

LING 408/508: Computational Techniques for Linguists

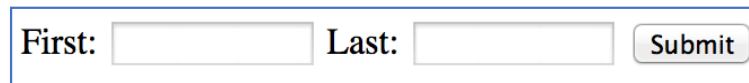
Lecture 25

Today's Topics

- Homework 9 from last week:
 - everyone got cgi-bin bash shell scripts working?
- Last time:
 - GET method
- Today:
 - POST method
 - GET method: appending data to a file
- Homework 10:
 - every should install and test the GET and POST methods

Sending information using **POST**

Sending information using POST



First: Last:

- HTML form:

1. `<form action="http://localhost/cgi-bin/read.cgi" method="POST">`
2. `First: <input type="text" name="first" size=12>`
3. `Last: <input type="text" name="last" size=12>`
4. `<input type="submit">`
5. `</form>`

- **bash** accesses the URL-encoded string on standard input via `read`
 - cf. GET using **QUERY_STRING**

Sending information using POST

- **bash** accesses the URL-encoded string on standard input via `read`

- `read.cgi`:

```
1.#!/bin/bash
2.echo "Content-Type: text/plain"
3.echo
4.read input
5.origIFS=$IFS
6.IFS='&'
7.set -- $input
8.IFS=$origIFS
9.echo "<$2><$4>"
```

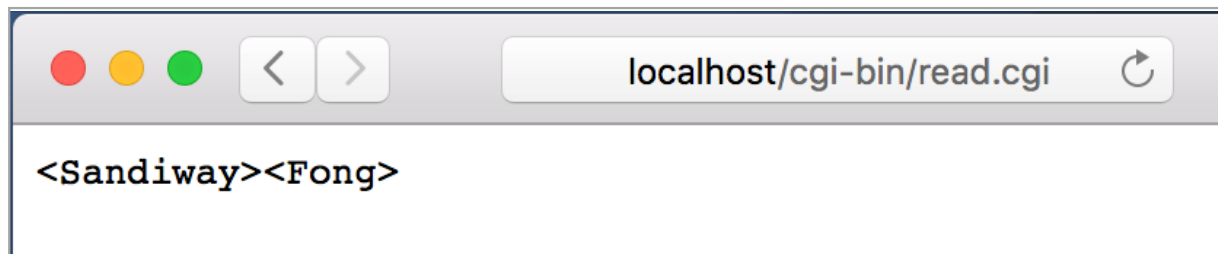
`read`

Read a line from standard input

Syntax

```
read [-ers] [-a aname] [-p prompt] [-t timeout]
     [-n nchars] [-d delim] [name...]
```

Sending information using POST



Client-side code:

```
1 <!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
2 <html> <head>
3 <title>CGI POST Example</title>
4 </head>
5 <body>
6 <h1>CGI POST Example</h1>
7 <form action="http://localhost/cgi-bin/read.cgi" method="POST">
8 First: <input type="text" name="first" size=12>
9 Last: <input type="text" name="last" size=12>
10 <input type="submit">
11 </form>
12 </body> </html>
```

Server-side code:

- read.cgi:
 1. #!/bin/bash
 2. echo "Content-Type: text/plain"
 3. echo
 4. **read input**
 5. origIFS=\$IFS
 6. IFS='&'
 7. set -- \$input
 8. IFS=\$origIFS
 9. echo "<\$2><\$4>"

