ĐẠI HỌC BÁCH KHOA HÀ NỘI
VIỆN CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG

Chapter 2. PHP Variables and HTML Input Forms

Content

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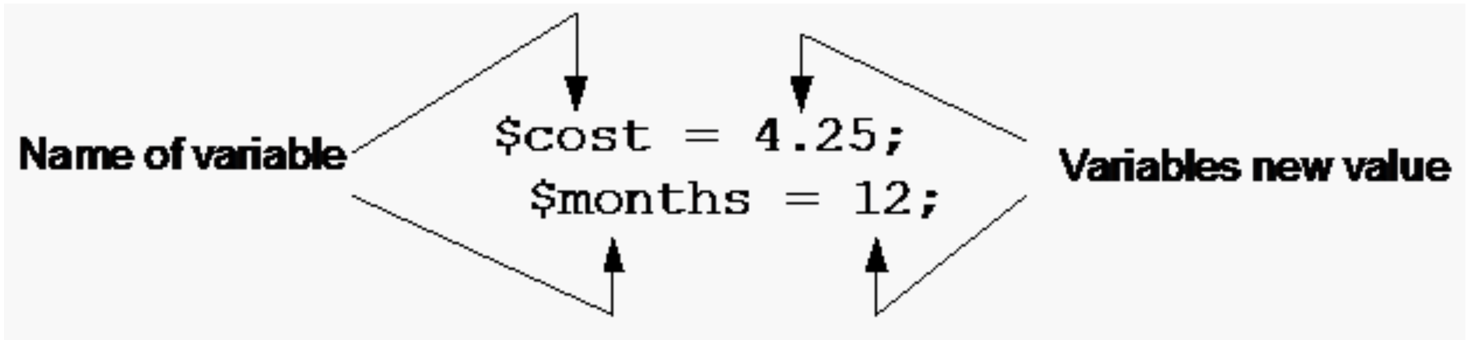
1. PHP Variables
2. Working with PHP String Variables
3. HTML Input Forms
4. HTML Input Forms and PHP Scripts

1. PHP Variables

- Variables are used to store and access data in computer memory.
- A variable name is a label used within a script to refer to the data.



1.1. Assigning New Values to Variables

- You can assign new values to variables:

```
$days = 3;
$newdays = 100;
$days = $newdays;
```

- At the end of these three lines, **`$days`** and **`$newdays`** both have values of 100.

Selecting Variable Names

- You can select just about any set of characters for a variable name in PHP, but they must:
  - Use a dollar sign ($) as the first character
  - Use a letter or an underscore character (_) as the second character.
- Note:Try to select variable names that help describe their function. For example $counter is more descriptive than $c or $ctr.

Combining Variables and the `print` Statement

- That is, to print out the value of $x, write the following PHP statement:
  - `print ("$x");`
- The following code will output “Bryant is 6 years old”.

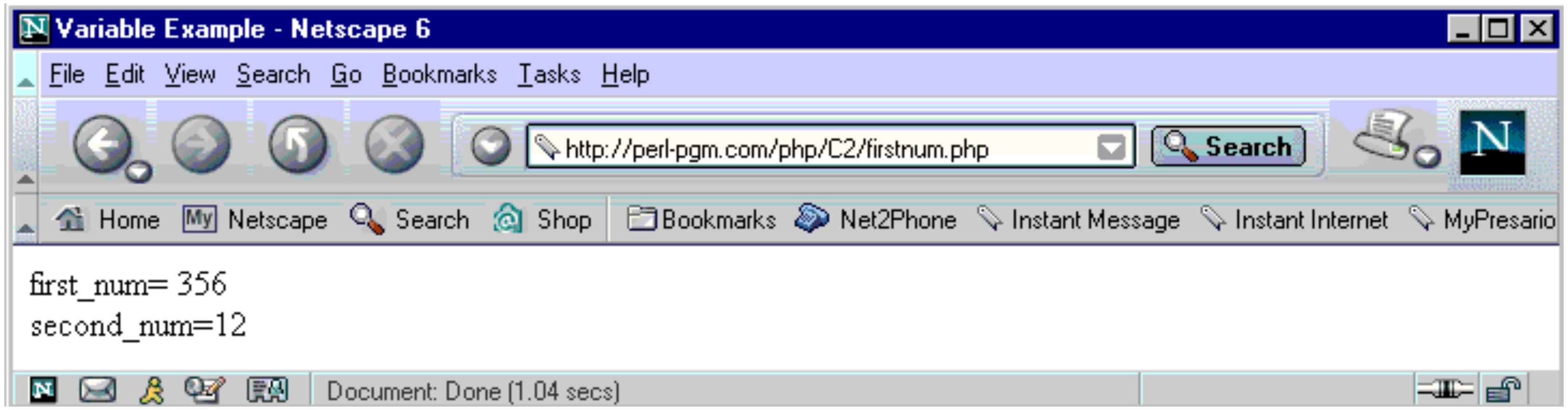
```
$age=6;
print ("Bryant is $age years old.");
```

A Full Example ...

```
<html>
    <head> <title>Variable Example </title>
 </head>
            <body>
        <?php
            $first_num = 12;
            $second_num = 356;
            $temp = $first_num;
            $first_num = $second_num;
            $second_num = $temp;
            print ("first_num= $first_num <br>
                  second_num=$second_num");
        ?> </body> </html>
```

A Full Example ...

The previous code can be executed at
http://webwizard.aw.com/~phppgm/C2/firstnum.php


Variable Example - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/firstnum.php
Search
Home
Netscape
Search
Shop
Bookmarks
Net2Phone
Instant Message
Instant Internet
MyPresario
Document: Done (1.04 secs)

```
first_num= 356
second_num=12
```

1.2. Using Arithmetic Operators

- You can use operators such as a plus sign (+) for addition and a minus sign (–) for subtraction to build mathematical expressions.
- For example

```
<?php
$apples = 12;
$oranges = 14;
$total_fruit = $apples + $oranges;
print ("The total number of fruit is
  $total_fruit");
?>
```

- These PHP statements would output “The total number of fruit is 26.”

Common PHP Numeric Operators

Operator	Effect	Example	Result
+	Addition	`$x = 2 + 2;`	`$x` is assigned 4.

–	Subtraction	`$y = 3;`
		`$y = $y – 1;`
			`$y` is assigned 2.

/	Division	`$y = 14 / 2;`	`$y` is assigned 7.

*	Multiplication	`$z = 4;`
		`$y = $z * 4;`
			`$y` is assigned 16.

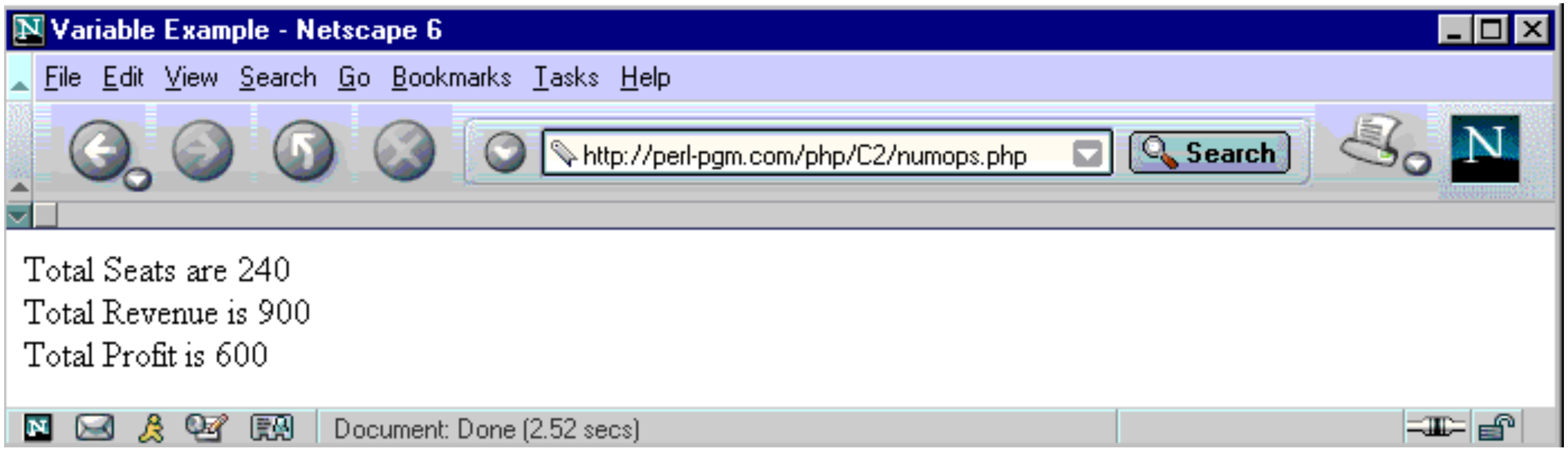
%	Remainder	`$y = 14 % 3;`	`$y` is assigned 2.

