

Fall 2004 Handout 9

A function with an argument

Subject, verb, direct object

```
document.write("hello");
verse("little David");

document.write("cup", "cake");
over("Jimmy A Fountain", "jaf226");
```

When a URL gives command line arguments to a gateway, put a ? before the first argument and a before each subsequent argument.

```
1 <HTML>
2 <HEAD>
3 <TITLE>A function with an argument</TITLE>
4 </HEAD>
5 <BODY>
6 <H1>A function with an argument</H1>
7 The
8 <A HREF = "http://us.imdb.com/">Internet Movie Data Base</A>
9 has an entry for
10 <A HREF = "http://us.imdb.com/Title?Inherit+the+Wind+(1960)">Inherit
11 the Wind</a>,
12 with
13 <A HREF = "http://us.imdb.com/Name?Tracy,+Spencer">Spencer Tracy</A>
14 and
15 <A HREF = "http://us.imdb.com/Name?March,+Fredric">Fredric March</A>.
16
17 <SCRIPT TYPE = "text/javascript">
18
19 function chorus()
20 {
21     document.write (
22         "<P>Gimme that old time religion",
23         "<BR>Gimme that old time religion",
24         "<BR>Gimme that old time religion",
25         "<BR>It's good enough for me."
26     );
27 }
28
29 function verse(whom)
30 {
31     document.write (
32         "<P>It was good for ", whom,
33         "<BR>It was good for ", whom,
34         "<BR>It was good for ", whom,
35         "<BR>And it's good enough for me."
```

```

36     );
37 }
38
39 chorus();
40 verse ("the Hebrew Children");
41 chorus();
42 verse ("little David");
43 chorus();
44 verse ("old Jonah");
45 chorus();
46
47 </SCRIPT>
48 </BODY>
49 </HTML>

```

Find the x, y coordinates of a pixel in an image

Here are two server-side touch-sensitive imagemaps:

```

1 <HTML>
2 <HEAD>
3 <TITLE>Find the x, y coordinates of a pixel in an image</TITLE>
4 </HEAD>
5 <BODY>
6
7 <H1>Find the x, y coordinates of a pixel in an image</H1>
8 <A HREF = "http://acf5.nyu.edu/cgi-bin/donothing">
9 <IMG SRC = "../markface.gif" ISMAP>
10 </A>
11
12 <BR>
13
14 <A HREF = "/cgi-bin/donothing">
15 <IMG SRC = "001981.jpg" ISMAP>
16 </A>
17
18 </BODY>
19 </HTML>

```

Because of the line

```
ScriptAlias /cgi-bin/ /usr/local/etc/httpd/cgi-bin/
```

in the file `/usr/local/etc/httpd/conf/srm.conf`, the links to `http://i5.nyu.edu/cgi-bin/donothing` in lines 8 and 14 actually run the gateway `/usr/local/apache-1.3.14/cgi-bin/donothing` on `i5.nyu.edu`:

```

1 #!/bin/ksh
2 echo Status: 204 Do Nothing
3 echo
4 exit 0

```

Image replacement in an event handler: Flanagan p. 239; Wagner pp. 429-444

```

1 <HTML>
2 <HEAD>

```

```
3 <TITLE>Image replacement in an event handler</TITLE>
4 <META http-equiv = "Content-Script-Type" content = "text/javascript">
5 </HEAD>
6 <BODY>
7 <H1>Image replacement in an event handler</H1>
8
9 <IMG NAME = "thumbnail" SRC = "black.gif" WIDTH = 64 HEIGHT = 64>
10
11 <BR>
12
13 <A HREF = "/cgi-bin/imagemap/~mm64/x52.9755/001981.map">
14 <IMG SRC = "001981.jpg" ISMAP USEMAP = "#map">
15 </A>
16
17 <MAP NAME = "map">
18
19 <AREA SHAPE = CIRCLE COORDS = 214,125,10
20 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?jaf226"
21 onMouseOver = "
22     status = 'Jimmy A Fountain jaf226';
23     document.thumbnail.src = 'jaf226.jpg';
24     return true;
25 "
26 onMouseOut = "
27     status = '';
28     document.thumbnail.src = 'black.gif';
29     return true;
30 ">
31
32 <AREA SHAPE = CIRCLE COORDS = 360,128,10
33 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?ans210"
34 onMouseOver = "
35     status = 'Allison N Strandwitz ans210';
36     document.thumbnail.src = 'ans210.jpg';
37     return true;
38 "
39 onMouseOut = "
40     status = '';
41     document.thumbnail.src = 'black.gif';
42     return true;
43 ">
44
45 <AREA SHAPE = CIRCLE COORDS = 410,126,10
46 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?cgy204"
47 onMouseOver = "
48     status = 'Chris J Yellen cgy204';
49     document.thumbnail.src = 'cgy204.jpg';
50     return true;
51 "
52 onMouseOut = "
53     status = '';
54     document.thumbnail.src = 'black.gif';
55     return true;
56 ">
```

```
57
58 </MAP>
59 </BODY>
60 </HTML>
```