Example: adding names to a list on a server

Normally, you'd set up database software, e.g. mysql, on the webserver

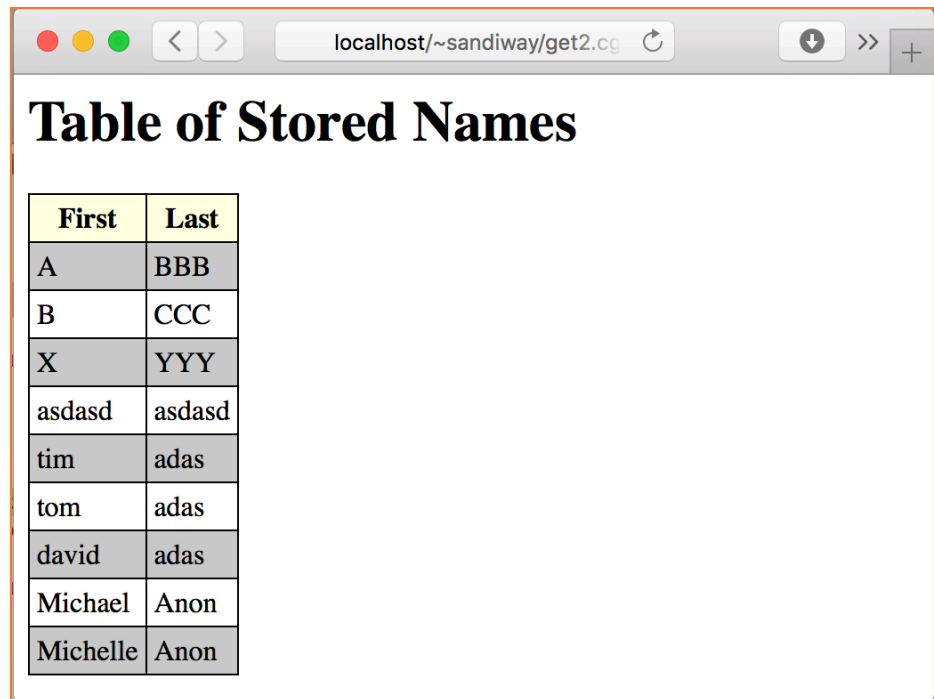


file:///Users/sandiway/course

CGI GET Example

Adds names to a list kept on the webserver.
Prints out the saved list.

First: Last:



localhost/~sandiway/get2.cg

Table of Stored Names

First	Last
A	BBB
B	CCC
X	YYY
asdasd	asdasd
tim	adas
tom	adas
david	adas
Michael	Anon
Michelle	Anon

Example: adding names to a list on a server

Client side:
addnames.html

Server side:
get2.cgi
names-list.txt

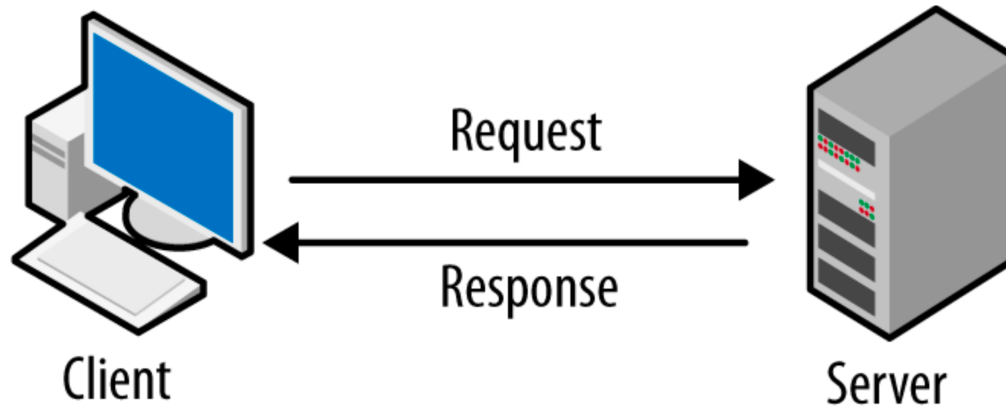


image from https://madooei.github.io/cs421_sp20_homepage/client-server-app/

A Note on Permissions

- Caution!
 - the Apache2.4 processes must be able to write to the directory in which names-list.txt is stored
 - this is not you, but typically `_www` or `www`.
- On MacOS: `~/Sites` must have world write permission,
 - `chmod a+w ~/Sites`
- On Ubuntu: `~/public_html` must have world write permission,
 - `chmod a+w ~/public_html`