A Full Example

```
<html>
<head> <title>Variable Example </title> </head>
<body>
<?php
$columns = 20;
$rows = 12;
$total_seats = $rows * $columns;

$ticket_cost = 3.75;
$total_revenue = $total_seats * $ticket_cost;

$building_cost = 300;
$profit = $total_revenue - $building_cost;

print ("Total Seats are $total_seats <br>");
print ("Total Revenue is $total_revenue <br>");
print ("Total Profit is $profit");
?> </body> </html>
```

A Full Example …

The previous code can be executed at
http://webwizard.aw.com/~phppgm/C2/numops.php


Variable Example - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/numops.php
Search
Document: Done (2.52 secs)

```
Total Seats are 240
Total Revenue is 900
Total Profit is 600
```

WARNING: Using Variables with Undefined Values

- A variable that does not have a value assigned to it will have no value (called a null value).
- When a variable with a null value is used in an expression PHP, PHP may not generate
- an error and may complete the expression evaluation.

```
<?php
$y = 3;
$y=$y + $x + 1; // $x has a null value
print ("x=$x y=$y");
?>
```

Output x= y=4

1.3. Writing Complex Expressions

- *Operator precedence rules* define the order in which the operators are evaluated. For example,

```
$x = 5 + 2 * 6;
```

- The value of $x is either 42 or 17 depending on order of evaluation.
- Since multiplication evaluated before addition operations, this expression evaluates to 17.

PHP Precedence Rules

- PHP follows the precedence rules listed below.
  - First it evaluates operators within parentheses.
  - Next it evaluates multiplication and division operators.
  - Finally it evaluates addition and subtraction operators.

PHP Precedence Rules

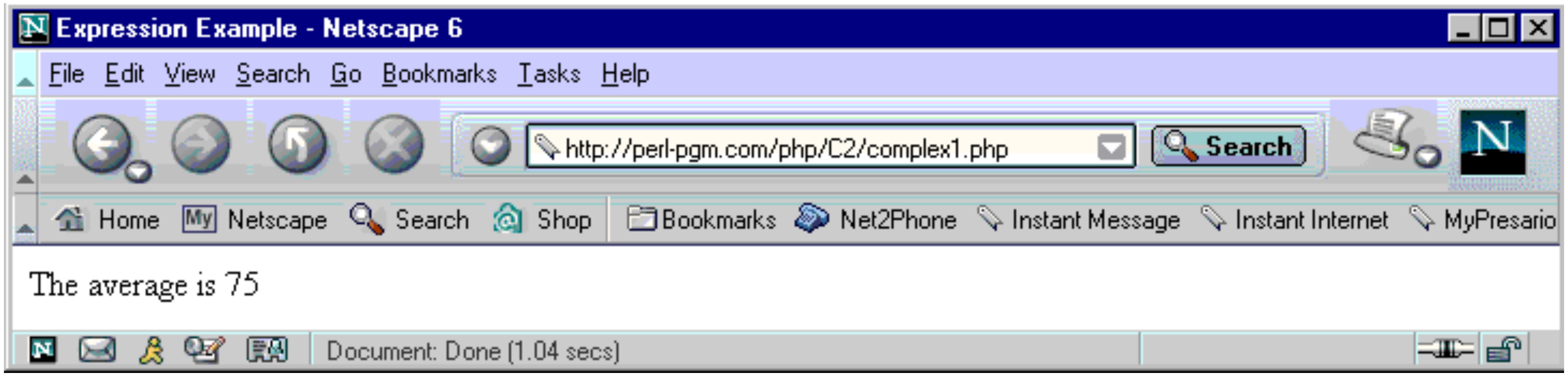
- For example, the first 2 statements evaluate to 80 while the last to 180.
  - `$x = 100 - 10 * 2;`
  - `$y = 100 - (10 * 2);`
  - `$z = (100 - 10) * 2;`

A Full Example

```
<html>
<head> <title>Expression Example </title> </head>
<body>
<?php
$grade1 = 50;
$grade2 = 100;
$grade3 = 75;
$average = ($grade1 + $grade2 + $grade3) / 3;
print ("The average is $average");
?> </body> </html>
```

A Full Example ...

`The previous code can be executed at`
http://webwizard.aw.com/~phppgm/C2/complex1.php


Expression Example - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/complex1.php
Search
Home
Netscape
Search
Shop
Bookmarks
Net2Phone
Instant Message
Instant Internet
MyPresario
Document: Done (1.04 secs)

```
The average is 75
```

Content

2. Working with PHP String Variables

- Character strings are used in scripts to hold data such as customer names, addresses, product names, and descriptions.
- Consider the following example.
  - `$name="Christopher";`
  - `$preference="Milk Shake";`
- `$name` is assigned “Christopher” and the variable `$preference` is assigned “Milk Shake”.

WARNING: Be Careful Not to Mix Variable Types

- Be careful not to mix string and numeric variable types.
- For example, you might expect the following statements to generate an error message, but they will not. Instead, they will output “`y=1`”.

```
<?php
    $x ="banana";
    $sum = 1 + $x;
    print ("y=$sum");
?>
```

Using the Concatenate Operator

- The concatenate operator combines two separate string variables into one.
- For example,
  - **`$fullname = $firstname . $lastname;`**
- **`$fullname`** will receive the string values of **`$firstname`** and **`$lastname`** connected together.
- For example,

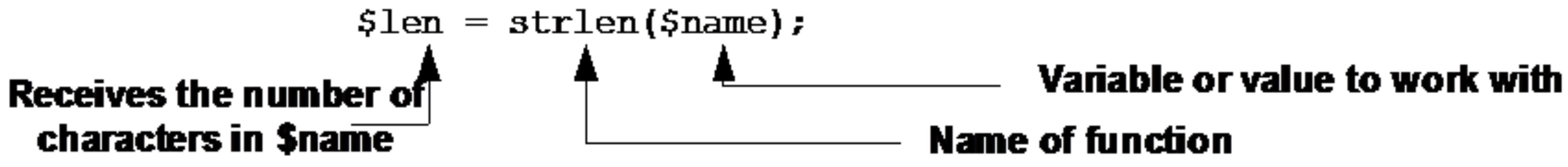
```
$firstname = "John";
$lastname = "Smith";
$fullname = $firstname . $lastname;
print ("Fullname=$fullname");
```

TIP: An Easier Way to Concatenate Strings

- You can also use double quotation marks to create
- concatenation directly,
- For example,
  - `$Fullname2 = "$FirstName $LastName";`
  - **This statement has the same effect as**
  - `$Fullname2 = $FirstName . " " . $LastName;`

The strlen() Function

- Most string functions require you to send them one or more arguments.
- Arguments are input values that functions use in the processing they do.
- Often functions return a value to the script based on the input arguments. For example



```
$len = strlen($name);
```

Receives the number of characters in $name
Variable or value to work with
Name of function

The strlen() Function Example

```
<?php
        $comments = "Good Job";
        $len = strlen($comments);
        print ("Length=$len");
  ?>
```

This PHP script would output “Length=8”.

The trim() Function

- This function removes any blank characters from the beginning and end of a string. For example, consider the following script:

```
<?php
    $in_name = " Joe Jackson ";
    $name = trim($in_name);
    print ("name=$name$name");
?>
```

The strtolower() and strtoupper() Functions

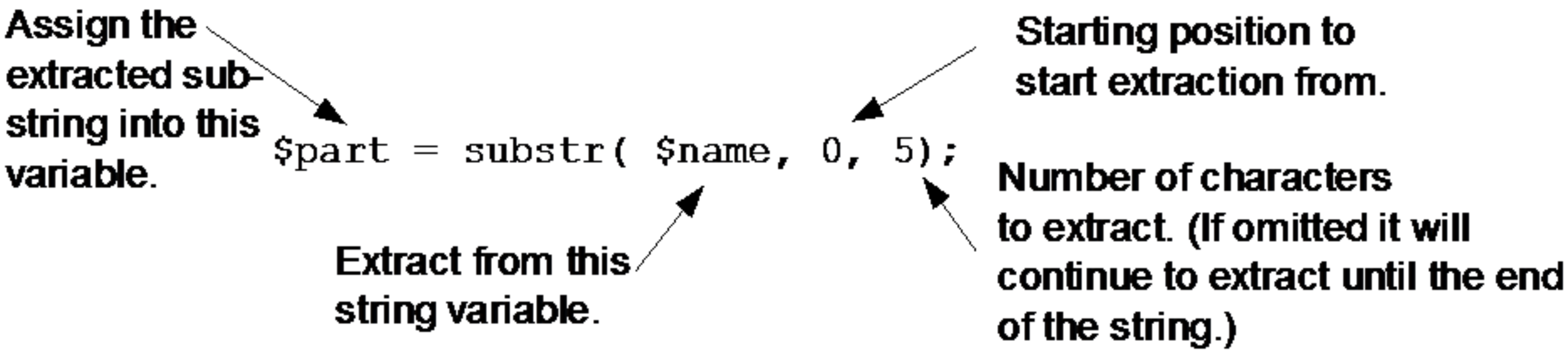
- These functions return the input string in all uppercase or all lowercase letters, respectively.
- For example,

```
<?php
    $inquote = "Now Is The Time";
    $lower = strtolower($inquote);
    $upper = strtoupper($inquote);
    print ("upper=$upper lower=$lower");
?>
```

- The above would output “upper=NOW IS THE TIME lower=now is the time”.

The substr() Function

- Substr has the following general format:



```
$part = substr( $name, 0, 5);
```

Assign the extracted sub-string into this variable.
Starting position to start extraction from.
Extract from this string variable.
Number of characters to extract. (If omitted it will continue to extract until the end of the string.)

