form interactions

Objectives:
1. To introduce the concept of passing users' value in the web programming environment.
2. To create form to receive user's input, and target file in order to process the information sent to the server.

Typing the user input in a form is the most common way to interact with the script inside a web server. There is also another way to send data, by embedding the data inside the URL.

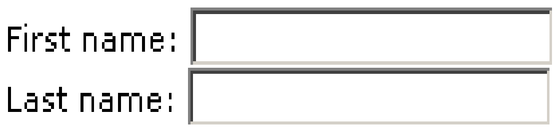
Input Through the HTML Form using GET method.

```
<form name="form_name"  method="send_method" action="target_file">

        inputs….

</form>
```

This is the typical structure of a form. It contains name, method and action as the attributes.
- **name** : is the name of the form.
- **method** : how the data is transferred (using POST or GET), in this case use GET.
- **action** : is the target file resides in the web server that receive the data from this form.
- inputs : are the input elements (eg: text box, button, radio, checkbox, etc)

Text box

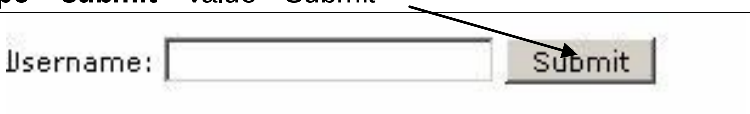
```
<input   type="text"   name="firstname">
```



- This is the tag for most of the input.
- The attribute 'type' defines what type of input element to be displayed to the user in the web page. In this case, the input type is text box.
- The name is a very important attribute where it represents the value entered by the user.
- The main input element used in form is text box, and followed by a submit button to transmit user's information to the server.
- The text box is capable of receiving single-line string, and may contain any character.
- The data is sent to the server and received by the target file, which is defined in the form's action.

Submit button

```
        <input  type="submit"  value="Submit">
```

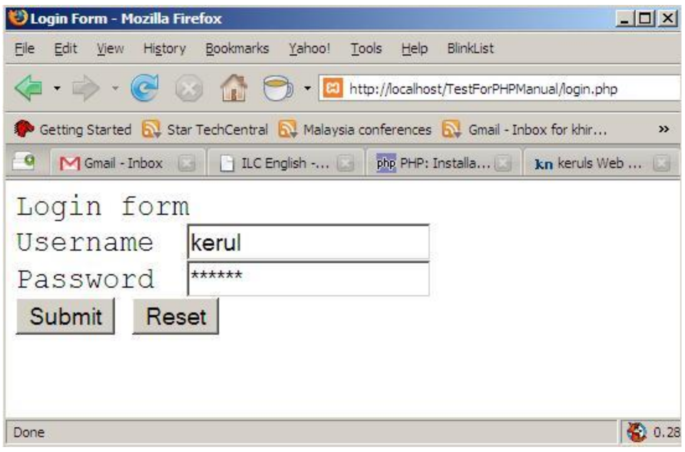


- The submit button is normally used to activate the process of sending/ transmitting the data to the target file (to the server).
- Make sure the 'type' is **submit**. The attribute 'value' will be shown as the caption of the button.

EXAMPLE 1

Step 1.Create a HTML page with a form to receive username and the password of a dummy system. Save the file as *login.php*.

```
<html>
<head><title>Login Form</title></head>
<body>
Login form <br>
<form name="frmLogin"  method= "get"  action="displayInfo.php">
  Username
        <input name="txtUsername"  type="text" size="20"><br>
  Password
        <input name="txtPassword"  type="password"  size="20"><br>
        <input name="btnSubmit"  type="submit"  value="Submit">
        <input name="btnReset"  type="reset"  value="Reset">
</form>
</body>
</html>
```


Login Form - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/login.php
Getting Started
Star TechCentral
Malaysia conferences
Gmail - Inbox for khir...
Gmail - Inbox
ILC English -...
PHP: Installa...
keruls Web ...
Done
0.28