Example: adding names to a list on a server

Server-side: get2.cgi

```
1#!/bin/bash
2echo "Content-Type: text/html; charset=utf-8"
3echo
4echo "<html><head><style>"
5echo "table { border-collapse: collapse }"
6echo "td, th { border: 1px solid; padding: 4px }"
7echo "th { background-color: lightyellow }"
8echo "tr:nth-child(even) { background-color: #ccc }"
9echo "</style></head>"
10echo "<body><h1>Table of Stored Names</h1>"
11origIFS=$IFS
12IFS='&'
13set -- $QUERY_STRING
14IFS=$origIFS
15# names-list.txt must exist and
16# be write-able for everyone (www)!
17echo "$2 $4" >> names-list.txt
18echo "<table><tr><th>First</th><th>Last</th></tr>"
19while read -r first last
20do
21    echo "<tr><td>$first</td><td>$last</td></tr>"
22done < names-list.txt
23echo "</table>"
24echo "</body></html>"
25exit 0
```

Client-side: addnames.html

```
1 <!DOCTYPE HTML>
2 <html>
3   <head>
4     <title>CGI GET Example</title>
5   </head>
6   <body>
7     <h1>CGI GET Example</h1>
8     Adds names to a list kept on the webserver.
9     <br>
10    Prints out the saved list.
11    <p></p>
12    <form action="http://localhost/~sandiway/get2.cgi" method="GET">
13      First: <input type="text" name="first" size=12>
14      Last: <input type="text" name="last" size=12>
15      <input type="submit">
16    </form>
17  </body>
18 </html>
```

Data file:

```
touch names-list.txt          (create an empty file)
chmod a+w names-list.txt
```

Example: adding/deleting names on a server

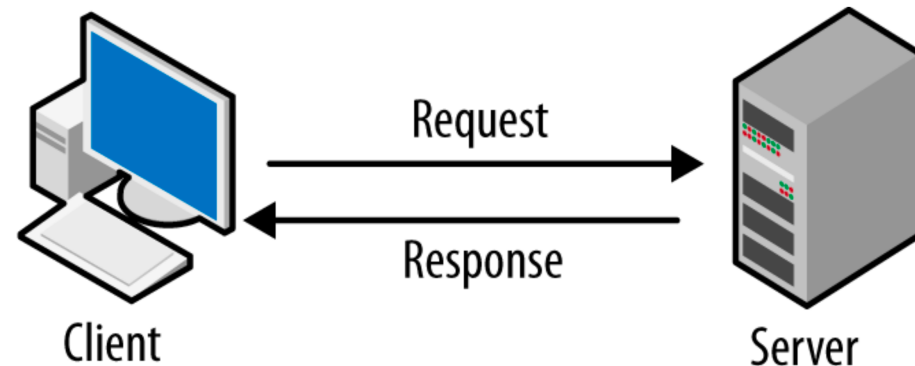
Table of Stored Names

First: Last: Add:

First	Last	
First	Last	<input type="button" value="Delete"/>
John	A	<input type="button" value="Delete"/>
Mary	B	<input type="button" value="Delete"/>

