

## 5. Advanced JavaScript Programming

### 5.5 JavaScript Forms and Events

A form can contain most of GUI elements including

- Text entry fields
  - For entering names, street address, zip
  - For entering comments
  - Email address
- Password fields
  - For entering password and PIN numbers
- Radio buttons
  - Allowing user pick one (and only one) choice within a group of options
  - Selecting preferred color option: red, blue, green, etc
  - Example: two-door or four-door car
- Submit button
- Reset button
- Check boxes
- Pop-up menus
  - Select-and-go menu for long list of choices such as States
- Entry lists

### Activities:

- A user fills the given form
- Client side form validation (faster and efficient)
  - Verifying passwords
  - Verifying zip codes
  - Validating Email addresses
  - Verifying empty fields
- Click the "Submit" button to send the form to the Web server
- CGI program interprets the data and acts on it
- Send back a thank you note to the user

### Button

```
<INPUT TYPE=button>
```

Event handler: onClick

### Examples:

Make a button with a name called "gray", when clicked, it changes the background color to white:

```
<FORM>
<INPUT TYPE = "Button" VALUE = "Gray" onClick
 ="document.bgColor='gray' ">
</FORM>
```

### Checkbox

```
<INPUT TYPE=checkbox>
```

Event handler: onClick

### FileUpload

```
<INPUT TYPE=file>
```

Event handler: onChange

### Hidden

```
<INPUT TYPE=hidden>
```

A nonvisual data field

Event handler: none

### Option

```
<OPTION>
```

### Password (for sensitive data)

```
<INPUT TYPE=password>
```

Event handler: onChange

### Radio

```
<INPUT TYPE=radio>
```

Event handler: onClick

### Reset (a button for resetting the form)

```
<INPUT TYPE=reset>
```

Event handler: onClick

### Select (a drop-down menu for selecting Option items)

```
<SELECT [multiple]> .. </SELECT>
```

Event handler: onChange

Submit (a button for submitting a form)

<INPUT TYPE=submit>

Event handler: onClick

Text (creating a single line of text)

<INPUT TYPE=text>

Event handler: onChange

TextArea (creating a multilane text entry field)

<INPUT TYPE=textarea>

Event handler: onChange

## Events and Event Handlers

onAbort

- User aboard the page loading
- Image (JavaScript 1.1)

OnFocus, onBlur

- Text elements
- User left the object

onChange

- Select, text input elements
- User changed the object

onClick

- Button elements, Link
- User clicked the object
- Examples

Create a button, name it SubmitText, display Submit on the top of the button; when clicked, it calls SendText() function:

```
<INPUT TYPE = "Button" NAME="SubmitText" VALUE="Submit"  
onClick="SendText()">
```

#### onDbClick

- Document, Link, Image, Button elements
- User double clicked the object

#### onError

- Image, Window (1.1)
- The script encounter an error

#### OnKeyDown, onKeyPress, onKeyUp

- Document, Image, Link, text elements
- Key board related

#### onLoad, onUnload

- The object is loaded; the user left the window
- Window; Image
- Examples

Load and run the timeTest() function when the browser is loaded:

```
<BODY bgColor = "white" onload = "timeTest()">
```

#### onMouseDown, onMouseUp

- Document, Link, Image, Button elements

#### onMouseover, onMouseout

- Link; Image and Layer
- The mouse moved over the object; the mouse moved off an object

onReset, onSubmit

- Form reset; form submission
- Triggered onreset; onsubmit event when the button is clicked