The substr() Function

- The substr() function enumerates character positions starting with 0(not 1)
  - For example, in the string “Homer”, the “H” would be position 0, the “o” would be position 1, the “m” position 2, and so on
- For example, the following would output “Month=12 Day=25”.

```
<?php
    $date = "12/25/2002";
    $month = substr($date, 0, 2);
    $day = substr($date, 3, 2);
    print ("Month=$month Day=$day");
?>
```

The substr() Function

- As another example, consider the following use of the substr() function
  - It does not include the third argument (and thus returns a substring from the starting position to the end of the search string)

```
<?php
   $date = "12/25/2002";
   $year = substr($date, 6);
   print ("Year=$year");
?>
```

- → Output "Year=2002"

Content

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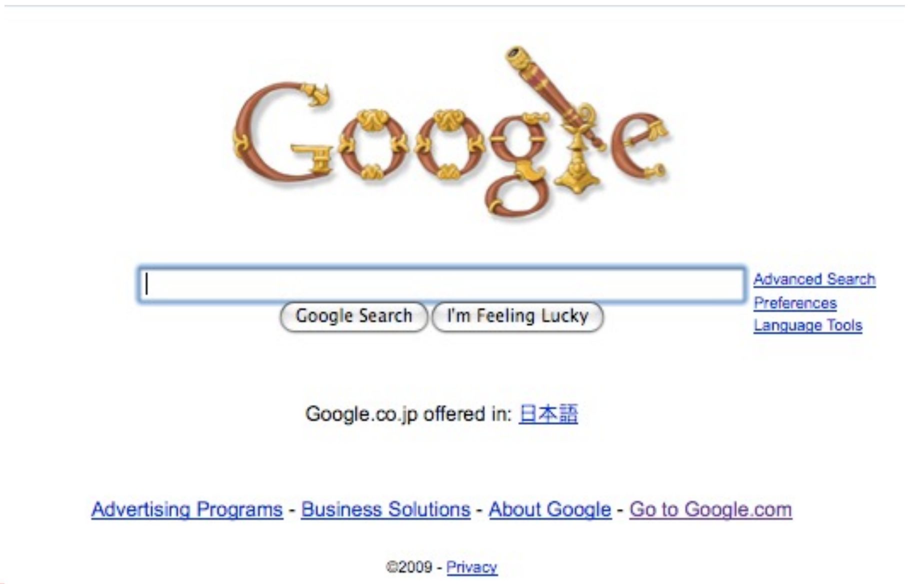
HTML Form

- Controls for User Interaction in HTML
  - To enter information and submit to a server



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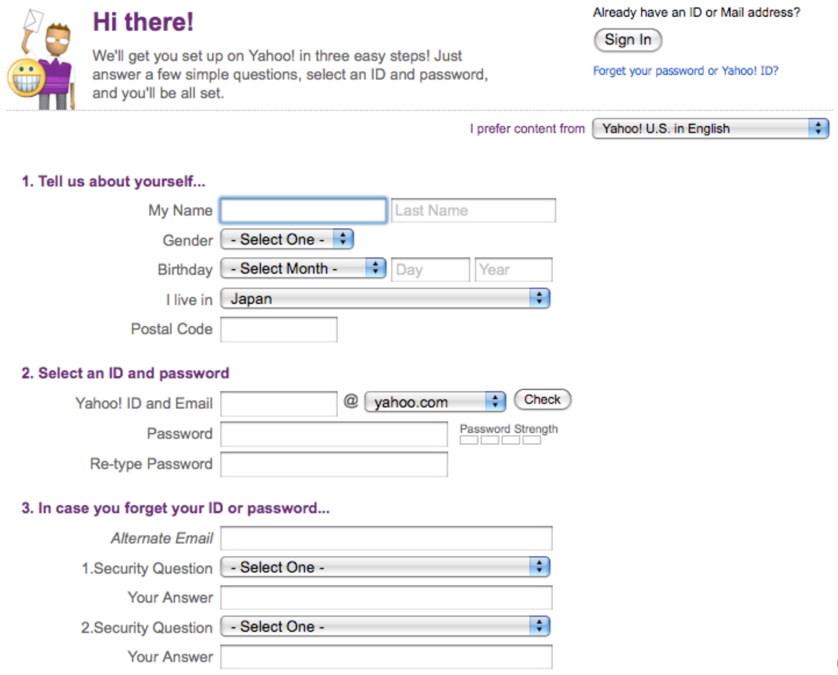
©2009 - Privacy



Hi there!

We'll get you set up on Yahoo! in three easy steps! Just answer a few simple questions, select an ID and password, and you'll be all set.

Already have an ID or Mail address?

Forget your password or Yahoo! ID?

I prefer content from: Yahoo! U.S. in English

1. Tell us about yourself...

My Name	Last Name
Gender	- Select One -
Birthday	- Select Month - / Day / Year
I live in	Japan
Postal Code	

2. Select an ID and password

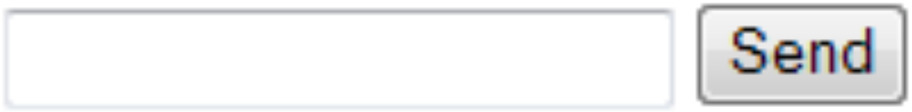
Yahoo! ID and Email	@ yahoo.com [Check]
Password	Password Strength
Re-type Password	

3. In case you forget your ID or password...

Alternate Email	
1.Security Question	- Select One -
Your Answer	
2.Security Question	- Select One -
Your Answer	

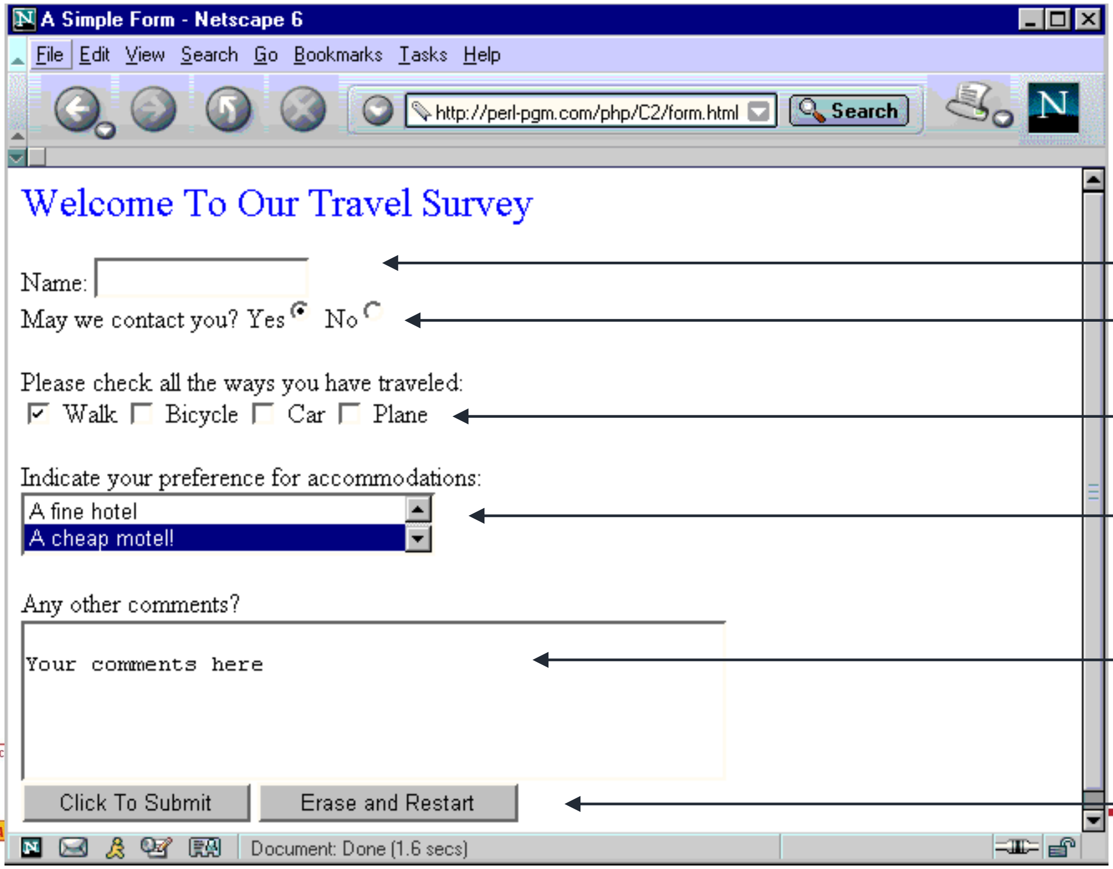
HTML Form Example

```
<form action="/test.php"
 method="POST">
<p><input type="text"
 name="username">
<input type="submit" value="Send"
 ></p>
</form>
```



3. HTML Input Forms

- HTML Forms and not part of PHP language but important way to send data to scripts


A Simple Form - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/form.html
Search
Document: Done (1.6 secs)

Welcome To Our Travel Survey

Name:

May we contact you? Yes [✓] No

Please check all the ways you have traveled:

[✓] Walk [ ] Bicycle [ ] Car [ ] Plane

Indicate your preference for accommodations:

A fine hotel

A cheap motel!

Any other comments?