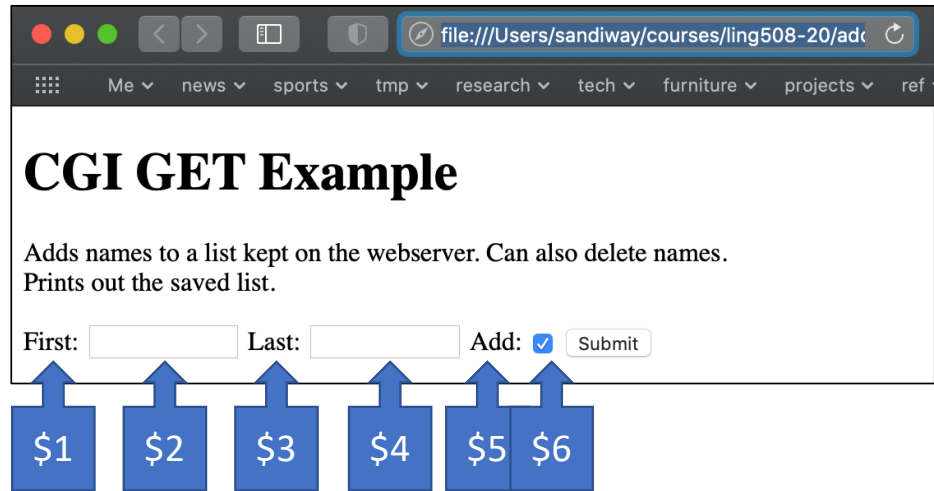
Client side:
addnames3.html

Server side:
get3.cgi
names-list.txt



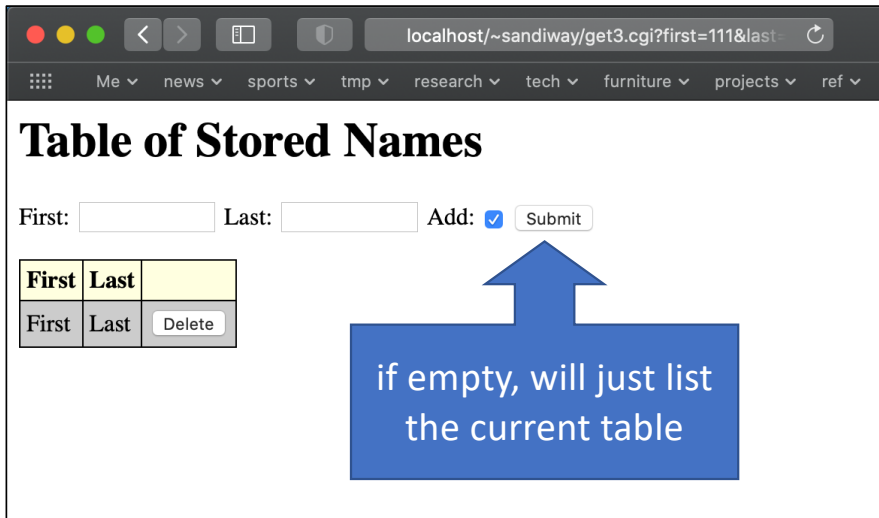
addnames3.html

```
1<!DOCTYPE HTML>
2<html>
3  <head>
4    <title>CGI GET Example</title>
5  </head>
6  <body>
7    <h1>CGI GET Example</h1>
8    Adds names to a list kept on the webserver. Can also delete names.
9    <br>
10   Prints out the saved list.
11   <p></p>
12   <form action="http://localhost/~sandiway/get3.cgi" method="GET">
13     First: <input type="text" name="first" size=12>
14     Last:  <input type="text" name="last"  size=12>
15     Add:  <input type="checkbox" name="add" checked>
16           <input type="submit">
17   </form>
18 </body>
19</html>
```



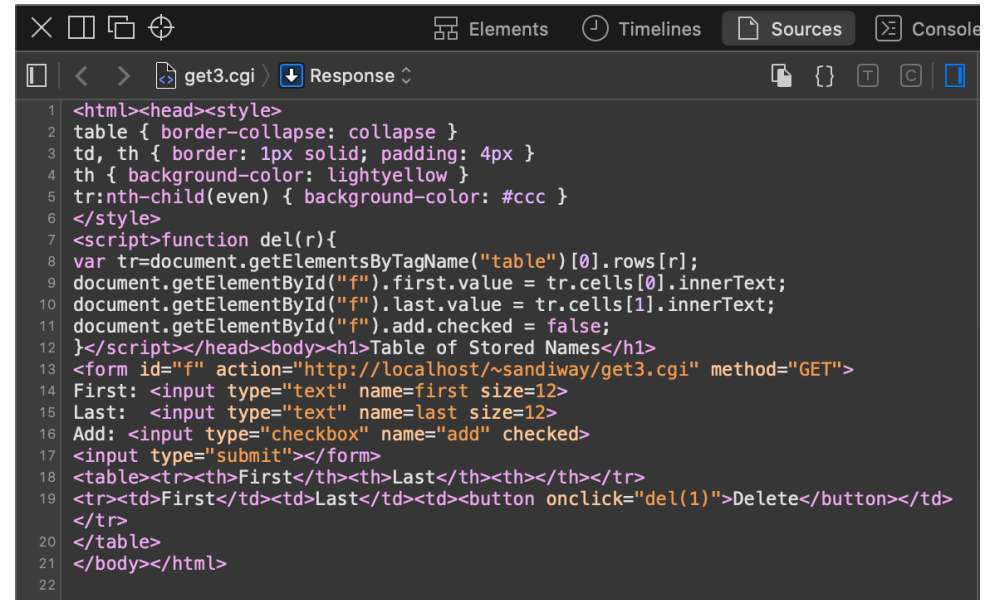
Note: actually \$1, \$3 and \$5 are names "first", "last" and "add"