onSelect - The user selected the contents of an object

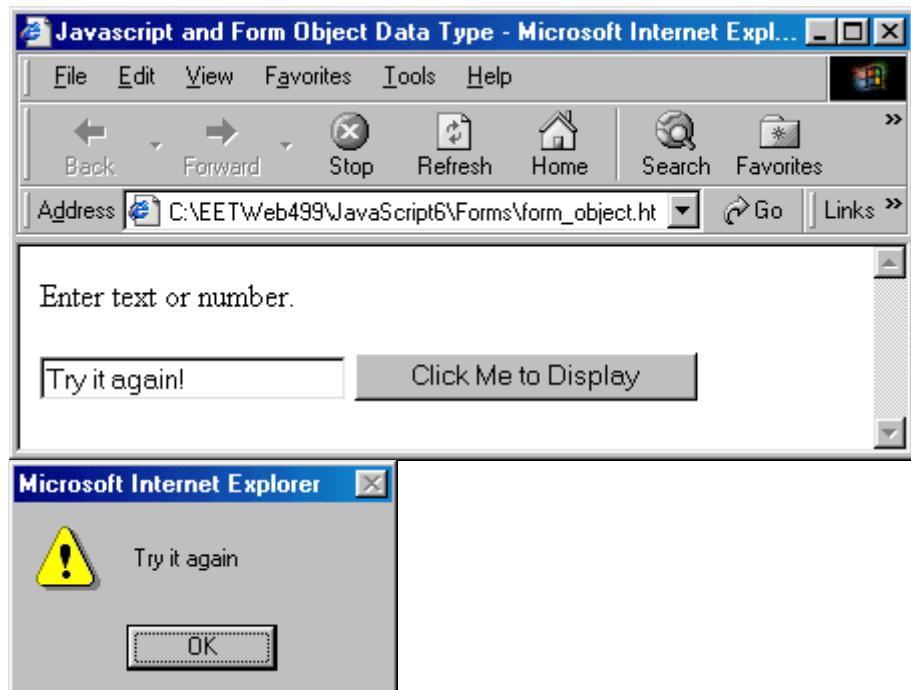
onSubmit - The user submit a form

**Example 5-5-1: A simple text field input form.**

```
<HTML>
<!-- form_object.htm -->
<HEAD>
<TITLE>Javascript and Form Object Data Type</TITLE>
<BODY>
Enter text or number.
<FORM name=Form1>
    <INPUT name=textT1 value= *****>
    <SCRIPT language=JavaScript>
        // Document object has many forms:
        // form[0], form[1], form[2]...
        // - the form[0] is the first form.
        // - the form[0] is also the same object as "Form1"
        //
        // Elements included in the Form1 are:
        // INPUT element0 -- textfield called "textT1"
        // INPUT element1 -- button

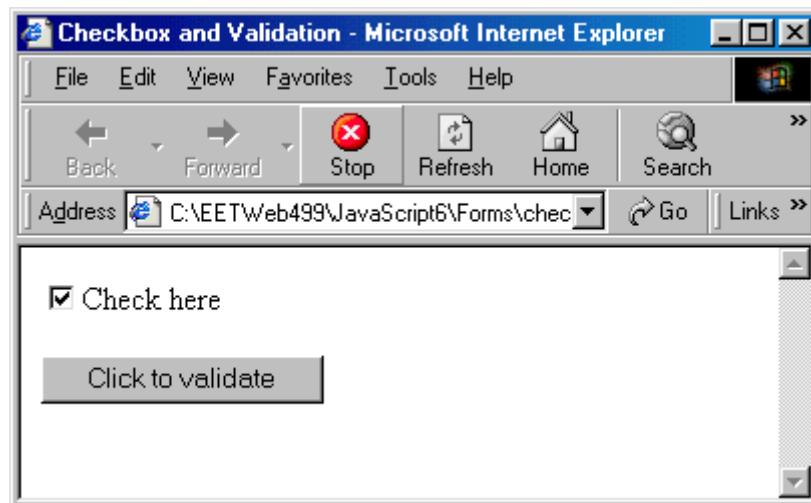
        formObj =document.forms[0].elements[0]

    </SCRIPT>
<!--
    <INPUT onclick=alert(formObj.value) TYPE = "button" value="Click
Me to Display"
-->
    <INPUT onclick=alert(document.Form1.textT1.value) TYPE = "button"
value="Click Me to Display"
</FORM>
</BODY>
</HTML>
```



