

# CGI 2

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## Overview

### Form

**action=cgi-url**  
**fields**  
**submit**  
send bindings to CGI

### CGI Environment

**environment variables**  
**query\_string**  
**1. info from client side**  
**2. info from server**

### Forms

An HTML form accepts user input (text fields, checkboxes...) on the client side, and sends the data to a CGI on the server side when the "submit" button is selected.

```
<form action = cgi-url method = get/post>....</form>
```

On submission, sends data to server script named in action. If action is omitted, sends data to the URL which produced the form.

The data is encoded as attribute/value pairs with each space changed to a '+', bindings separated by '&', and non alpha-numeric characters encoded with the "%xx" form where xx is the hex code for the character.

```
name=Chuck+Jones&age=35&topping=anchovies
```

Each form element has a name which is used to identify it in the attribute value pairs such as "name" and "age" in the above example.

- 1) GET method. Attribute/value pairs attached to URL after the ?. This is the simple approach - ok for small amounts of data. Has the advantage that CGI operations can be bookmarked.
- 2) POST method. Attribute/value pair sent from the client to the server through a TCP stream. Script reads them from stdin.

JavaScript can be used to make a form a little more reactive before the submit -- we may study JavaScript a little at the end of the quarter. The MIME type for the above (+, =, &) encoding is application/x-www-form-urlencoded. Some browsers also support an ENCTYPE=multipart/form-data submission where the form is encoded like a MIME mail enclosure and then submitted by the Post method.

## Input Fields

### name and type

Name and type are required for each input type, except the submit button which is type only

### type=text

```
<p>
<input type=text name = "first-name" size = 40 value="Bob">
```

#### name

name="xxx" defines the name used to return the data, not shown in client HI.

#### mapping

Maps to first-name=*whatever-they-type-in-the-field* when sent to server.

#### size

Width in characters of the input box

#### maxLength

max length in characters of the entered string

#### value="Bob"

to sets default text

#### type=password

similar but doesn't show characters on screen

## type=checkbox

### On-or-off

```
<input type=checkbox valuenam=rude checked>Rude Mode
```

#### mapping

Maps to rude=on if checkbox is checked, otherwise nothing. There's no automatic title around the checkbox, so you need to include your own title as HTML near the checkbox.

## value=

If there's a value binding, that is used instead of the string "on"

## type=radio

### One-of

All have the same name and different values.

One can be checked

```
<p>
```

```
Insult Size:
```

```
<input type=radio name=size value = "small">Small
```

```
<input type=radio name=size value = "medium" checked>Medium
```

```
<input type=radio name=size value = "large">Large
```

## mapping

Maps to size=medium

## <select> Pop-Up

### size=10

presents the options in a list

### multiple

<select multiple ...> allows multiple selections which map to  
animal=Stoat&animal=Goat

## <option>

Contains option tags followed by text

## value=

Can have value= within an option, otherwise uses text as value  
"selected" pre-selects one

## <textarea>

### Big text area for typing...

```
<textarea name = "comments" rows = rows cols = columns> ...</textarea>
```

```
<br><textarea name=comments rows=4 cols=60 wrap>
```

## type=hidden

Maps to secret=blorg in data, but doesn't show in client HI — a good way to  
store information in the form for later reading by your CGI.

```
<input type = "hidden" name = "secret" value = "blorg">
```

## type=submit

Submit the data to the action url. If it is given a name (optional), the clicked button is given a binding in the submission — handy if you have multiple buttons and you need to know which was clicked.

```
<input type=submit name=optional value="Submit Insult Request">
```

## type=reset

Clear all fields in client HI

I have never in my life gotten any use out of this button

```
<input type = "reset" value = "button-title">
```

