Special Guests

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Why is programming fun?

Second is the pleasure of making things that are useful to other people. Deep within, we want others to use our work and to find it helpful. In this respect the programming system is not essentially different from the child's first clay pencil holder "for Daddy's office."

Announcements

• Change in deadline:
  * Labs 7 and 8 will be due a week from Tuesday
  * You may want to do lab 8 before lab 7
Screen Input and Output

The form of <form>
JavaScript and HTML

- HTML is markup for Web content
- Web browser interprets HTML and displays the page
- JavaScript responds to user actions
  * Click button: onclick event
  * Hover over link: onmouseover
  * Enter data in forms: onsubmit
  * Change value in a form field: onchange
A short form

For example

<form>

<p><input type="button" value="Press"> for good results</p>

Enter data here:  

<input type="text" name="x" size="20">  
<br />
Radio buttons:

<input type="radio" name="y" value="right"> right or

<input type="radio" name="y" value="left"> left

</form>

</body>
A short form

For example

<form>
  <p><input type="button" value="Press" for good results"></p>
  <p>Enter data here: <input type="text" name="x" size="20"> Radio buttons:
    <input type="radio" name="y" value="right"> right or</p>
  <p><input type="radio" name="y" value="left"> left</p>
</form>
Demonstration

- **The short form:**

![Example - Microsoft Internet Explorer](image)

For example

Press for good results

Enter data here: [Input field]

Radio buttons: ☐ Left or ☐ right

Done

My Computer
Input & Output in JS are given in forms

* Inside `<form>` tags
* Notice
  * `type`
  * `value`
  * relationship to text
More Forms

<form>
  ...  
  Enter data here:
  <input type="text" name="x" size=20> <br>
  ...  
</form>

* Notice
  • type
  • name
  • size
  • relationship to text
Radio Control

<form>
  ... 
  Radio buttons: <input type="radio" name="y"> Left or <input type="radio" name="y"> right.
</form>

* Notice
  - type
  - name (common)
  - relationship to text
Text boxes are input or output based on your point of view ...

* Programming uses computer's view
  * It's obvious that buttons are inputs
  * Text boxes are inputs, but if the computer puts information in them, they're outputs

Forms define the type of I/O and the processing
Events Cause Processing

After drawing a page, browsers sit idle waiting for something to happen ... when we give input, it cause events

• Processing the input is the task of an event handler

  * Event types
    • onClick
    • onChange
    • onMouseOver

In the <input ...> tag, an event handler gives the processing needed for the task using JavaScript
Demonstration

- Smileys...
<table>
<thead>
<tr>
<th>Emoticon</th>
<th>Meaning</th>
<th>Emoticon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>(^_^)</td>
<td>Laughing</td>
<td>(????)/</td>
<td>Joyful</td>
</tr>
<tr>
<td>(&gt;_&lt;)&gt;</td>
<td>Troubled</td>
<td>(????;;)</td>
<td>Surprised</td>
</tr>
<tr>
<td>(^_^;;)</td>
<td>Troubled</td>
<td>(#^.^#)</td>
<td>Shy</td>
</tr>
<tr>
<td>(ToT)</td>
<td>Crying</td>
<td>(<em><code>?</code></em>)</td>
<td>Infatuation</td>
</tr>
<tr>
<td>m(_ _)m</td>
<td>Apologising</td>
<td>(??;;)</td>
<td>Worried</td>
</tr>
<tr>
<td>(^^;)</td>
<td>Shy</td>
<td>(<em>^?^</em>)</td>
<td>Joyful</td>
</tr>
<tr>
<td>(????)</td>
<td>Grinning</td>
<td>(^?^)</td>
<td>Laughing</td>
</tr>
</tbody>
</table>
Emoticons = Emotional Icons

:-)  Smile or Happy
:-(' Frown or Sad
;-(  Winking
:-D  Laughter
:\-C  Very, very sad
D:-:  Annoyed, shocked or scared