Cache the images in memory before you use them:**Flanagan pp. 240–241; Wagner pp. 282, 335**

Put the script in the <HEAD> to make sure that all the images are cached before the user could possibly invoke them.

```
1 <HTML>
2 <HEAD>
3 <TITLE>Cache the images in memory before you use them</TITLE>
4 <META http-equiv = "Content-Script-Type" content = "text/javascript">
5 <SCRIPT>
6 var black = new Image();
7 black.src = "black.gif";
8
9 var jaf226 = new Image();
10 jaf226.src = "jaf226.jpg";
11
12 var ans210 = new Image();
13 ans210.src = "ans210.jpg";
14
15 var cjy204 = new Image();
16 cjy204.src = "cjy204.jpg";
17 </SCRIPT>
18 </HEAD>
19 <BODY>
20 <H1>Cache the images in memory before you use them</H1>
21
22 <IMG NAME = "thumbnail" SRC = "black.gif" WIDTH = 64 HEIGHT = 64>
23
24 <BR>
25
26 <A HREF = "/cgi-bin/imagemap/~mm64/x52.9755/001981.map">
27 <IMG SRC = "001981.jpg" ISMAP USEMAP = "#map">
28 </A>
29
30 <MAP NAME = "map">
31
32 <AREA SHAPE = CIRCLE COORDS = 214,125,10
33 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?jaf226"
34 onMouseOver = "
35     status = 'Jimmy A Fountain jaf226';
36     document.thumbnail.src = jaf226.src;
37     return true;
38 "
39 onMouseOut = "
40     status = '';
41     document.thumbnail.src = black.src;
42     return true;
43 ">
44
```

```
45 <AREA SHAPE = CIRCLE COORDS = 360,128,10
46 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?ans210"
47 onMouseOver = "
48     status = 'Allison N Strandwitz ans210';
49     document.thumbnail.src = ans210.src;
50     return true;
51 "
52 onMouseOut = "
53     status = '';
54     document.thumbnail.src = black.src;
55     return true;
56 ">
57
58 <AREA SHAPE = CIRCLE COORDS = 410,126,10
59 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?cjy204"
60 onMouseOver = "
61     status = 'Chris J Yellen cjy204';
62     document.thumbnail.src = cjy204.src;
63     return true;
64 "
65 onMouseOut = "
66     status = '';
67     document.thumbnail.src = black.src;
68     return true;
69 ">
70
71 </MAP>
72 </BODY>
73 </HTML>
```