## HTML

```
<html>

<head>
<title>Sample Form</title>
</head>

<body bgcolor=white>

<!-- form tag -->
<form
  action=http://www-cs-faculty.stanford.edu/cgi-bin/nick/dumpform.pl
  method=get>

<h1>Insult Generator</h1>

<!-- text input -->
<p>
First name:
<input type=text name = "first-name" size = 40 value="Bob">

<!-- checkbox -->
<p>
<input type=checkbox name=rude>Rude mode

<p>
Insult Size:
<br><input type=radio name=size value = "small">Small
<br><input type=radio name=size value = "medium" checked>Medium
<br><input type=radio name=size value = "large">Large

<!-- selection pop-up list -->
<p>
Preferred Animal:
<select name = "animal">
<option>Stoat
<option selected>Goat
<option>Weasel
</select>
```

```
<!-- selection scrollable list -->
<p>
Color:<br>
<select name = "color" size=8>
<option>red
<option selected>blue
<option>green
<option>purple
<option>pink
<option>yellow
<option>striped
<option>brown
<option>mauve
<option>dotted
<option>speckled
<option>puce
<option>orange
<option>tan
<option>black
<option>white
<option>gray
</select>

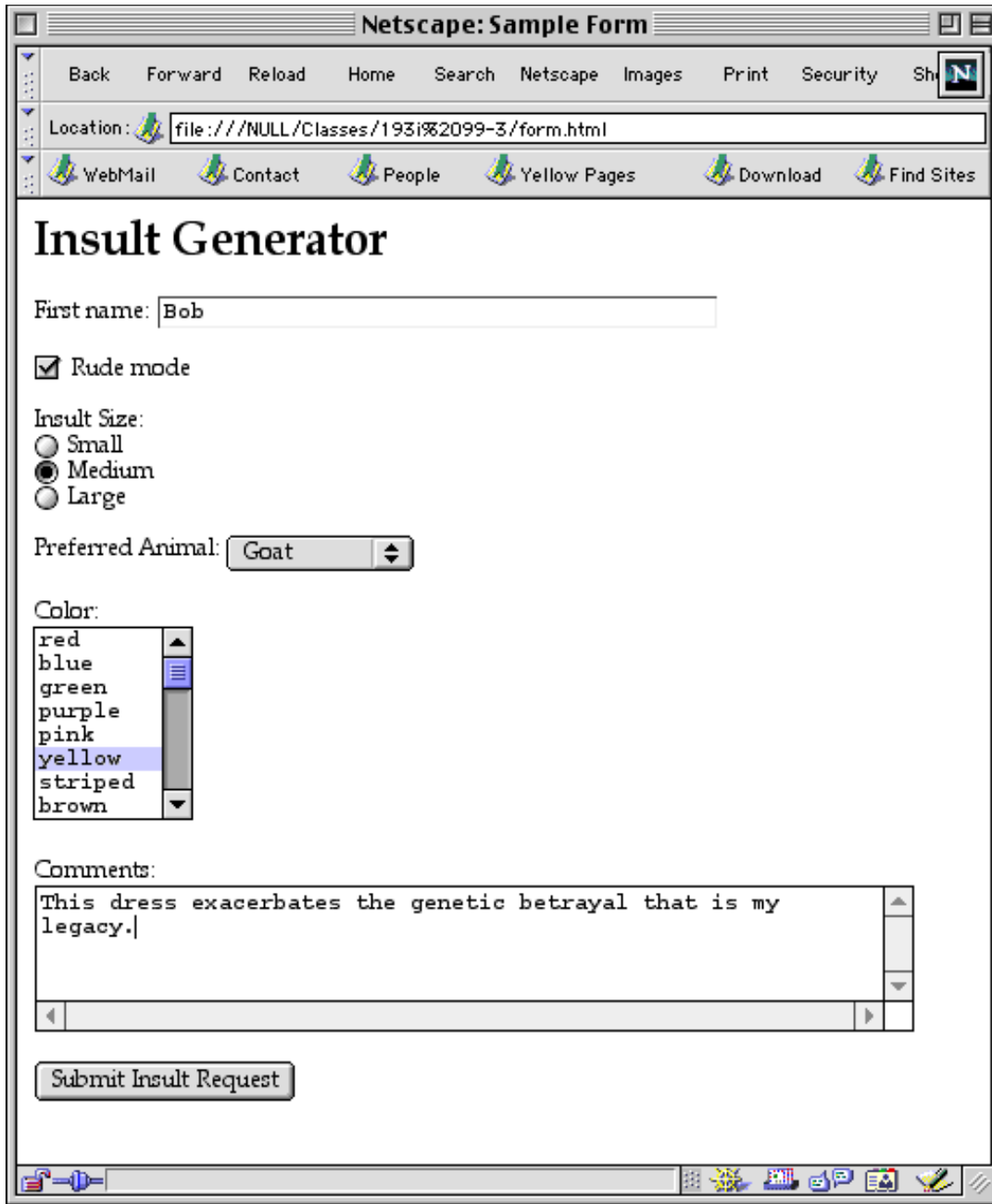
<!-- hidden field -->
