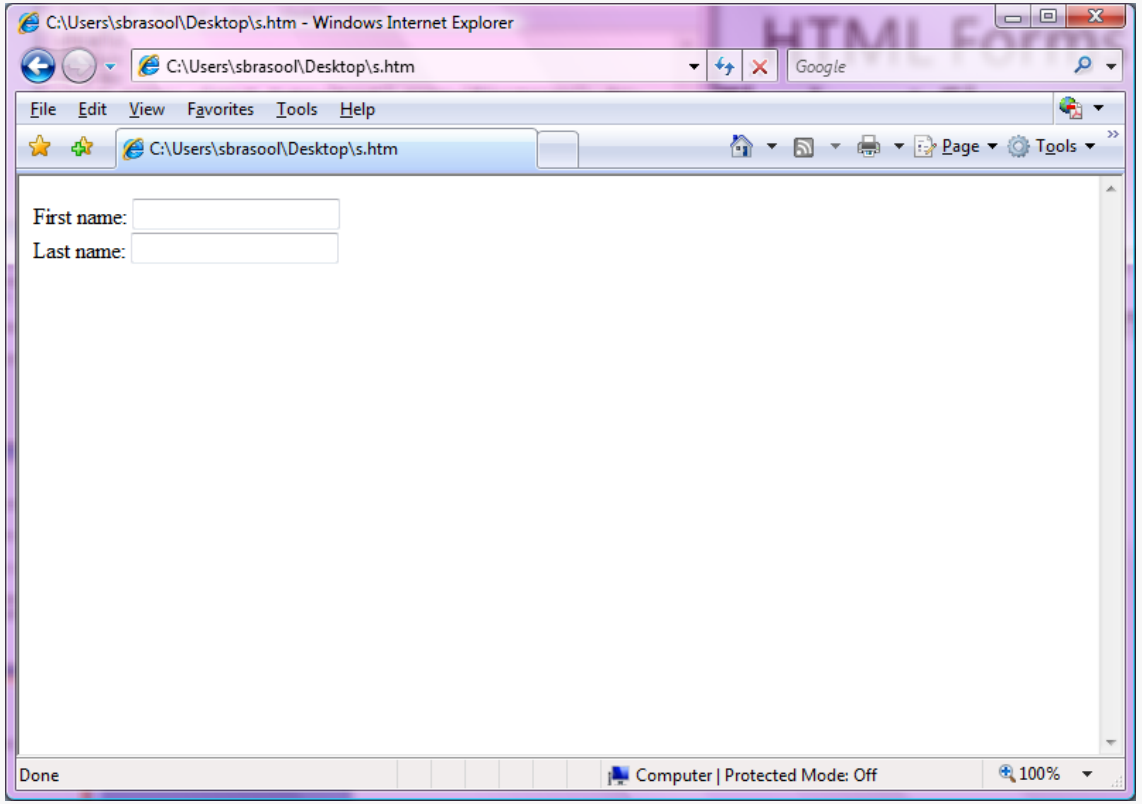
  < /form>

- How the HTML code above looks in a browser:

  First name:
  Last name:

HTML Forms

The form itself is not visible. Also note that the default width of a text field is 20 characters.