Consolidate similar event handlers into one function

```
1 <HTML>
2 <HEAD>
3 <TITLE>Consolidate similar event handlers into one function</TITLE>
4 <SCRIPT TYPE = "text/javascript">
5 var black = new Image();
6 black.src = "black.gif";
7
8 var a = new Array();
9
10 a["jaf226"] = new Image();
11 a["jaf226"].src = "jaf226.jpg";
12
13 a["ans210"] = new Image();
14 a["ans210"].src = "ans210.jpg";
15
16 a["cjy204"] = new Image();
17 a["cjy204"].src = "cjy204.jpg";
18
19 function over(realname, loginname)
20 {
21     status = realname + " " + loginname;
22     document.thumbnail.src = a[loginname].src;
```

```
23     return true;
24 }
25
26 function out()
27 {
28     status = '';
29     document.thumbnail.src = black.src;
30     return true;
31 }
32 </SCRIPT>
33 </HEAD>
34 <BODY>
35 <H1>Consolidate similar event handlers into one function</H1>
36
37 <IMG NAME = "thumbnail" SRC = "black.gif" WIDTH = 64 HEIGHT = 64>
38
39 <BR>
40
41 <A HREF = "/cgi-bin/imagemap/~mm64/x52.9755/001981.map">
42 <IMG SRC = "001981.jpg" ISMAP USEMAP = "#map">
43 </A>
44
45 <MAP NAME = "map">
46
47 <AREA SHAPE = CIRCLE COORDS = 214,125,10
48 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?jaf226"
49 onMouseOver = "return over('Jimmy A Fountain', 'jaf226');"
50 onMouseOut = "return out();">
51
52 <AREA SHAPE = CIRCLE COORDS = 360,128,10
53 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?ans210"
54 onMouseOver = "return over('Allison N Strandwitz', 'ans210');"
55 onMouseOut = "return out();">
56
57 <AREA SHAPE = CIRCLE COORDS = 410,126,10
58 HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?cgy204"
59 onMouseOver = "return over('Chris J Yellen', 'cgy204');"
60 onMouseOut = "return out();">
61
62 </MAP>
63 </BODY>
64 </HTML>
```

Do the same thing with links instead of <AREA>'s

```
1 <HTML>
2 <HEAD>
3 <TITLE>Do the same thing with links instead of &lt;AREA&gt;s</TITLE>
4 <SCRIPT TYPE = "text/javascript">
5 var black = new Image();
6 black.src = "black.gif";
7
8 var a = new Array();
9
```

```
10 a["jaf226"] = new Image();
11 a["jaf226"].src = "jaf226.jpg";
12
13 a["ans210"] = new Image();
14 a["ans210"].src = "ans210.jpg";
15
16 a["cjy204"] = new Image();
17 a["cjy204"].src = "cjy204.jpg";
18
19 function over(realname, loginname)
20 {
21     status = realname + " " + loginname;
22     document.thumbnail.src = a[loginname].src;
23     return true;
24 }
25
26 function out()
27 {
28     status = '';
29     document.thumbnail.src = black.src;
30     return true;
31 }
32 </SCRIPT>
33 </HEAD>
34 <BODY>
35 <H1>Do the same thing with links instead of &lt;AREA&gt;s</H1>
36
37 <IMG NAME = "thumbnail" SRC = "black.gif" WIDTH = 64 HEIGHT = 64>
38
39 <BR>
40
41 <OL>
42 <LI>
43 <A HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?jaf226"
44 onMouseOver = "return over('Jimmy A Fountain', 'jaf226');"
45 onMouseOut = "return out();"
46 >Jimmy A Fountain</A>
47
48 <LI>
49 <A HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?ans210"
50 onMouseOver = "return over('Allison N Strandwitz', 'ans210');"
51 onMouseOut = "return out();"
52 >Allison N Strandwitz</A>
53
54 <LI>
55 <A HREF = "/cgi-bin/cgiwrap/~mm64/classphoto?cjy204"
56 onMouseOver = "return over('Chris J Yellen', 'cjy204');"
57 onMouseOut = "return out();"
58 >Chris J Yellen</A>
59 </OL>
60
61 </BODY>
62 </HTML>
```

Do something once in the future:**Flanagan pp. 164–165; Wagner pp. 240–242**

Note that the program does not get stuck for five seconds at line 9.

```

1 <HTML>
2 <HEAD>
3 <TITLE>Do something once in the future</TITLE>
4 </HEAD>
5 <BODY>
6 <H1>Do something once in the future</H1>
7 <SCRIPT TYPE = "text/javascript">
8 document.write(Date());
9 setTimeout ("status = '5 seconds have elapsed.';", 5000);
10 document.write("<BR>" + Date());
11 </SCRIPT>
12 </BODY>
13 </HTML>

```

Do something over and over in the future:**Flanagan pp. 164–165, 202–203; Wagner pp. 426–429**