**Example 5-5-2: Create a check box with validation.**

```
<HEAD>
<!-- checkbox.htm -->
<TITLE>Checkbox and Validation</TITLE>
<SCRIPT LANGUAGE="JavaScript">
function checkThisBox(form) {
    if (form.checkbox1.checked) {
        alert("This box is checked.")
    } else {
        alert("The box is not checked.")
    }
}
</SCRIPT>
</HEAD>
<BODY>
<FORM>
<INPUT TYPE="checkbox" NAME="checkbox1">Check here<P>
<INPUT TYPE="button" NAME="button1" VALUE="Click to validate"
onClick="checkThisBox(this.form)">
</FORM>
</BODY>
</HTML>
```

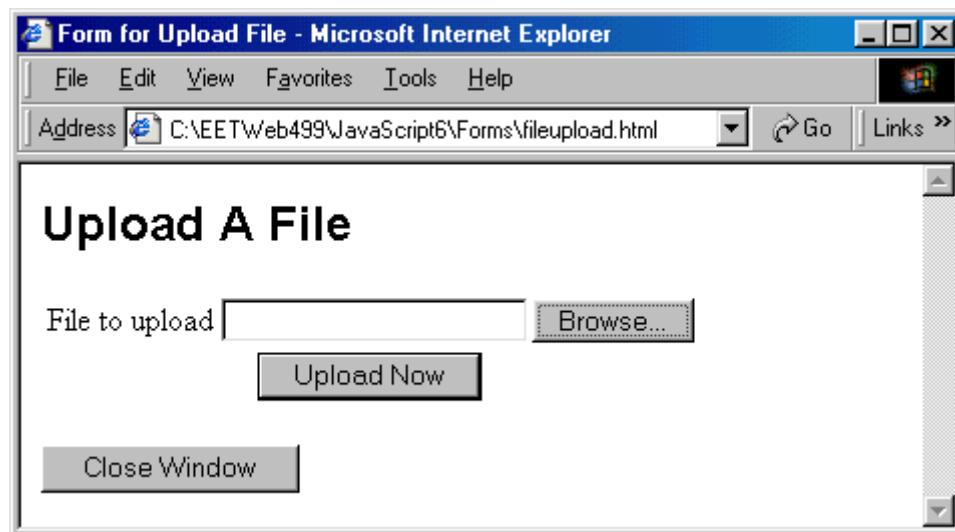


**Example 5-5-3: Upload a file to server.**

```
<HTML>
<!!-- fileupload.html -->
<HEAD>
<TITLE>Form for Upload File</TITLE>
<SCRIPT LANGUAGE="JavaScript">

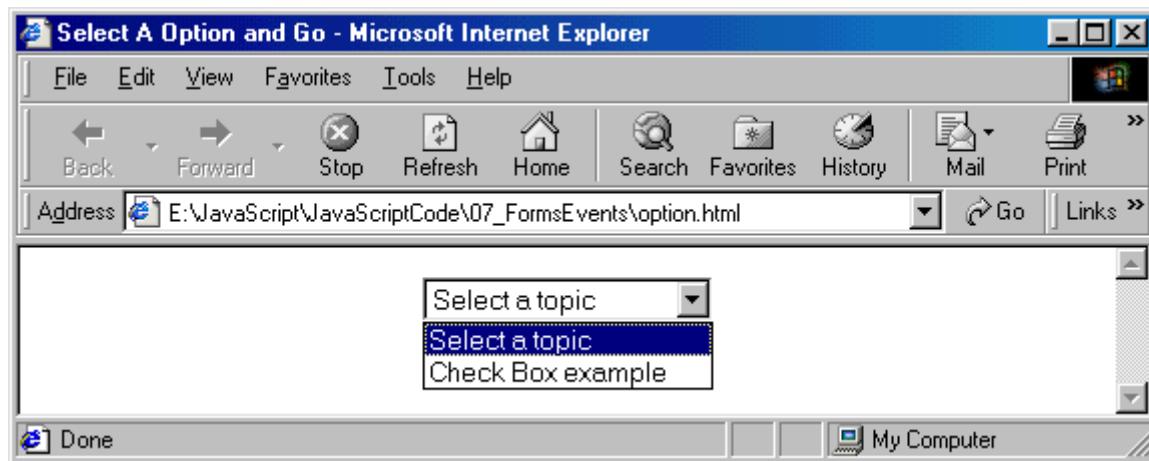
    function closeWindow()
    {
        window.close()
    }

</SCRIPT>
</HEAD>
<BODY>
<FONT FACE="Arial" SIZE="-1"><H2>Upload A File</H2></FONT>
<FORM METHOD="POST" ACTION="/cgi-bin>thisUPLOAD.CGI"
ENCTYPE="multipart/form-data">
<TABLE>
    <TR>
        <TD>File to upload</TD>
        <TD><INPUT TYPE="file" SIZE="20" NAME="upfile"></TD>
    </TR>
    <TR>
        <TD COLSPAN="2" ALIGN="CENTER"><INPUT TYPE="submit"
VALUE="Upload Now"></TD>
    </TR>
</TABLE>
</FORM>
<FORM><INPUT TYPE="button" VALUE = "Close Window" onClick =
"closeWindow()"></FORM>
</BODY>
</HTML>
```