get3.cgi



The screenshot shows a web browser window with the URL `localhost/~sandaway/get3.cgi?first=111&last=`. The page title is "Table of Stored Names". Below the title is a form with three input fields: "First:" (containing "111"), "Last:" (empty), and "Add:" (checked). A "Submit" button is to the right of the "Add:" checkbox. Below the form is a table with two columns: "First" and "Last". The table has two rows: the first row has "111" in the "First" column and an empty cell in the "Last" column; the second row has "111" in the "First" column and "Delete" in the "Last" column. A blue arrow points from a blue box below the table to the "Add:" checkbox. The blue box contains the text "if empty, will just list the current table".

First	Last
111	
111	Delete



```
1 <html><head><style>
2 table { border-collapse: collapse }
3 td, th { border: 1px solid; padding: 4px }
4 th { background-color: lightyellow }
5 tr:nth-child(even) { background-color: #ccc }
6 </style>
7 <script>function del(r){
8   var tr=document.getElementsByTagName("table")[0].rows[r];
9   document.getElementById("f").first.value = tr.cells[0].innerText;
10  document.getElementById("f").last.value = tr.cells[1].innerText;
11  document.getElementById("f").add.checked = false;
12 }</script></head><body><h1>Table of Stored Names</h1>
13 <form id="f" action="http://localhost/~sandaway/get3.cgi" method="GET">
14 First: <input type="text" name=first size=12>
15 Last: <input type="text" name=last size=12>
16 Add: <input type="checkbox" name="add" checked>
17 <input type="submit"></form>
18 <table><tr><th>First</th><th>Last</th><th></th></tr>
19 <tr><td>First</td><td>Last</td><td><button onclick="del(1)">Delete</button></td>
20 </tr>
21 </table>
22 </body></html>
```

