Web Programming - 7

CGI Scripts 1
SCRIPTS

Scripts are external programs that the server runs in response to a browser's request.

When a user requests a URL that points to a script, the server executes it.

Any output the script produces is returned to the user's browser for display.

http://hoohoo.ncsa.uiuc.edu/cgi-bin/fortune
User activates CGI script
Web client sends CGI script request
Script generate and sends page2
Web client display Page2

CGI Overview
Communicating with scripts (Hardwired)

<A HREF="/cgi-bin/lookup?The%20Raven">Once upon a midnight dreary...</A>

%20 hexadecimal code for space

<A HREF="/cgi-bin/lookup?Edgar+Allen+Poe">Quoth the raven, "Nevermore".</A>

<A HREF="/cgi-bin/cite?author=Poe&title=The%20Raven">Search for that black bird again.</A>
Communicating with scripts

To send additional path information to a script that wants it, just tack the path on to the end of the script's URL.

http://your.site/cgi-bin/puzzle/ducks/and/drakes

<A HREF="/cgi-bin/puzzle/ducks/and/drakes?row=a2&col=j4">Your move.</A>
Communicating with scripts (Input HTML documents)

Keyword Searches

This is a searchable index. Enter search keywords: __________

Fill-Out Forms

Checkboxes, Text Fields, Radio Buttons, Popup Menus, etc.
Keyword Searches

<HTML>
  <HEAD><TITLE>Archie Search</TITLE></HEAD>
  <BODY>
    <H1>A Gateway to Archie</H1>
    This is a gateway to the NCSA archie script.
    Enter a complete or partial file name.
    <ISINDEX
      ACTION="http://hoohoo.ncsa.uiuc.edu/cgi-bin/archie">
    </BODY>
</HTML>
A Gateway to Archie

This is a gateway to the NCSA archie script. Enter a complete or partial file name.

This is a searchable index. Enter search keywords: Find me a coffee
Transferring “METHOD”

GET for Keyword Searches

Example:

User Types  *find me a coffee*

URL Request:
*http://hoohoo.ncsa.uiuc.edu/cgi-bin/archie/?find+me+a+coffee*

HTTP Transaction
*GET HTTP/1.0  cgi-bin/archie/?find+me+a+coffee*
Fill-Out Forms

<H1>Coffee Express</H1>

<FORM ACTION="/cgi-bin/take_out" METHOD=POST>

<P>Enter your name:
  <INPUT TYPE="text" NAME="customer">

<P>What kind of coffee do you want to order?
  <INPUT TYPE="text" NAME="order">

<P>Push this button when you're ready to send this important information:
  <INPUT TYPE="submit" VALUE="Place Order">

</FORM>
Coffee Express

Enter your name: Fred

What kind of coffee do you want to order? Latte with cinnamon

Push this button when you’re ready to send this important information:

Place Order
Transferring “METHOD”

POST HTTP Transaction

POST HTTP/1.0 /cgi-bin/take_out

......

......

customer=Fred&order=a%20latte%20with%20cinnamon

GET HTTP Transaction

GET HTTP/1.0 /cgi-bin/take_out?customer=Fred&order=a%20latte%20with%20cinnamon
HTML Tags for Forms

<FORM> and </FORM> define the start and end of a form.

<FORM ACTION="URL" METHOD="method" ENCTYPE="type">
  Text and other form-related tags
</FORM>

Netscape Navigator -- ACTION attribute:

<FORM ACTION="mailto:webmaster@www.capricorn.org" METHOD=POST>
Creating Buttons and Fields

<INPUT TYPE="type" NAME="name" VALUE="value">

Type
  text, password, file, checkbox, radio,
  hidden, submit, reset or image.

The NAME attribute assigns a name to the input field for
use in communicating the field's value to the script.

VALUE is optional, and assigns a default value to the field.
A one-line text entry field:

```
<INPUT TYPE="text" NAME="user" VALUE="Donald" SIZE=30>
```

VALUE will set the default initial value for the field.
If you leave this attribute out, the field will be blank.
SIZE sets the field's width in characters.
MAXLENGTH=integer
    to limit the number of characters the field will accept
    (if MAXLENGTH is greater than SIZE, the field will scroll).

Enter your name: <INPUT TYPE="text" NAME="user">

With only one text entry field “return” submit the form -- no need of submit button
A one-line password entry field:

```html
<INPUT TYPE="password" NAME="pass" VALUE="xyzzy" SIZE=10>
```

Like text but the browser does not display the text as the user types it in.

VALUE and SIZE attributes are optional, but NAME is not.
No Encryption.

A file upload field:

```html
<INPUT TYPE="file" NAME="itinerary" SIZE=50>
```

The browser will put up a text edit field and display a button labeled Browse. The user can type in the path name of a file on her system, or press the browse button and find one using a dialog box.
A group of checkboxes:

<input type="checkbox" name="to_go" value="yes" checked> To go

Checkboxes are buttons that can be toggled on or off

NAME attribute to identify it
VALUE attribute to specify its value when checked
CHECKED attribute initially activate the checkbox.

Query string

to_go=yes
<INPUT TYPE="checkbox" NAME="extras" VALUE="cinnamon"> Cinnamon
<INPUT TYPE="checkbox" NAME="extras" VALUE="nutmeg"> Nutmeg
<INPUT TYPE="checkbox" NAME="extras" VALUE="cocoa"> Cocoa
<INPUT TYPE="checkbox" NAME="extras" VALUE="sugar"> Sugar

Query String
extras=cinnamon&extras=cocoa&extras=sugar
A group of radio buttons:

<INPUT TYPE="radio" NAME="size" VALUE="single" CHECKED>Single
<INPUT TYPE="radio" NAME="size" VALUE="double">Double
<INPUT TYPE="radio" NAME="size" VALUE="triple">Triple

Query String
size=triple

◇Single ◇Double ◇Triple
A hidden field:

<INPUT TYPE="hidden" NAME="to" VALUE="fred">

A reset button:

<INPUT TYPE="reset" VALUE="Clear">

A submit button:

<INPUT TYPE="submit" NAME="action" VALUE="Order Now">
<INPUT TYPE="submit" NAME="action" VALUE="Order Later">
An in-line image that acts as a button:

<INPUT TYPE="image" NAME="cappucino" SRC="picts/cappucino.gif">

In-line image that acts as a submission button.

Also, the browser will add two parameters to the parameter list indicating the x and y coordinates of the mouse click:

    cappucino.x=36&cappucino.y=122
<INPUT>

text
   A single-line text entry field
password
   A single-line password entry field
file
   A file-upload field
checkbox
   A checkbox
radio
   A radio button
hidden
   An invisible label
image
   An in-line image that acts as a button
submit
   A button to submit the request
reset
   A button to reset the form to defaults