Your comments here

Click To Submit | Erase and Restart

Text Box

Radio Buttons

Check Box

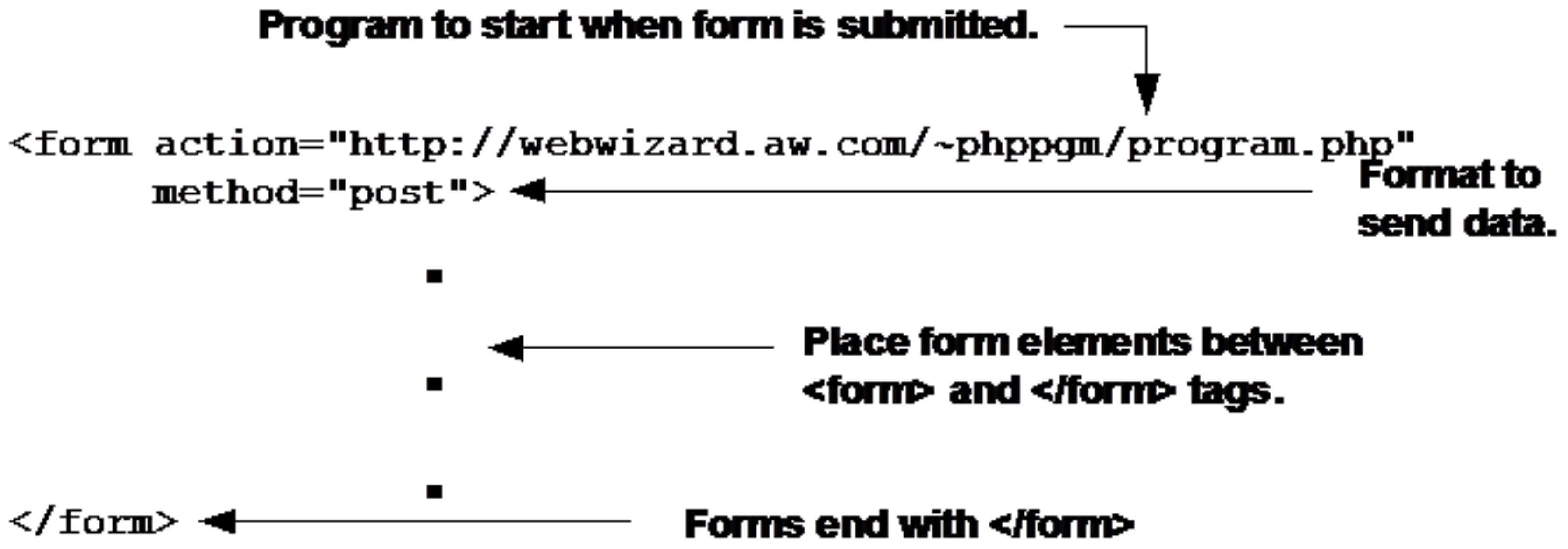
Select Box

Text Area

Submit/Reset button

3.1. Starting And Ending HTML Forms

- You can create HTML forms by using the HTML `<form>` and `</form>` tags


Program to start when form is submitted.
Format to send data.
Place form elements between <form> and </form> tags.
Forms end with </form>

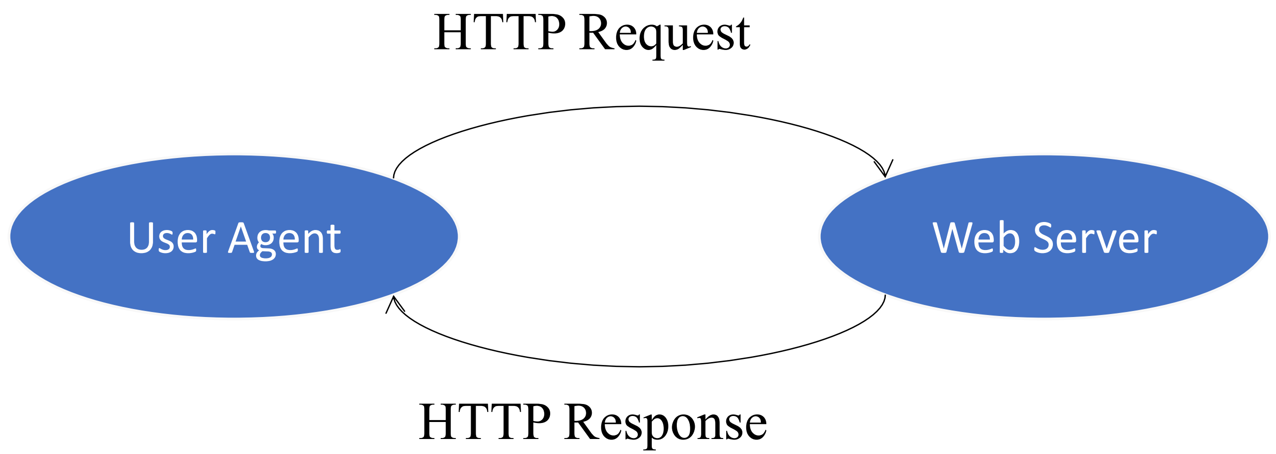
```
<form action="http://webwizard.aw.com/~phppgm/program.php"
      method="post">
                  .
                  .
                  .
</form>
```

HTML Form

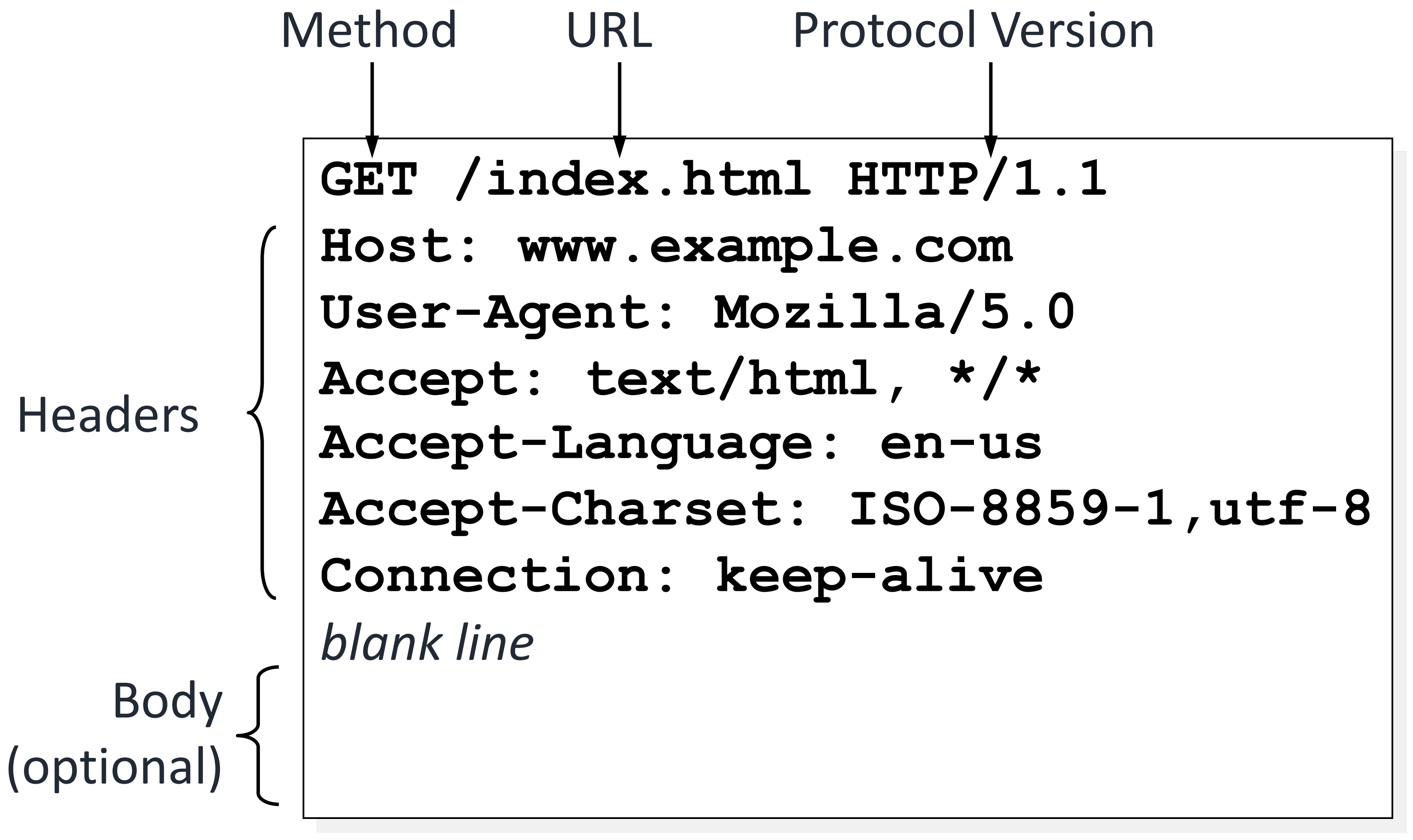
- action attribute
  - URI Reference where you want to send data
- method attribute
  - Data transfer method
    - GET
      - Send data in the query part of the URI
    - POST
      - Send data in the body of the submission

Review: Client Server Model (Web)