Note: action is `http://localhost/~sandaway/get3.cgi`

get3.cgi

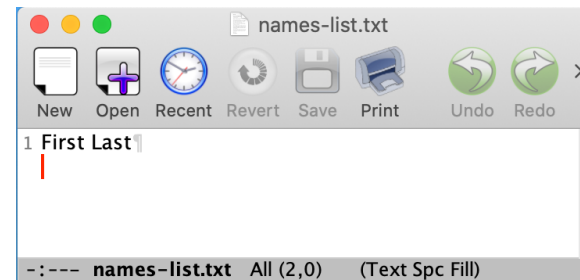
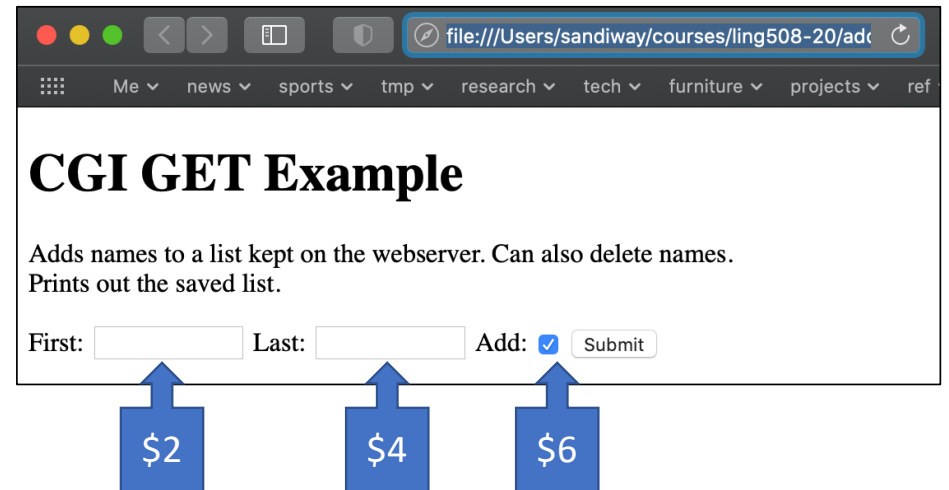
```
1#!/bin/bash
2echo "Content-Type: text/html; charset=utf-8"
3echo
4echo "<html><head><style>"
5echo "table { border-collapse: collapse }"
6echo "td, th { border: 1px solid; padding: 4px }"
7echo "th { background-color: lightyellow }"
8echo "tr:nth-child(even) { background-color: #ccc }"
9echo "</style>"
10echo "<script>function del(r){"
11echo "var tr=document.getElementsByTagName(\"table\")[0].rows[r];"
12echo "document.getElementById(\"f\").first.value = tr.cells[0].innerText;"
13echo "document.getElementById(\"f\").last.value = tr.cells[1].innerText;"
14echo "document.getElementById(\"f\").add.checked = false;"
15echo "}</script></head><body><h1>Table of Stored Names</h1>"
16echo "<form id=\"f\" action=\"http://localhost/~sandiway/get3.cgi\" method=\"GET\">"
17echo "First: <input type=\"text\" name=\"first\" size=12>"
18echo "Last: <input type=\"text\" name=\"last\" size=12>"
19# checked: "on" as value
20echo "Add: <input type=\"checkbox\" name=\"add\" checked>"
21echo "<input type=\"submit\"></form>"
22origIFS=$IFS
```

get3.cgi

```
23 IFS='&'
24 set -- $QUERY_STRING
25 IFS=$origIFS
26 # names-list.txt must exist and
27 # be write-able for everyone (www)!
28 if [ "$6" = 'on' ]; then
29     if [ "$2" != '' ] && [ "$4" != '' ]; then
30         echo "$2 $4" >> names-list.txt
31     fi
32 else
33     perl -i -ne "print unless m/^\$2 \$4$/" names-list.txt
34 fi
35 echo "<table><tr><th>First</th><th>Last</th><th></th></tr>"
36 i=1
37 while read -r first last
38 do
39     echo "<tr><td>$first</td><td>$last</td><td><button onclick=\"del(\$i)\">>Delete</button></td></tr>"
40     ((i++))
41 done < names-list.txt
42 echo "</table>"
43 echo "</body></html>"
44 exit 0
```

get3.cgi

```
if [ "$6" = 'on' ]; then
    if [ "$2" != "" ] && [ "$4" != "" ]; then
        echo "$2 $4" >> names-list.txt
    fi
else
    perl -i -ne "print unless m/^\$2 \$4$/" names-list.txt
fi
```



get3.cgi

```
echo "<table><tr><th>First</th><th>Last</th><th></th></tr>"
```

```
i=1
```

```
while read -r first last
```

-r do not allow backslashes to escape any characters

```
do
```

```
    echo "<tr><td>$first</td><td>$last</td><td><button  
onclick=\"del($i)\">Delete</button></td></tr>"
```