HTML Forms - The Input Element Password Field

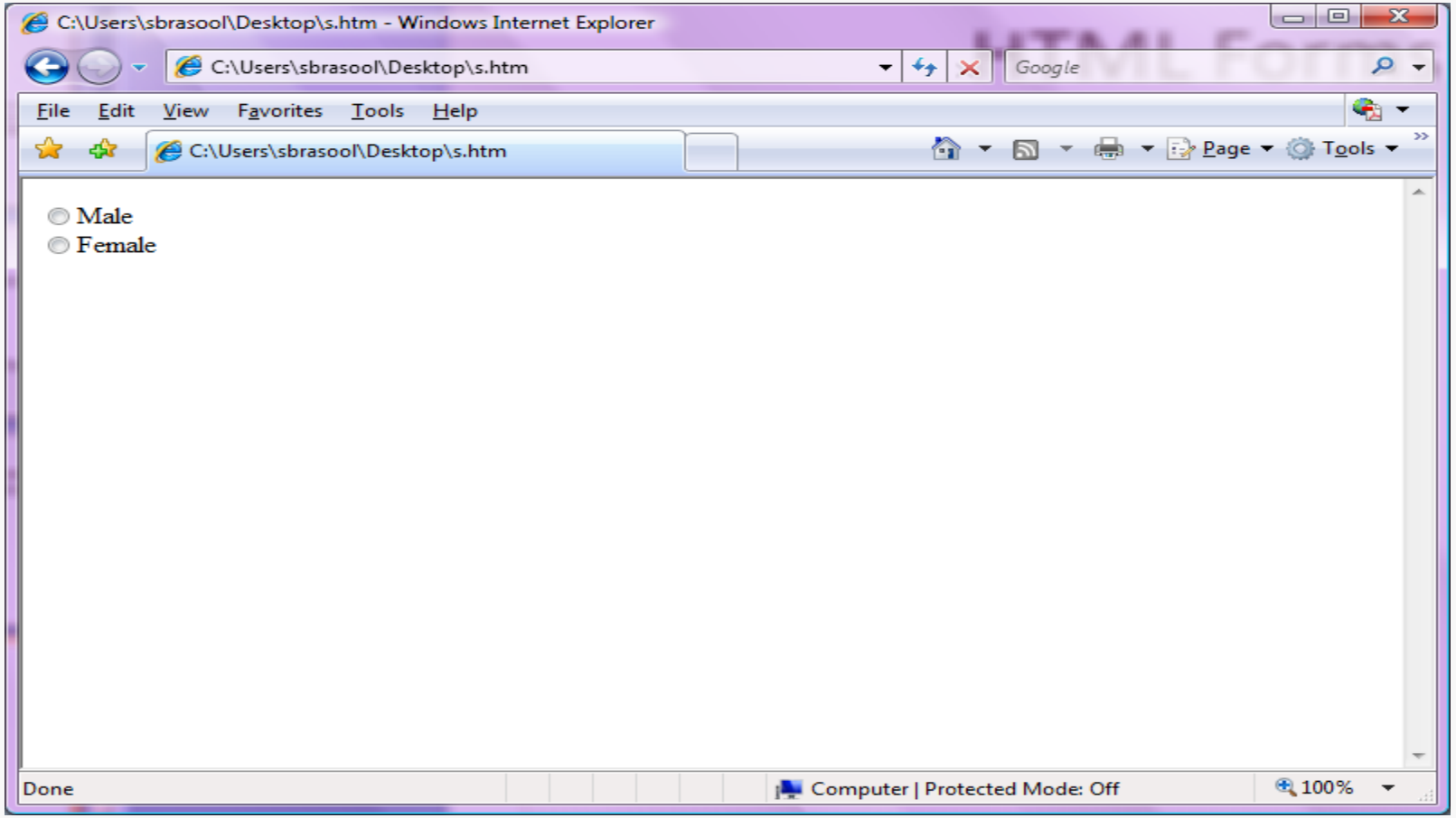
- <input type="password">defines a password field:
- < form>
  Password:< input type="password" name="pwd">
- </form>
- Password : 