Next time: upgrade from `setTimeout` to `setInterval`.

```

1 <HTML>
2 <HEAD>
3 <TITLE>Do something over and over in the future</TITLE>
4 </HEAD>
5 <BODY>
6 <H1>Do something over and over in the future</H1>
7 <SCRIPT TYPE = "text/javascript">
8 var message = "New Ajax laundry detergent is stronger than dirt! ";
9
10 function f()
11 {
12     setTimeout ("f();", 200);
13     status = message;
14     message = message.substring(1) + message.charAt(0);
15 }
16
17 f();
18
19 </SCRIPT>
20 </BODY>
21 </HTML>

```

How much longer do we have to sit here?

```

1 <HTML>
2 <HEAD>
3 <TITLE>How much longer do we have to sit here?</TITLE>
4 </HEAD>
5 <BODY>
6 <H1>How much longer do we have to sit here?</H1>
7 <SCRIPT TYPE = "text/javascript">
8

```

```
9 function f()
10 {
11     setTimeout ("f();", 1000);
12
13     var now = new Date();
14
15     //Number of seconds till class is over at 21:10:00 (9:10pm):
16     var interval =
17         60 * 60 * (21 - now.getHours()) +
18         60 * (10 - now.getMinutes()) +
19         0 - now.getSeconds();
20
21     var hours    = Math.floor(interval / (60 * 60)) % 24;
22     var minutes  = Math.floor(interval / 60          ) % 60;
23     var seconds  = interval                          % 60;
24
25     //Make sure each number is exactly two digits.
26     if (minutes < 10) {
27         minutes = "0" + minutes;
28     }
29     if (seconds < 10) {
30         seconds = "0" + seconds;
31     }
32
33     status =
34         "Only " + hours + ":" + minutes + ":" + seconds + " till class is over."
35 }
36
37 f();
38
39 </SCRIPT>
40 </BODY>
41 </HTML>
```

Consolidate the event handlers in a form

```
1 <HTML>
2 <HEAD>
3 <TITLE>Consolidate the event handlers in a form</TITLE>
4 <META http-equiv = "Content-Script-Type" content = "text/javascript">
5 <SCRIPT>
6 function f(inp)
7 {
8     if (document.pizzaform.cheese[3].checked &&
9         document.pizzaform.olives.checked) {
10
11         alert ('Olives and gouda do not go together.');
```

```
12         inp.checked = false;
13     }
14 }
15 </SCRIPT>
16 </HEAD>
17 <BODY>
18 <H1>Consolidate the event handlers in a form</H1>
```

```
19 <HR>
20
21 <FORM
22 NAME = "pizzaform"
23 METHOD = POST
24 ACTION = "/cgi-bin/cgiwrap/~mm64/onclick">
25
26 <h2>Order a slice of pizza</h2>
27
28 <P>Select only one kind of cheese:
29 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "regular" CHECKED>Regular
30 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "goat">Goat
31 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "velveeta">Velveeta
32 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "gouda" onClick = "f(this);">Gouda
33
34 <P>Select as many toppings as you want. 50¢ each:
35 <BR><INPUT TYPE = CHECKBOX VALUE = 1 NAME = "pepperoni">Pepperoni
36 <BR><INPUT TYPE = CHECKBOX VALUE = 1 NAME = "mushroom">Mushroom
37 <BR><INPUT TYPE = CHECKBOX VALUE = 1 NAME = "sausage">Sausage
38 <BR><INPUT TYPE = CHECKBOX VALUE = 1 NAME = "olives" onClick = "f(this);">Olives
39
40 <P>
41 <INPUT TYPE = SUBMIT VALUE = "Order the slice.">
42 <INPUT TYPE = RESET VALUE = "Start again.">
43 </FORM>
44 <HR>
45 </SCRIPT>
46 </BODY>
47 </HTML>
```