:-p  “Raspberry" or 'tongue in cheek'
:-S  Confused
:/   Doubtful or confused
:-|   Blank
O:O_O_Surprised or shocked
Observe Actions

Emoticons

- :-)
- :-)
- :-(
- =8-0

Adding a smile to [ ]
Adding a wink to [ ]
Adding a frown to [ ]
Makes [ ]
‘onClick’ Event for Buttons

<h1>Emoticons</h1>

<input type="button" value=" : -) " onClick="x.value='Smiley!'">
<input type="button" value=" ; -) " onClick="x.value='Winky'">
<input type="button" value=" =8-O " onClick="x.value='Omagosh!'">
<input type="text" name=x size=8>

* Event handlers say what to do if event happens...
  “put ‘Smiley’ in the output textbox”

Event handlers = mini programs
‘onClick’ for Buttons

```html
<h1>Emoticons</h1>
<input type="button" value=":-)" onClick="x.value='Smiley'"> 
<input type="button" value=";-)" onClick="x.value='Winky'"> 
<input type="button" value=":-(" onClick="x.value='Winky'"> 
<input type="button" value="=8-O" onClick="x.value='Omagosh!'"> 
<input type="text" name=x size=8><br>

* Notice ...
  * ‘onClick’ event does the task: places ‘Smiley’ in the output textbox
```
<h1>Emoticons</h1>

```html
<input type="button" value=" : -) " onClick="x.value='Smiley'">
<input type="button" value=" ; -) " onClick="x.value='Winky'">
<input type="button" value=" :-( " onClick="x.value='Frowny'">
<input type="button" value="=8-O " onClick="x.value='Omagosh!'">
<input type="text" name="x" size="8">
```

* Notice ...
  * the `value` of a textbox is the contents of the textbox `x.value`
‘onChange’ Event

Adding a smile to <input type="text" name="x2" size=2
onChange="x5.value = x2.value + ')" ">

Adding a wink to <input type="text" name="x3" size=2
onChange="x5.value = ';' + x3.value"
Adding a frown to <input type="text" name="x4"
onChange="x5.value = x4.value + '('"
Makes <input type="text" name="x5" 

* Notice
  • names
  • + is concatenate
...  
<input type="text" name=x size=8><br><br>  
<hr><br>

Adding a smile to <input type="text" name="x2" size=2
onChange="x5.value = x2.value + ')' "><br>
Adding a wink to <input type="text" name="x3" size=2
onChange="x5.value = ';' + x3.value"><br>
Adding a frown to <input type="text" name="x4" size=2
onChange="x5.value = x4.value + '(' "><br>
Makes <input type="text" name="x5" size=3>

"x.value = x2.value + ')' "
...<input type="text" name=x size=8><br><br>
<hr><br>
Adding a smile to <input type="text" name="x2" size=2
onChange="x5.value = x2.value + ')' " ><br>
Adding a wink to <input type="text" name="x3" size=2
onChange="x5.value = ';' + x3.value">
Adding a frown to <input type="text" name="x4" size=2
onChange="x5.value = x4.value + '('">
Makes <input type="text" name="x5" size=3>
"x.value = x2.value + ')' "

![Emoticons](image)
• For Monday, read QuickStart to JavaScript, pages 108-113.
• Monday I’ll introduce the next project.
• Next week’s quiz
  * Review the questions at the end of these chapters:
    • Fluency chapters 20, 21, and 22
    • QuickStart chapters 1 and 2

• Expect lots of questions on JavaScript!

• JavaScript topics will include:
  • Variables
  • Values
  • Assignment statements
  • Conditionals
  • Functions
  • Curly brackets
  • Relationship to HTML
Schedule Changes

• Monday and Tuesday:
  * Keep working on Lab 7
  * Due at your Wednesday or Thursday lab this week

• Deadline for next project is postponed