HTML Forms - The Input Element Radio Buttons

- <input type="radio">defines a radio button. Radio buttons let a user select ONLY ONE of a limited number of choices:
  - *< form>*
    *< input type="radio" name="sex" value="male">Male
*
    < input type="radio" name="sex" value="female">Female
    < /form>
- How the HTML code above looks in a browser:

  o Male
  o Female

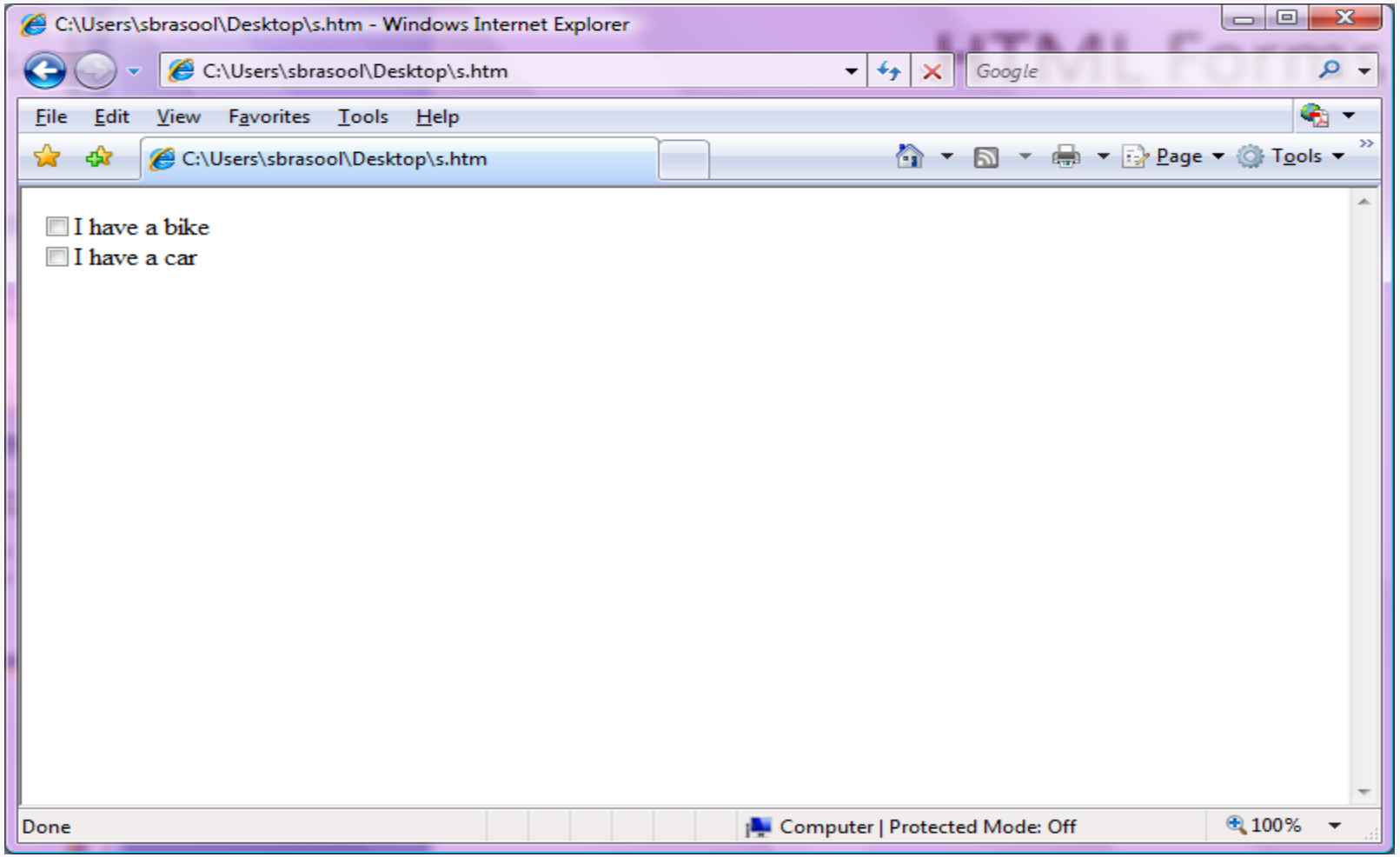
Radio Buttons



HTML Forms - The Input Element Checkboxes

- <input type="checkbox">defines a checkbox. Checkboxes let a user select ZERO or MORE options of a limited number of choices.
- < form>
  < input type="checkbox" name="vehicle" value="Bike">I have a bike
  < input type="checkbox" name="vehicle" value="Car">I have a car
  < /form>
- How the HTML code above looks in a browser:
  - I have a bike
  - I have a car