- Client: User Agent
- Server: Web server

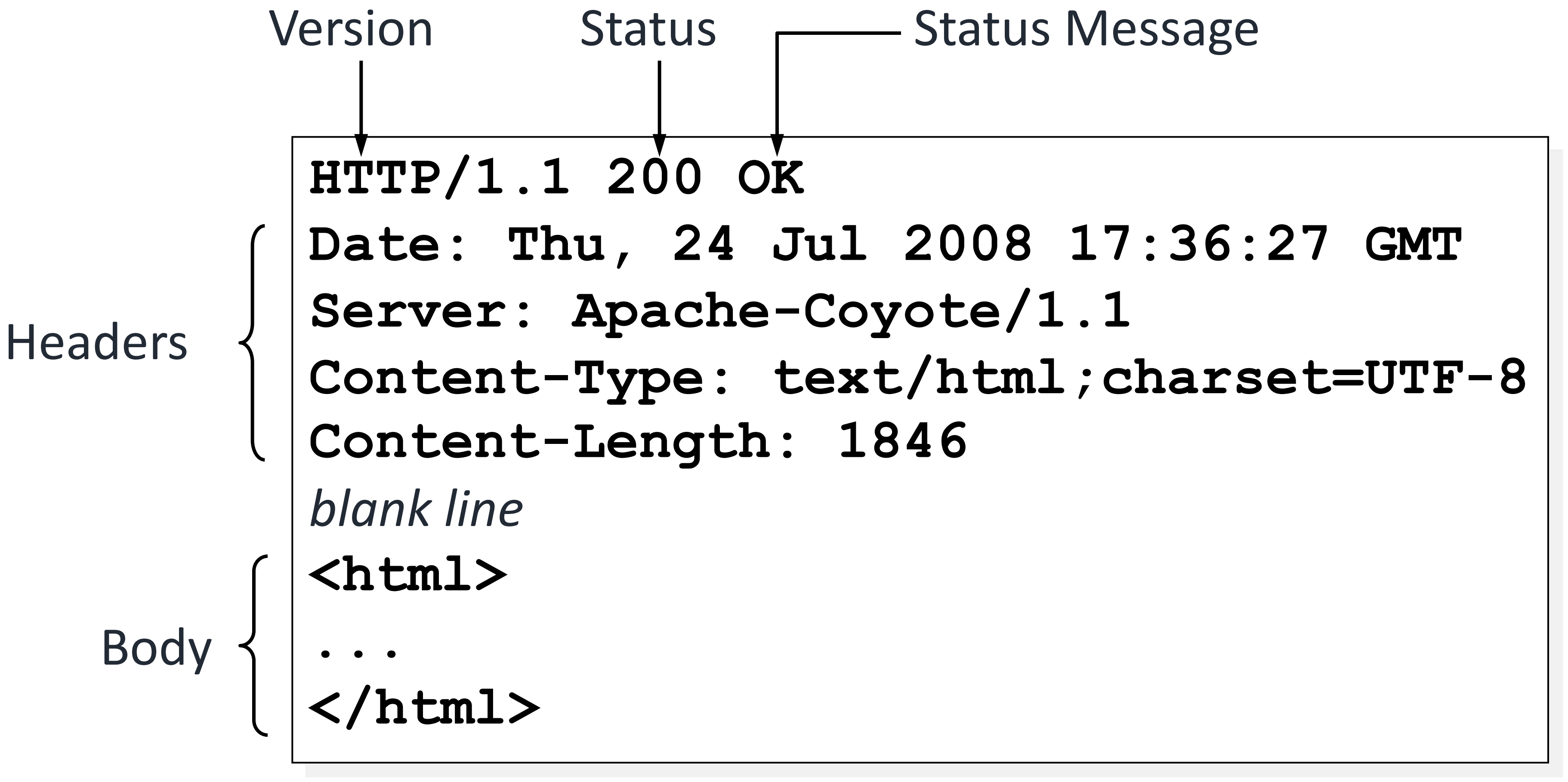


HTTP Request



```
GET /index.html HTTP/1.1
Host: www.example.com
User-Agent: Mozilla/5.0
Accept: text/html, */*
Accept-Language: en-us
Accept-Charset: ISO-8859-1,utf-8
Connection: keep-alive
```
blank line

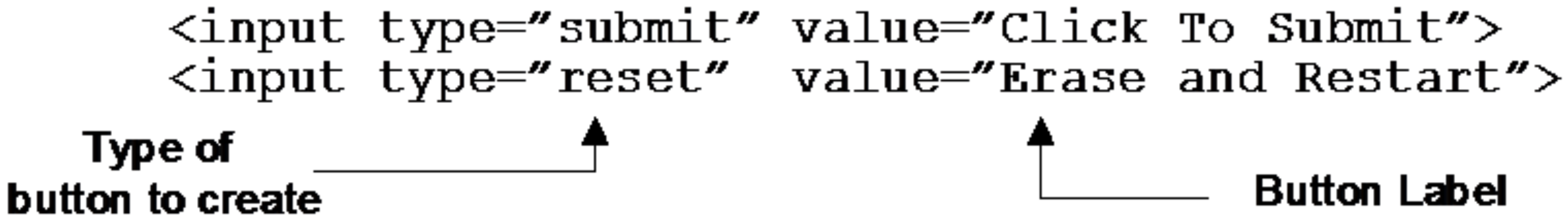
HTTP Response



```
HTTP/1.1 200 OK
Date: Thu, 24 Jul 2008 17:36:27 GMT
Server: Apache-Coyote/1.1
Content-Type: text/html;charset=UTF-8
Content-Length: 1846
```
blank line
```
<html>
...
</html>
```

3.2. Creating Form Buttons

- You can create submit and reset buttons by placing the following within <form> & </form> tags



```
<input type="submit" value="Click To Submit">
<input type="reset"  value="Erase and Restart">
```

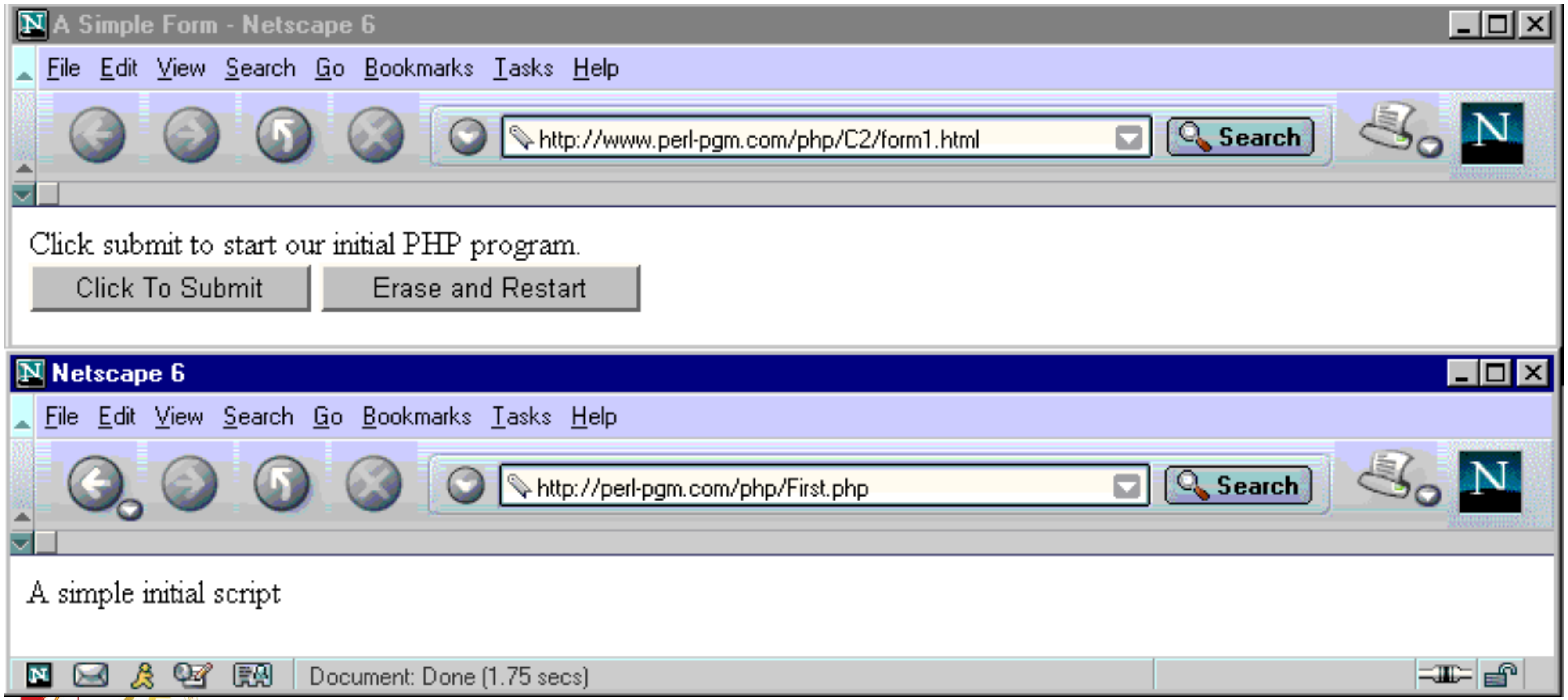
- The submit button will be labeled “Click To Submit”. The reset button will be labeled “Erase and Restart”.

Another Full Script Example

```
<html>
<head> <title> A Simple Form </title> </head>
<body>
<form action="http://webwizard.aw.com/~phppgm/First.php"
 method="post" >
 Click submit to start our initial PHP program.
 <br> <input type="submit" value="Click To Submit">
 <input type="reset" value="Erase and Restart">
 </form>
 </body> </html>
```

A Full Example ...