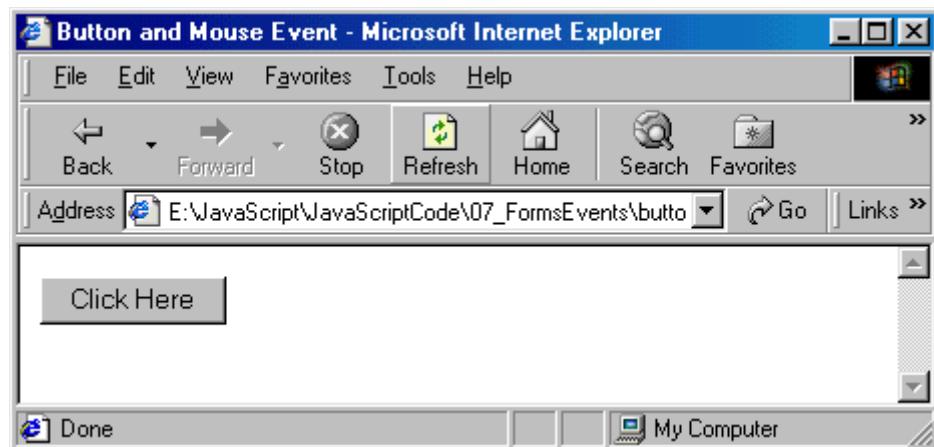
**Example 5-5-4: Use option control and function.**

```
<HEAD>
<!-- option.htm -->
<TITLE>Select A Option and Go</TITLE>
<SCRIPT LANGUAGE=JAVASCRIPT TYPE="TEXT/JAVASCRIPT">
function goPage(newLoc)
{
    newPage = newLoc.options[newLoc.selectedIndex].value
    if (newPage != "")
    {
        window.location.href = newPage
    }
}
</SCRIPT>
</HEAD>
<BODY BGCOLOR=WHITE>
<DIV ALIGN=CENTER>
<!--
<FORM ACTION="goLocation.cgi" METHOD=GET>
-->
<FORM>
<SELECT NAME="newLocation" onChange="goPage(this.form.newLocation)">
<OPTION VALUE="" SELECTED>Select a topic
<OPTION VALUE="checkbox.htm">Check Box example
</SELECT>
<NOSCRIPT>
<INPUT TYPE=SUBMIT VALUE="Go There!">
</NOSCRIPT>
</FORM>
</DIV>
</BODY>
</HTML>
```



Example 5-5-5: An example shows how to tie together the button and events: onload, onclick, and onmouseover.