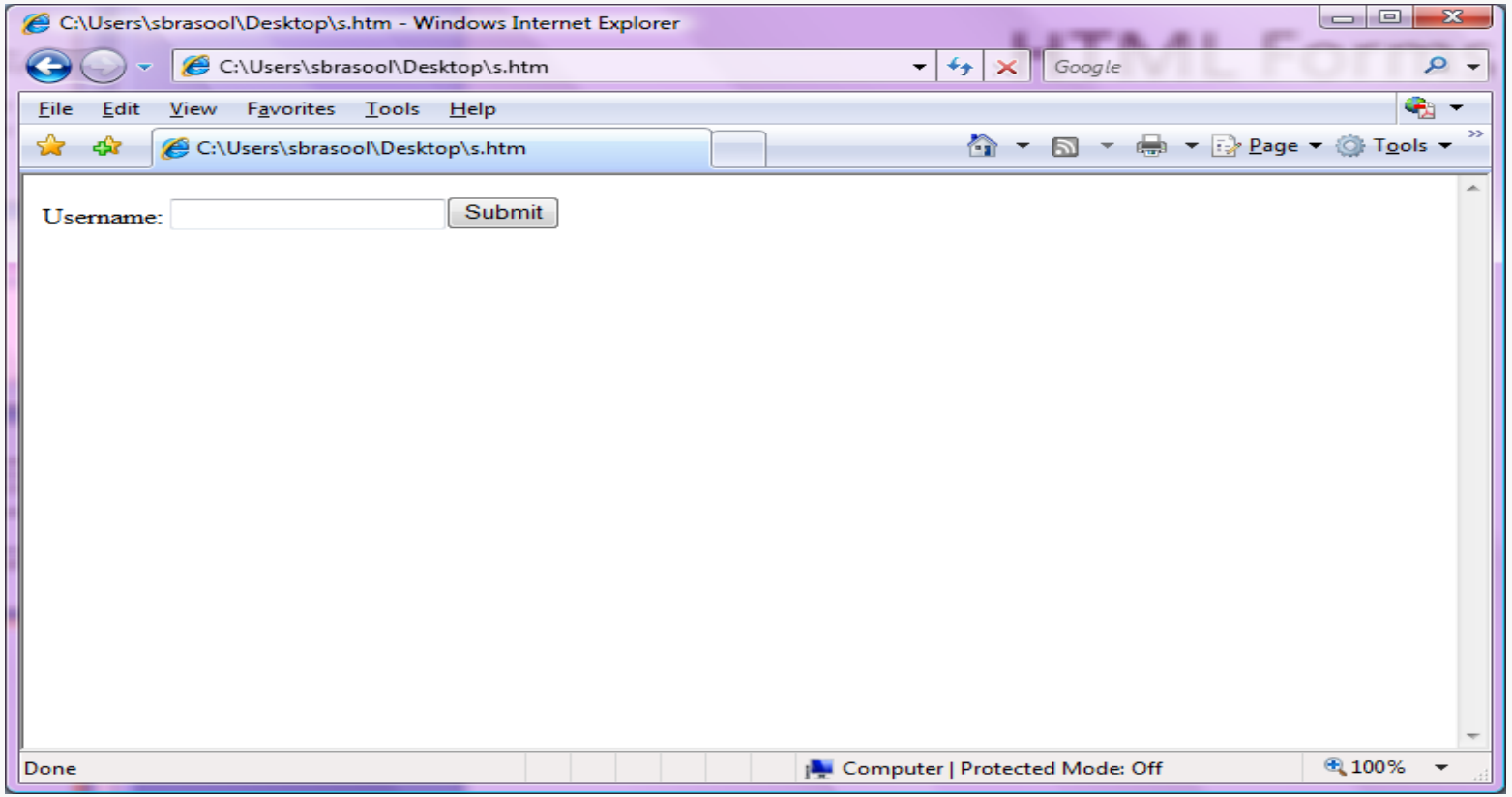
Checkboxes


C:\Users\sbrasool\Desktop\s.htm - Windows Internet Explorer
C:\Users\sbrasool\Desktop\s.htm
Google
File Edit View Favorites Tools Help
C:\Users\sbrasool\Desktop\s.htm
Page Tools
I have a bike
I have a car
Done
Computer | Protected Mode: Off
100%

HTML Forms - The Input Element Submit Button

- <input type="submit">defines a submit button.
- A submit button is used to send form data to a server. The data is sent to the page specified in the form's action attribute. The file defined in the action attribute usually does something with the received input:
- < form name="input" action="html_form_action.asp" method="get"> Username:< input type="text" name="user"><input type="submit" value="Submit"></form>
- How the HTML code above looks in a browser:
- Username: Submit

HTML Forms



If you type some characters in the text field above, and click the "Submit" button, the browser will send your input to a page called "html_form_action.asp". The page will show you the received input.

Tag	Description
<form>	Defines an HTML form for user input
<input>	Defines an input control
<textarea>	Defines a multiline input control (text area)
<label>	Defines a label for an <input> element
<fieldset>	Groups related elements in a form
<legend>	Defines a caption for a <fieldset> element
<select>	Defines a drop-down list
<optgroup>	Defines a group of related options in a drop-down list
<option>	Defines an option in a drop-down list
<button>	Defines a clickable button
<datalist>	Specifies a list of pre-defined options for input controls
<keygen>	Defines a key-pair generator field (for forms)
<output>	Defines the result of a calculation

HTML Colors

- Colors are displayed combining RED, GREEN, and BLUE light.
  - ***Color Values***
  - *HTML colors are defined using a hexadecimal notation (HEX) for the combination of Red, Green, and Blue color values (RGB).*