The previous code can be executed at
http://webwizard.aw.com/~phppgm/C2/form1.html


A Simple Form - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://www.perl-pgm.com/php/C2/form1.html
Search
Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/First.php
Search
Document: Done (1.75 secs)

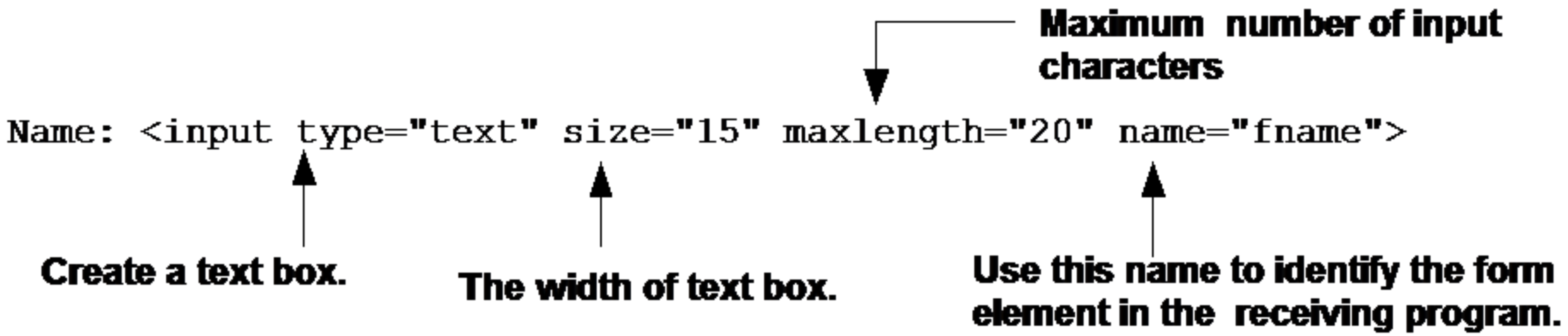
Click submit to start our initial PHP program.

Click To Submit | Erase and Restart

A simple initial script

3.3. Creating Text Input Boxes

- Text input boxes create a form element for receiving a single line of text input.



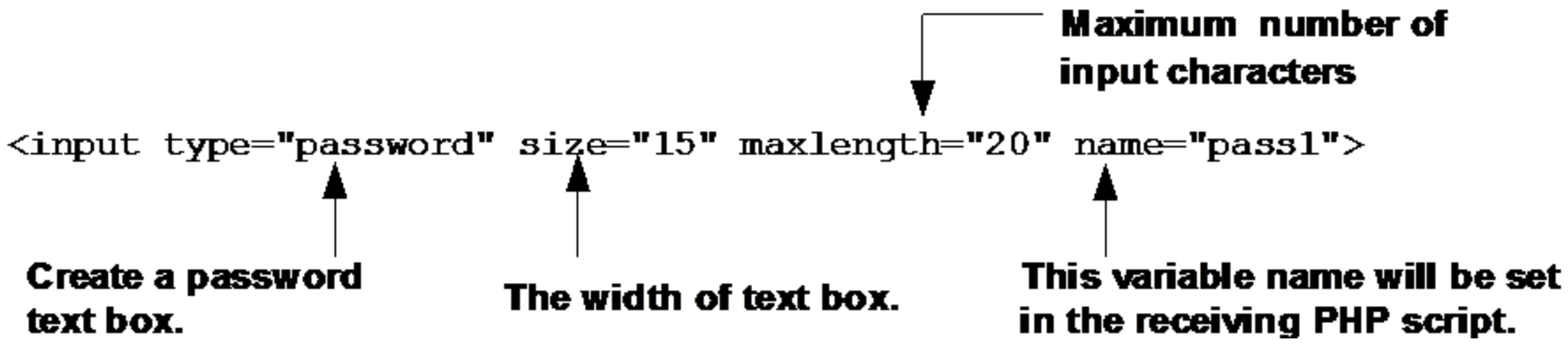
```
Name: <input type="text" size="15" maxlength="20" name="fname">
```

Maximum number of input characters
Create a text box.
The width of text box.
Use this name to identify the form element in the receiving program.

- Will be 15 characters wide accepting a maximum of 20 characters. Will set a variable named **`fname`** with value of whatever the end-user enter.

3.4. Creating Password Boxes

- Password boxes similar to text boxes except asterisks are displayed (instead of text input).



```
<input type="password" size="15" maxlength="20" name="pass1">
```

Maximum number of input characters
Create a password text box.
The width of text box.
This variable name will be set in the receiving PHP script.

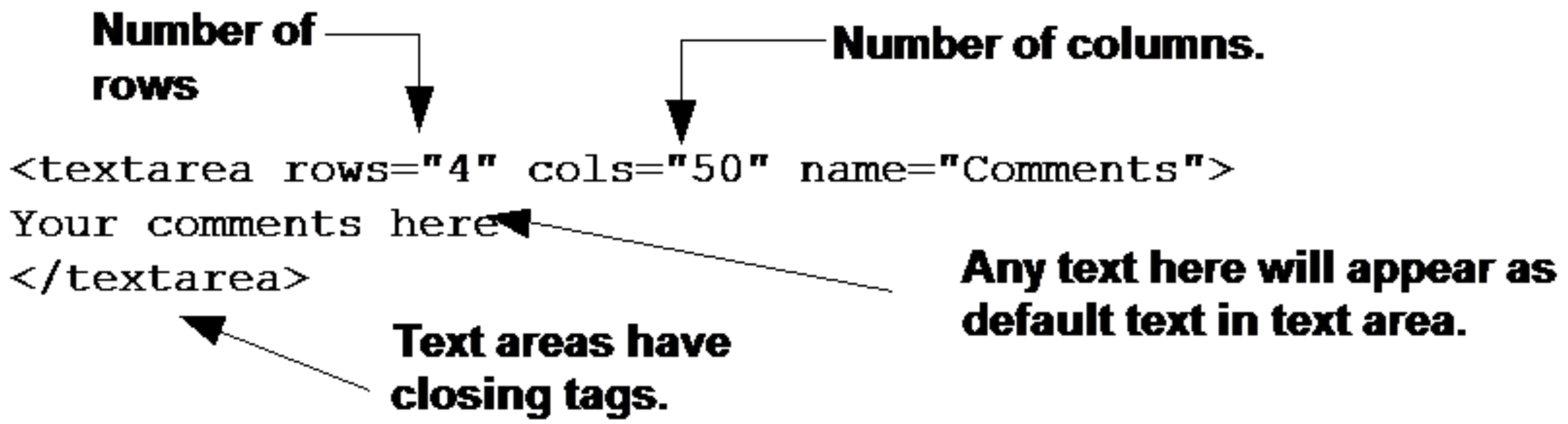
- Will be 15 characters wide accepting a maximum of 20 characters. Will set a variable named `pass1` with value of whatever the end-user enter.

Warning: Password Boxes Not Secure

- When the user submits the form, any data input is sent in clear text (nonencrypted) just like any other HTML form field.
- Someone with network access could, therefore, read the password being transferred.
- For this reason, most Web applications do not use this approach to receive and transmit passwords.

3.5. Creating Text Areas

- The following creates a text area containing 4 rows and 50 columns.



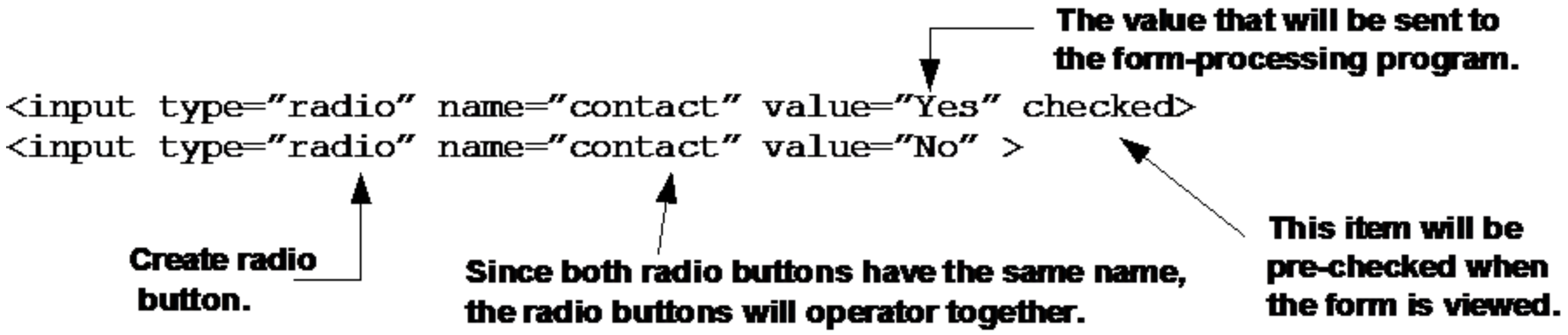
```
<textarea rows="4" cols="50" name="Comments">
Your comments here
</textarea>
```

Number of rows
Number of columns.
Any text here will appear as default text in text area.
Text areas have closing tags.

- The words "Your comments here" are the default text.The variable name `Comments` will be available to the form-handling script.

3.6. Creating Radio Buttons

- Radio buttons are small circles that can select by clicking them with a mouse. Only one within a group can be selected at once.