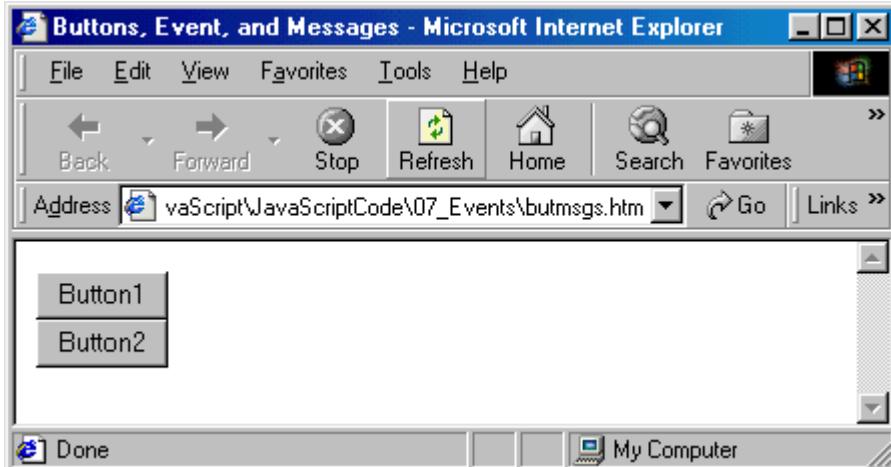
```
<HTML>
<!-- button_mouse.htm -->
<HEAD>
<TITLE>Button and Mouse Event</TITLE>
</HEAD>
<BODY onload="alert('PAGE loaded!')">
<FORM>
<INPUT TYPE="button"
      VALUE="Click Here"
      onclick="alert('You clicked the button.')"
      onmouseover="alert('Your mouse is over the button.')">
</FORM>
</BODY>
</HTML>
```



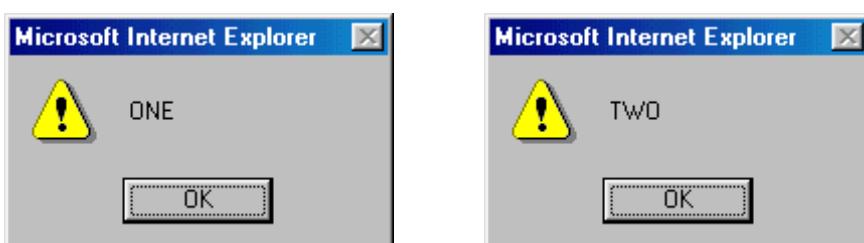
Example 5-5-6: An example shows how to call functions through the button controls and events.

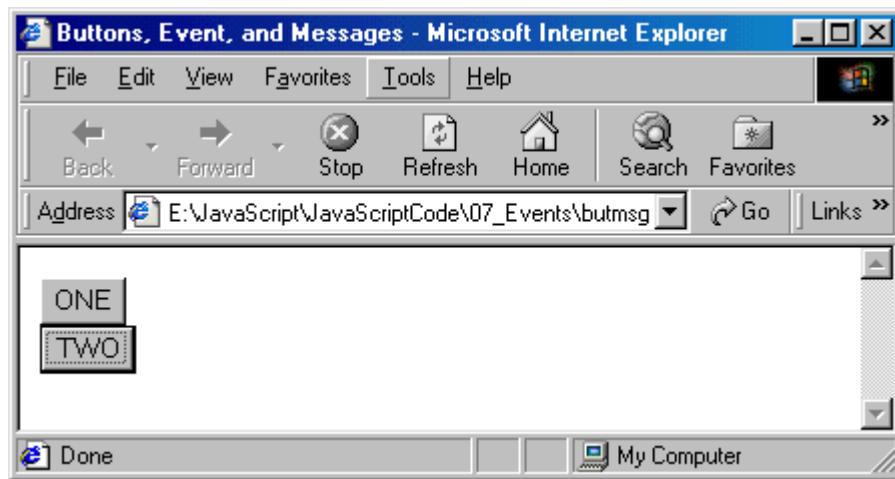
```
<HTML>
<!-- butmsgs.htm -->
<HEAD>
<TITLE>Buttons, Event, and Messages</TITLE>
<SCRIPT LANGUAGE="JavaScript">
function changeDsp(newTarget,Text){
  newTarget.value=Text
  alert(Text)
}
</SCRIPT>
</HEAD>
<BODY>
<FORM>
  <INPUT TYPE="button" VALUE="Button1"
  onclick="changeDsp(this,'ONE')"><BR>
  <INPUT TYPE="button" VALUE="Button2"
  onclick="changeDsp(this,'TWO')"><BR>
</FORM>
</BODY>
</HTML>
```