  - *The lowest value that can be given to one of the light sources is 0 (in HEX: 00). The highest value is 255 (in HEX: FF).*
  - *HEX values are specified as 3 pairs of two-digit numbers, starting with a # sign.*

HTML Colors Example

Color	Color HEX	Color RGB
	#000000	rgb(0,0,0)
	#FF0000	rgb(255,0,0)
	#00FF00	rgb(0,255,0)
	#0000FF	rgb(0,0,255)
	#FFFF00	rgb(255,255,0)
	#00FFFF	rgb(0,255,255)
	#FF00FF	rgb(255,0,255)
	#C0C0C0	rgb(192,192,192)
	#FFFFFF	rgb(255,255,255)

HTML Multimedia

- Multimedia on the web is sound, music, videos, and animations.
- Modern web browsers have support for many multimedia formats.
- **What is Multimedia?**
  - *Multimedia comes in many different formats. It can be almost anything you can hear or see like text, pictures, music, sound, videos, records, films, animations, and more.*
  - *On the Internet you can often find multimedia elements embedded in web pages, and modern web browsers have support for a number of multimedia formats.*

Browser Support?

- The first Internet browsers had support for text only, and even the text support was limited to a single font in a single color. Then came browsers with support for colors, fonts and text styles, and the support for pictures was added.
- The support for sounds, animations and videos is handled in different ways by different browsers. Some elements can be handled inline, and some requires an extra helper program (a plug-in).

Multimedia Formats

- Multimedia elements (like sounds or videos) are stored in media files.
- The most common way to discover the media type is to look at the file extension. When a browser sees the file extensions .htm or .html, it will assume that the file is an HTML page. Picture formats are recognized by extensions like .gif and .jpg.
- Multimedia elements also have their own file formats with different extensions like .swf, .wmv, .mp3, and .mp4.