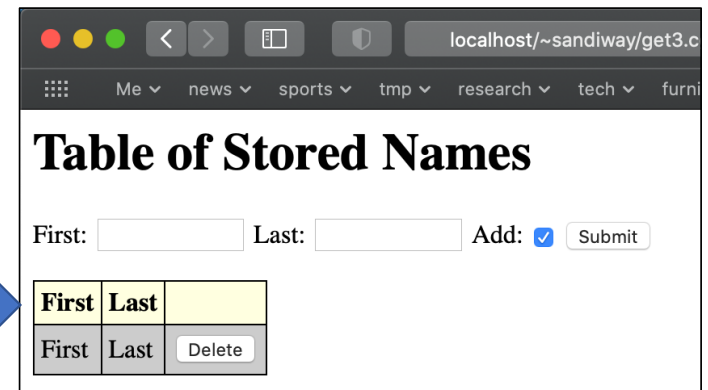
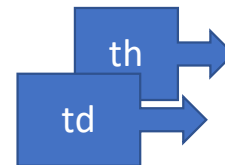
```
    ((i++))
```

```
done < names-list.txt
```

read from
names-list.txt

```
echo "</table>"
```

```
echo "</body></html>"
```



get3.cgi

```
echo "<table><tr><th>First</th><th>Last</th><th></th></tr>"  
i=1  
while read -r first last  
do
```

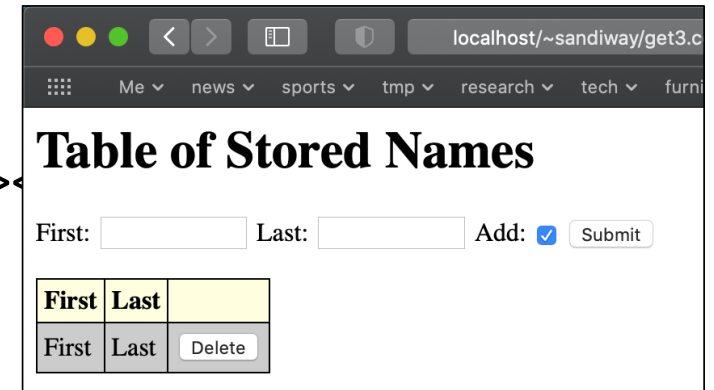
```
    echo "<tr><td>$first</td><td>$last</td><td><button  
onclick=\"del($i)\">Delete</button></td></tr>"
```

```
    ((i++))
```

```
done < names-list.txt
```

```
echo "</table>"
```

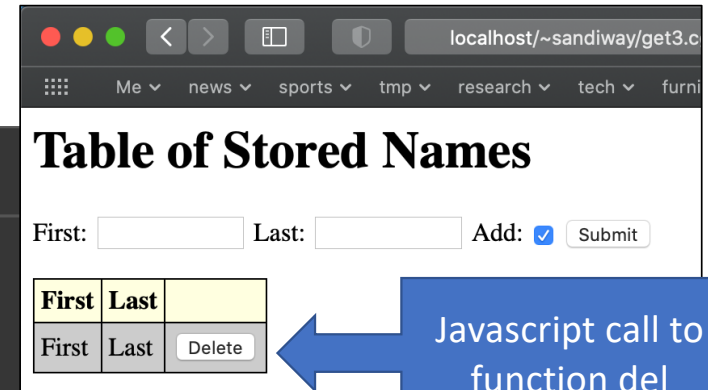
```
echo "</body></html>"
```



```
17 <input type="submit"></form>  
18 <table><tr><th>First</th><th>Last</th><th></th></tr>  
19 <tr><td>First</td><td>Last</td><td><button onclick="del(1)">Delete</button></td>  
20 </tr>  
</table>
```

get3.cgi

```
1 <html><head><style>
2 table { border-collapse: collapse }
3 td, th { border: 1px solid; padding: 4px }
4 th { background-color: lightyellow }
5 tr:nth-child(even) { background-color: #ccc }
6 </style>
7 <script>function del(r){
8   var tr=document.getElementsByTagName("table")[0].rows[r];
9   document.getElementById("f").first.value = tr.cells[0].innerText;
10  document.getElementById("f").last.value = tr.cells[1].innerText;
11  document.getElementById("f").add.checked = false;
12 }</script></head><body><h1>Table of Stored Names</h1>
13 <form id="f" action="http://localhost/~sandiway/get3.cgi" method="GET">
```



Javascript call to function del