<input type=hidden name=secretcode value="Keyser Soze">

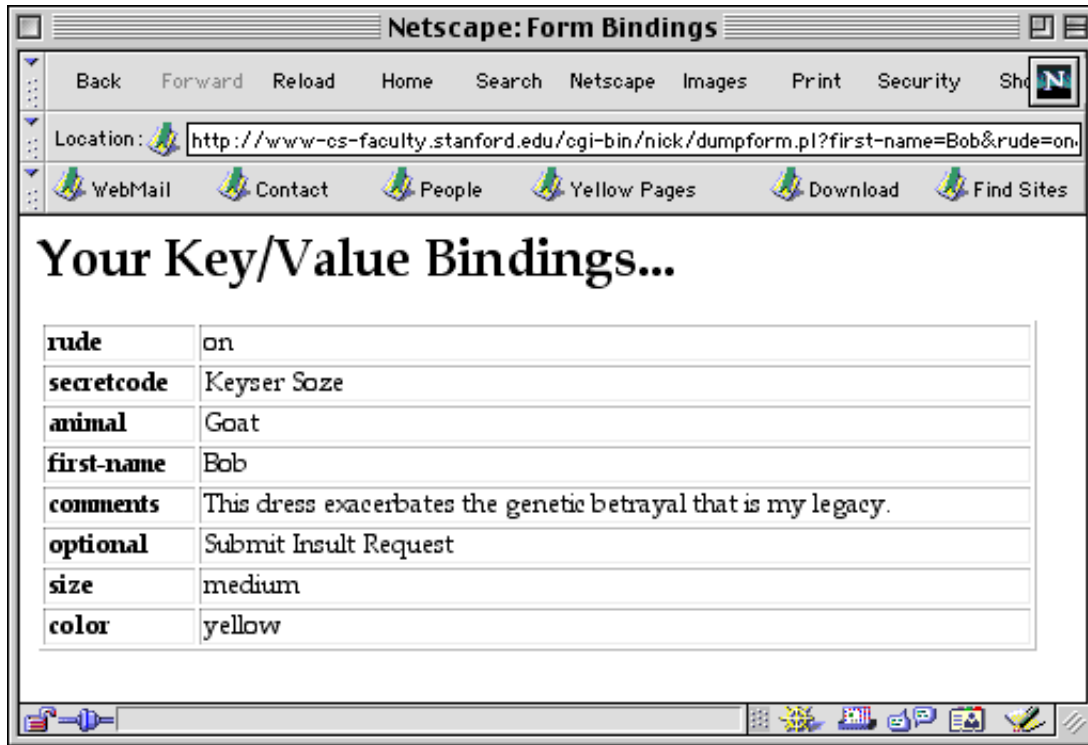
<!-- text area -->
<p>
Comments:
<br><textarea name=comments rows=4 cols=60 wrap>
</textarea>

<!-- submit button -->
<p>
<input type=submit name=optional value="Submit Insult Request">

</form>

</body>
</html>
```





The screenshot shows a Netscape browser window titled "Netscape: Form Bindings". The address bar contains the URL: `http://www-cs-faculty.stanford.edu/cgi-bin/nick/dumpform.pl?first-name=Bob&rude=on`. Below the address bar are navigation buttons: Back, Forward, Reload, Home, Search, Netscape, Images, Print, Security, and Show. A toolbar below the navigation buttons includes icons for WebMail, Contact, People, Yellow Pages, Download, and Find Sites. The main content area displays the heading "Your Key/Value Bindings..." followed by a table of form data.

<b>rude</b>	on
<b>secretcode</b>	Keyser Soze
<b>animal</b>	Goat
<b>first-name</b>	Bob
<b>comments</b>	This dress exacerbates the genetic betrayal that is my legacy.
<b>optional</b>	Submit Insult Request
<b>size</b>	medium
<b>color</b>	yellow