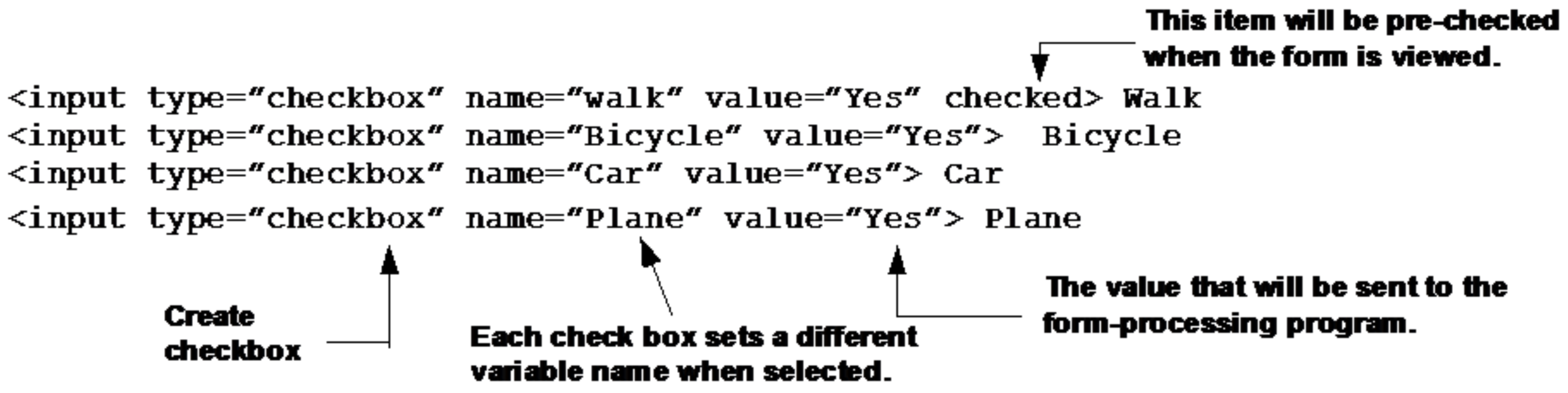
```
<input type="radio" name="contact" value="Yes" checked>
<input type="radio" name="contact" value="No" >
```

The value that will be sent to the form-processing program.
Create radio button.
Since both radio buttons have the same name, the radio buttons will operator together.
This item will be pre-checked when the form is viewed.

- The `name` argument must be the same for all radio buttons operating together. The `value` argument sets the variable value that will be available to the form-processing script.

3.7. Creating Check Boxes

- Check boxes are small boxes on a form that create a check mark when the user clicks them.



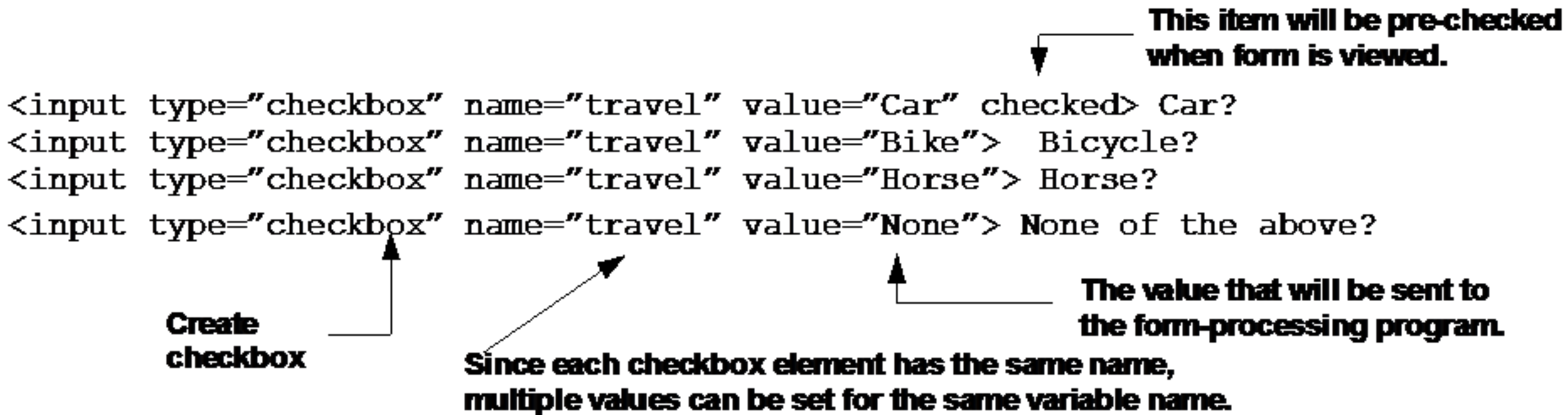
```
<input type="checkbox" name="walk" value="Yes" checked> Walk
<input type="checkbox" name="Bicycle" value="Yes">  Bicycle
<input type="checkbox" name="Car" value="Yes"> Car
<input type="checkbox" name="Plane" value="Yes"> Plane
```

This item will be pre-checked when the form is viewed.
Create checkbox
Each check box sets a different variable name when selected.
The value that will be sent to the form-processing program.

- The above create four independent check boxes; that is, all four check box elements can be selected and each will set a value for a different variable name.

3.7. Creating Check Boxes (2)

- Might want to create a set of check boxes that use the same `name` argument.



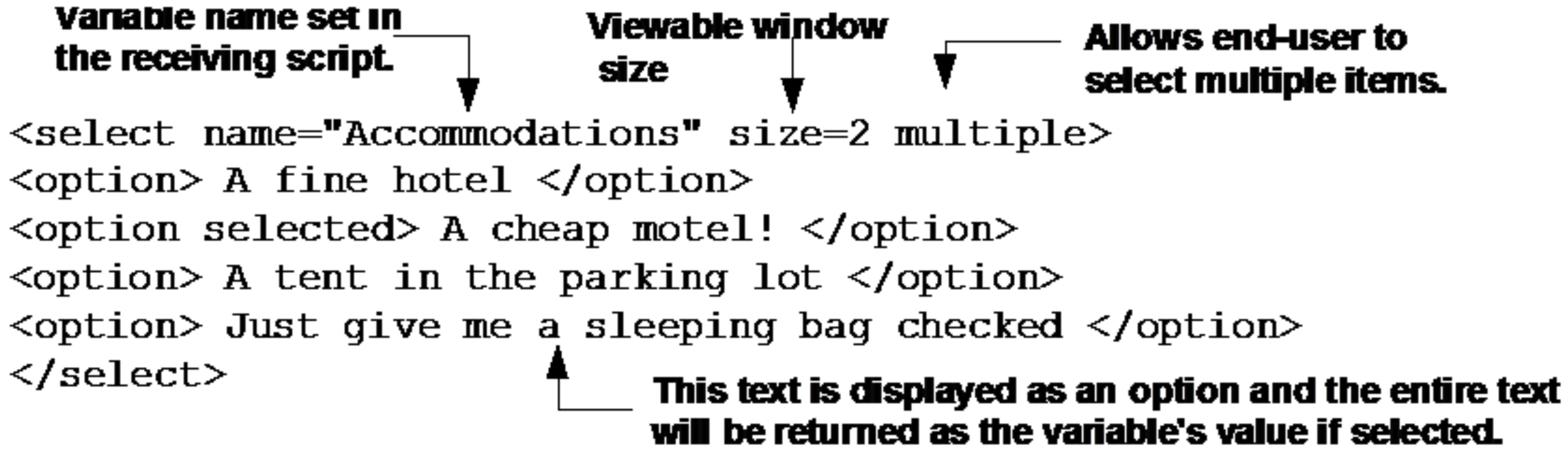
```
<input type="checkbox" name="travel" value="Car" checked> Car?
<input type="checkbox" name="travel" value="Bike">  Bicycle?
<input type="checkbox" name="travel" value="Horse"> Horse?
<input type="checkbox" name="travel" value="None"> None of the above?
```

This item will be pre-checked when form is viewed.
Create checkbox
Since each checkbox element has the same name, multiple values can be set for the same variable name.
The value that will be sent to the form-processing program.

- The value received by the form-processing script would be a comma-separated list of all items checked.

3.8. Creating Selection Lists

- Creates a box with a scrolling list of one or more items that user can highlight and select.



Variable name set in the receiving script.

Viewable window size

Allows end-user to select multiple items.

```
<select name="Accommodations" size=2 multiple>
<option> A fine hotel </option>
<option selected> A cheap motel! </option>
<option> A tent in the parking lot </option>
<option> Just give me a sleeping bag checked </option>
</select>
```

This text is displayed as an option and the entire text will be returned as the variable's value if selected.

This HTML code creates four options formatted in a scrolling list. Only two of these options are displayed at the same time, and the user can select more than one option. Multiple selections are sent to the form-processing script as a comma-separated list.

Content

Receiving Form Input into PHP Scripts

- To receive HTML form input into a PHP script:
  - Use a PHP var name that matches the variable defined in the form element's **`name`** argument.
- E.g., if form uses the following:
  - **`<input type="radio" name="contact" value="Yes">`**
- Then form-handling PHP script could use a variable called `$contact.`
  - If the user clicks the radio button, then **`$contact`** would = **`Yes`**