Do arithmetic in the event handlers

```
1 <HTML>
2 <HEAD>
3 <TITLE>A form that runs JavaScript event handlers</TITLE>
4 <SCRIPT TYPE = "text/javascript"
5 ACTION = "http://i5.nyu.edu/cgi-bin/cgiwrap/donothing">
6
7 function compute()
8 {
9     var total = 1.75;
10
11     if (document.myform.pepperoni.checked) {
12         total = total + .50;
13     }
14     if (document.myform.mushroom.checked) {
15         total = total + .50;
16     }
17     if (document.myform.sausage.checked) {
18         total = total + .50;
19     }
20     if (document.myform.olives.checked) {
21         total = total + .50;
22     }
```

```
23
24     var v = parseInt(document.myform.n.value);
25     if (isNaN(v)) {
26         alert ("The number of slices must be a number.");
27         return;
28     }
29     total = total * v;
30
31     //total must have 2 digits to the right of the decimal point.
32     total = total.toString();
33     if (total.indexOf(".") == -1) {
34         total = total + ".00";
35     } else if (total.indexOf(".") == total.length - 1) {
36         total = total + "00";
37     } else if (total.indexOf(".") == total.length - 2) {
38         total = total + "0";
39     }
40
41     document.myform.total.value = "$" + total;
42 }
43
44 </SCRIPT>
45 </HEAD>
46 <BODY>
47 <H1>A form that runs JavaScript event handlers</H1>
48
49 <HR>
50 <FORM NAME = "myform" METHOD = POST>
51
52 <P>
53 How many slices @ $1.75 each?
54 <INPUT TYPE = TEXT SIZE = 3 NAME = "n" onChange = "compute();">
55 <INPUT TYPE = BUTTON VALUE = "OK">
56
57 <P>Select only one kind of cheese:
58 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "regular" CHECKED>Regular
59 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "goat">Goat
60 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "velveeta">Velveeta
61 <BR><INPUT TYPE = RADIO NAME = "cheese" VALUE = "gouda" onClick = "
62     if (this.checked && document.myform.olives.checked) {
63         alert ('Gouda does not go with olives.');
```

```

77     alert ('Olives do not go with Gouda.');
```

```
78     }
```

```
79     compute();
```

```
80 " NAME = "olives">Olives
```

```
81
```

```
82 <P>
```

```
83 Total cost (do not write in this box):
```

```
84 <INPUT TYPE = TEXT SIZE = 7 NAME = "total" VALUE = "$0.00"
```

```
85     onFocus = "this.blur();">
```

```
86
```

```
87 <P>
```

```
88 <INPUT TYPE = SUBMIT VALUE = "Order the slice(s).">
```

```
89 <INPUT TYPE = RESET VALUE = "Start again.">
```

```
90 </FORM>
```

```
91 <HR>
```

```
92 </BODY>
```

```
93 </HTML>
```

Consolidate lines 10–21 to

```

1     for (var i = 6; i <= 9; i = i + 1) {
2         if (document.myform.elements[i].checked) {
3             total += .50;
4         }
5     }
```

Handle individual keystrokes

We also need an `onSelect` event handler.

```

1 <HTML>
2 <HEAD>
3 <TITLE>Handle individual keystrokes</TITLE>
4 <META http-equiv = "Content-Script-Type" content = "text/javascript">
5 <SCRIPT>
6 var n = "i"; //number typed into the INPUT tag.
7 </SCRIPT>
8 </HEAD>
9 <BODY>
10 <H1>Handle individual keystrokes</H1>
11
12 <HR>
13 <FORM NAME = "myform" METHOD = POST ACTION = "/cgi-bin/donothing">
14
15 <P>
16 Please type a number.
17 You can press only digits and the backspace key:
18 <INPUT TYPE = TEXT SIZE = 5 NAME = "textbox" onKeyPress = "
19     var code = event.which;
20     var c = String.fromCharCode(code);
21
22     if ('0' <= c && c <= '9') {
23         n = n + c;
24     } else if (code != 8) {
25         //8 is the ASCII code of a backspace.
26         //Do not display letters, punctuation marks, etc.
```

```
27     return false;
28   } else if (n.length > 0) {
29     //The user pressed the delete key.
30     n = n.substring(0, n.length - 1);
31   } else {
32     alert ('No characters to delete');
33   }
34
35   window.status =
36     'Event type is ' + event.type +
37     ', ASCII code is ' + code +
38     ', character is \'' + c + '\'' +
39     ', the string n is \'' + n + '\'';
40
41   return true;
42 ">
43
44 <BR>
45 <INPUT TYPE = SUBMIT VALUE = "Submit" onClick = "alert(n);">
46 <INPUT TYPE = RESET VALUE = "Reset" onClick = "n = '';">
47 </FORM>
48 <HR>
49 </BODY>
50 </HTML>
```

□