Before Click on Button1 and Button2:



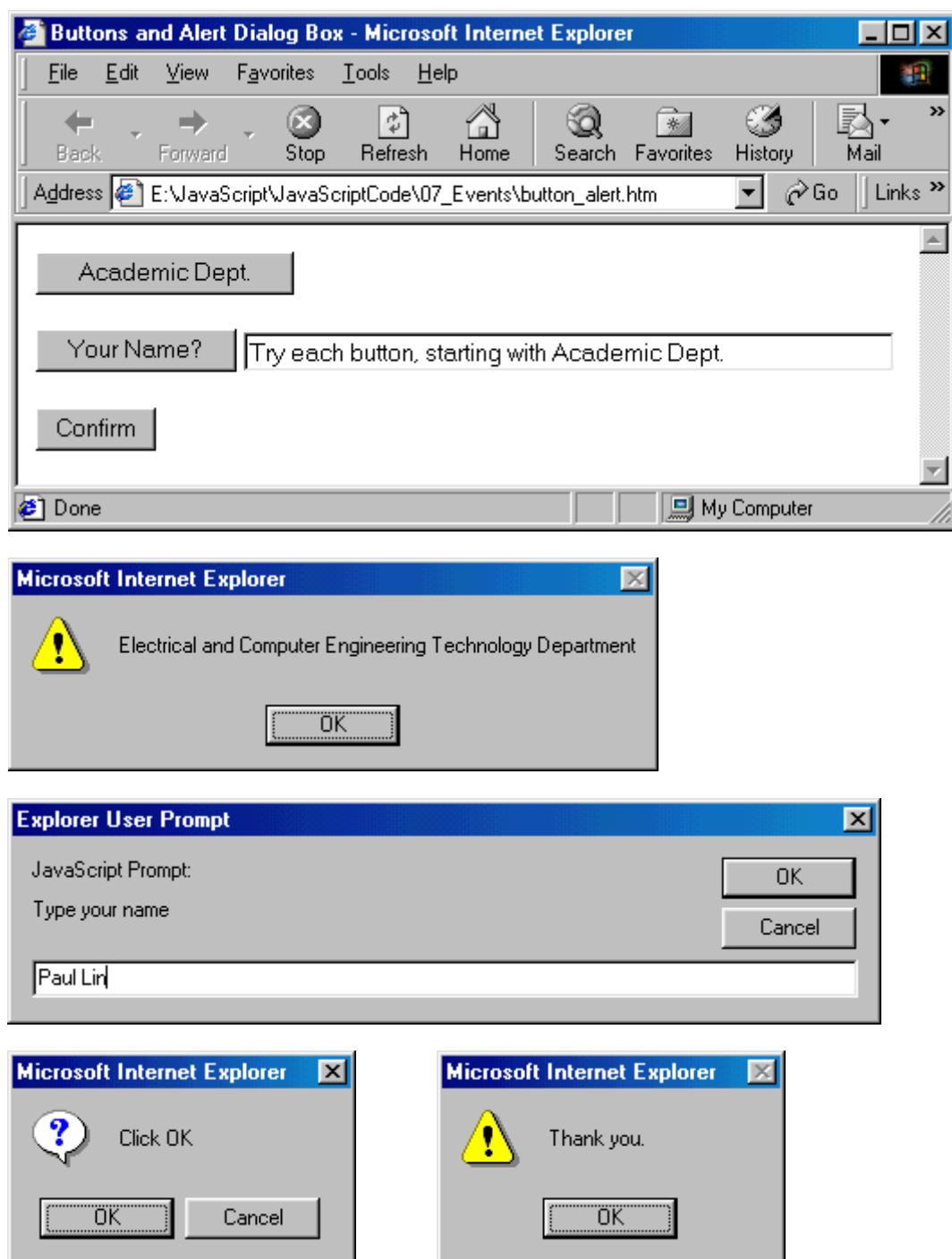
After Click on Button1 and Button2:

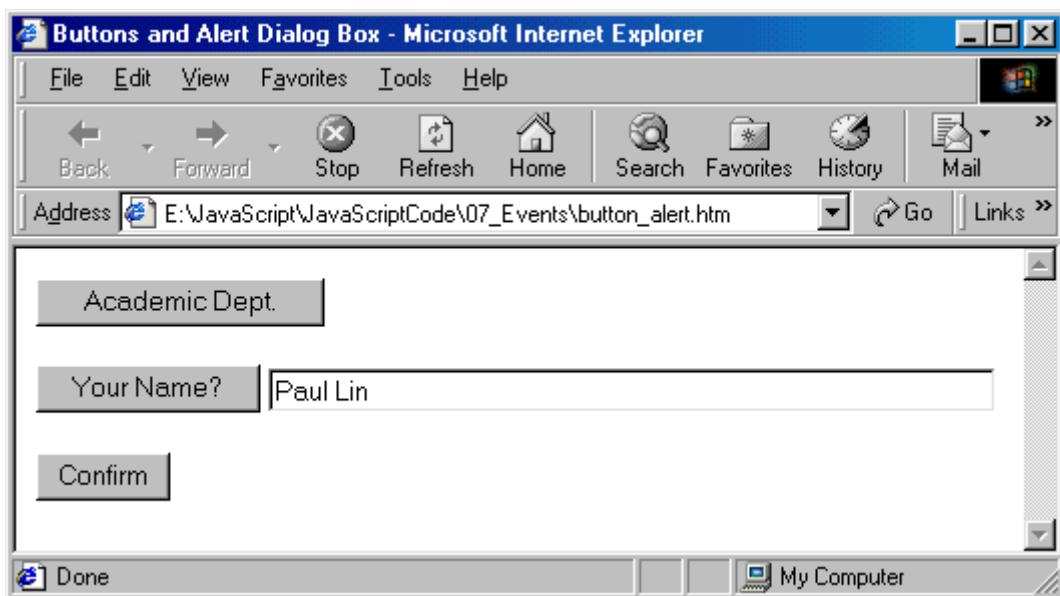




Example 5-5-7: An example that uses input button, text filed of a form, window functions prompt(), and confirm().

```
<HTML>
<!-- button_alert.htm -->
<HEAD>
<TITLE>Buttons and Alert Dialog Box</TITLE>
</HEAD>
<BODY>
<FORM NAME="new_form">
<INPUT TYPE="button"
      VALUE="Academic Dept."
      onclick="alert('Electrical and Computer Engineering Technology
Department')">
<P>
<INPUT TYPE="button"
      VALUE="Your Name?"
      onclick="document.new_form.new_text.value=prompt('Type your
name', 'Here')">
<INPUT TYPE="Text"
      NAME="new_text"
      SIZE="50"
      VALUE="Try each button, starting with Academic Dept.">
<P>
<INPUT TYPE="button"
      VALUE="Confirm"
      onclick="if(confirm('Click OK')){alert('Thank you.')}
              else{alert('CLICK OK!!!!')}">
</FORM>
</BODY>
</HTML>
```





Example 5-5-8: An example that uses buttons to activate events for reading messages.

```
<!-- ButClick.html-->
<HTML>
<HEAD>
    <TITLE>Function passing</TITLE>
    <SCRIPT LANGUAGE=JAVASCRIPT TYPE="TEXT/JAVASCRIPT">
        <!-- Hide script from older browsers

            function docDisplay(message) {
                alert(message)
            }

        // End hiding script from older browsers -->
    </SCRIPT>
</HEAD>
<BODY BGCOLOR=GREEN>
<H2>Click Button to Activate Event</H2>
<HR>
<FORM>
    <INPUT TYPE=BUTTON VALUE="ReadMsg1" onClick="docDisplay('Thank You')"
You' )">
    <INPUT TYPE=BUTTON VALUE="ReadMsg2" onClick="docDisplay('Too
Bad' )">
    <INPUT TYPE=BUTTON VALUE="ReadMsg3" onClick="docDisplay('Are you
OK?' )">

</FORM>
</BODY>
</HTML>
```