Full Example

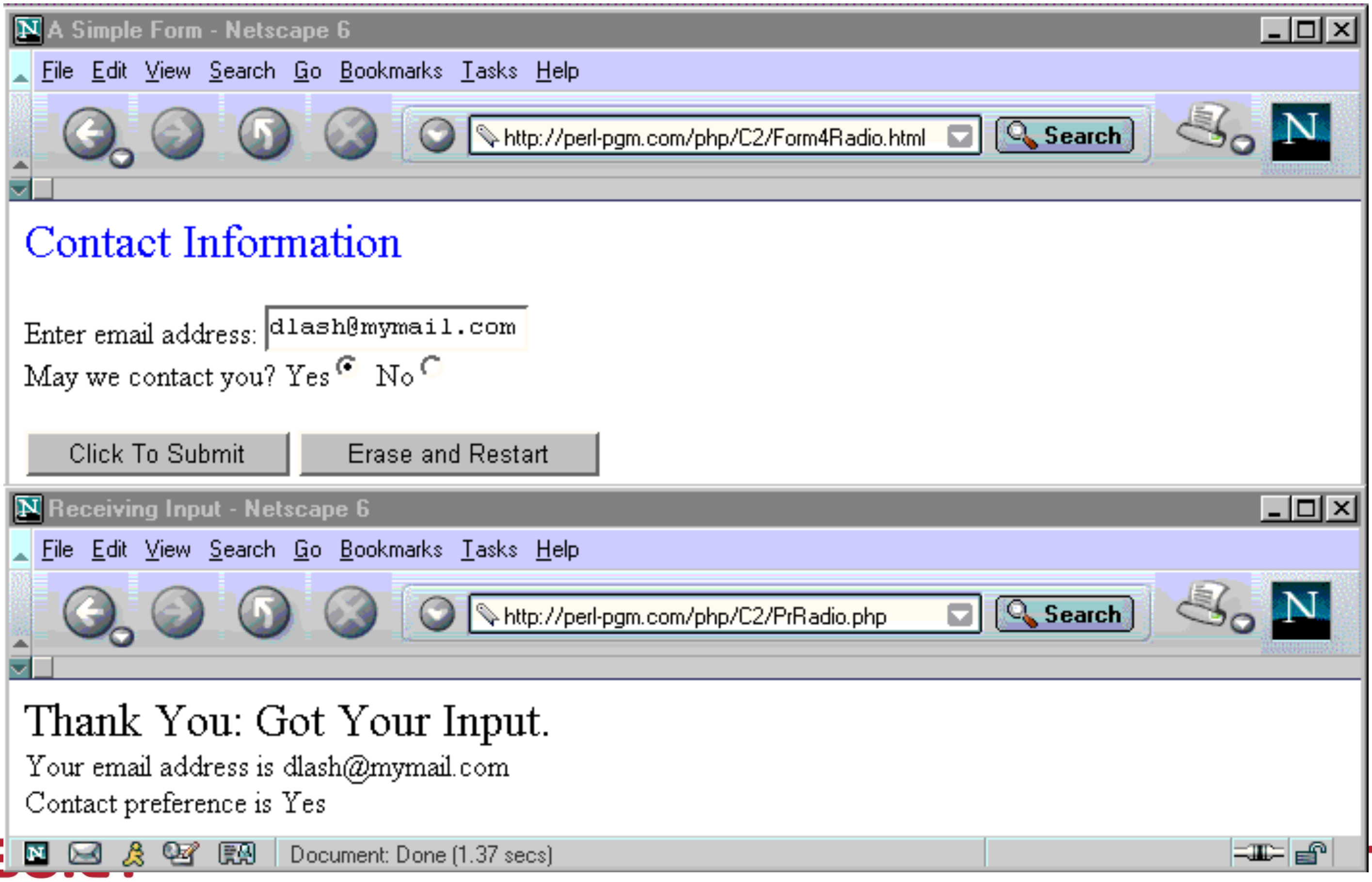
- Suppose your HTML form uses the following
  - Enter email address: <input type="text" size="16" maxlength="20" name="email">
- Then can receive input as follows

```
<html>
  <head><title> Receiving Input </title> </head>
 <body>
     <font size=5>Thank You: Got Your Input.</font>
     <?php
      print ("<br>Your email address is $email");

     print ("<br> Contact preference is $contact");
   ?>
```

A Full Example ...

The previous code can be executed at
http://webwizard.aw.com/~phppgm/C2/Form4Radio.html


A Simple Form - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/Form4Radio.html
Search

Contact Information

Enter email address: dlash@mymail.com

May we contact you? Yes [✓] No

Click To Submit
Erase and Restart
Receiving Input - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/PrRadio.php
Search

Thank You: Got Your Input.

Your email address is dlash@mymail.com

Contact preference is Yes

Document: Done (1.37 secs)

Register_Globals?

- Since PHP 4.2.1, the default PHP configuration is require a different mechanism to receive input for security reasons (than the one just shown).
    - Technical details: it is a PHP configuration option to turn REGISTER_GLOBALS OFF (new default) or ON in the php.ini configuration file.
- If your site has REGISTER_GLOBALS OFF you must use a different mechanism to receive HTML Form Variables.

How can you tell if Register_Globals is OFF?

- Enter the following PHP script and run it.
  - <?PHP phpinfo(); ?>
- Search through the output for REGISTER_GLOBALS and see if it is set to OFF or ON.
- If it is off you must use the following way to receive input data.

Getting input data with Register_Globals OFF?

- To receive data with REGISTER_GOBALS OFF you use a special variable called $_POST.

```
$name $_POST[“name”];
```

Enclose in square bracket and then quotes

Name of HTML form variable (note do not use $)

Special PHP Global variable. Technically it is an *associative array* (covered in chptr 5.)

PHP variable name that you want to receive the HTML form input.

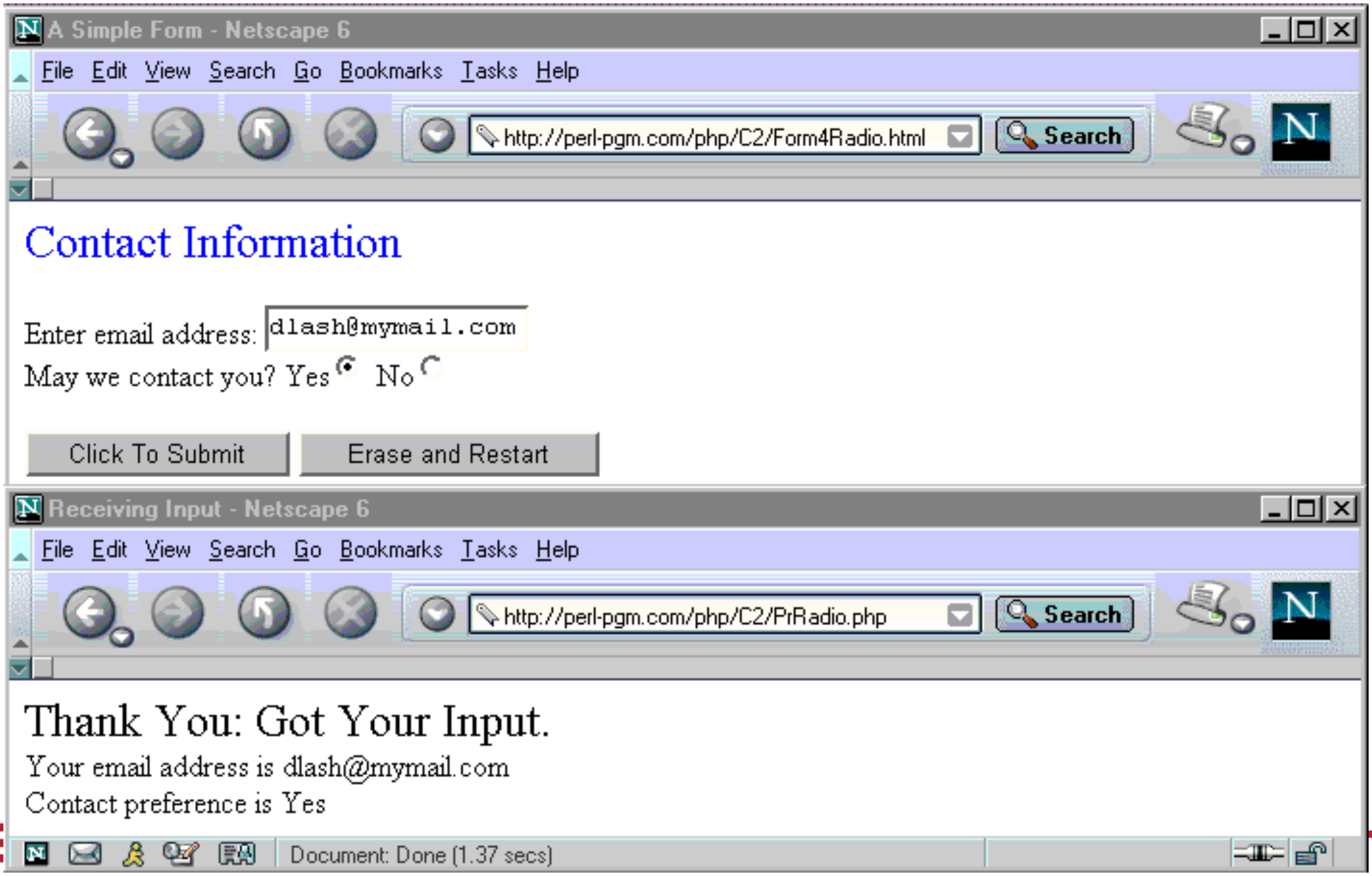
Full Example, when REGISTER_GLOBALS is OFF

- Suppose your HTML form uses the following
  - `Enter email address: <input type="text" size="16" maxlength="20" name="email">`
- Then can receive input as follows

```
<html>
  <head><title> Receiving Input </title> </head>
  <body>
    <font size=5>Thank You: Got Your Input.</font>
    <?php
      $email = $_POST[“email”];
      $contact = $_POST[“contact”];
       print ("<br>Your email address is $email");
      print ("<br> Contact preference is $contact");
    ?>
```

A Full Example ...

The previous code can be executed at
http://webwizard.aw.com/~phppgm/C2/Form4Radio_NG.html


A Simple Form - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/Form4Radio.html
Search

Contact Information

Enter email address: dlash@mymail.com
May we contact you? Yes [✓ ●] No ◯

Click To Submit
Erase and Restart
Receiving Input - Netscape 6
File Edit View Search Go Bookmarks Tasks Help
http://perl-pgm.com/php/C2/PrRadio.php
Search

Thank You: Got Your Input.
Your email address is dlash@mymail.com
Contact preference is Yes

Document: Done (1.37 secs)