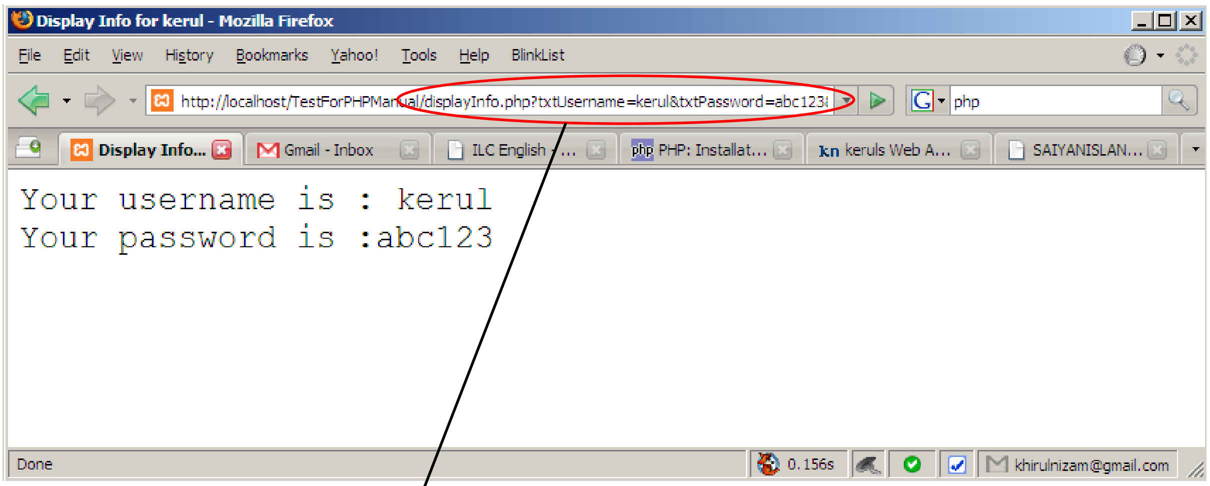
Login form
Username kerul
Password ******
Submit Reset

Step 2.Create a target file to receive username and the password from the form. The information will be extracted and displayed to the user.

This is the target file, named *displayInfo.php*.

```
<html>
<head>
<?php
        $username=$_GET["txtUsername"]; //username is extracted from the querystring
        $pword=$_GET["txtPassword"];  //password is extracted from the querystring
?>
<title>Display Info for <?php echo $username;?> </title>
</head>
<body>
Your username is : <?php echo $username;?> <br>
Your password is :<?php echo $pword;?> <br>
</body>
</html>
```

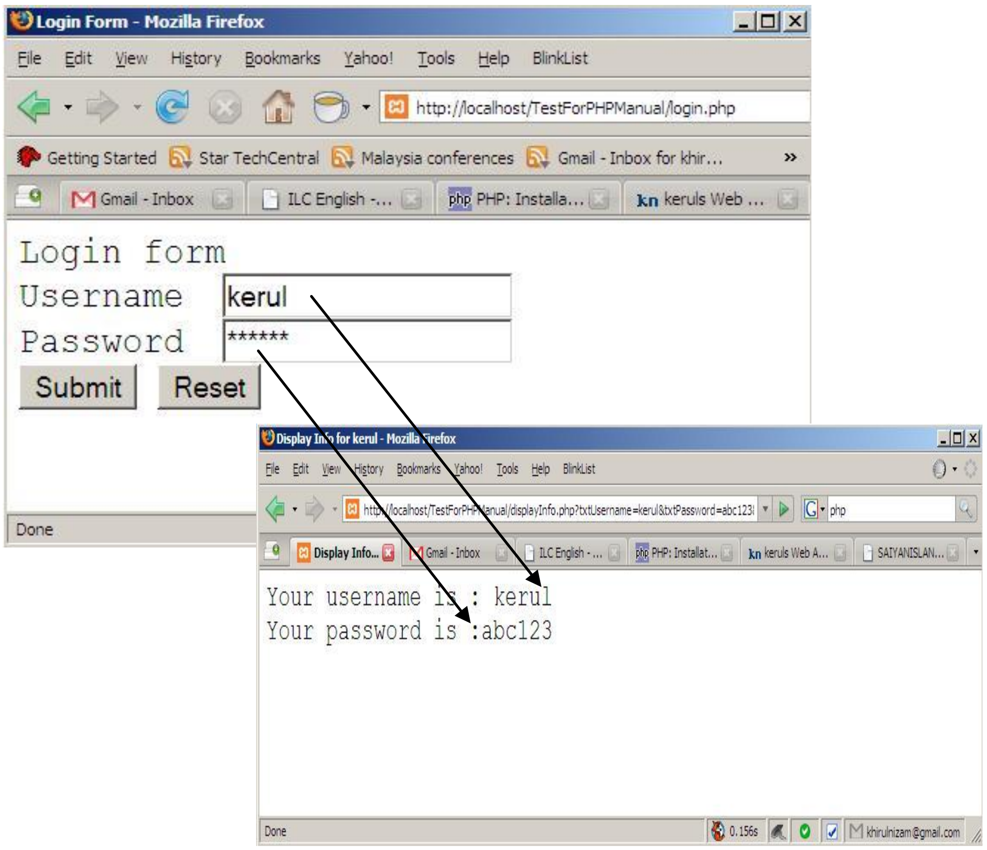
*Observe closely how the username and the password entered by the user is extracted by the $_GET server variable.


Display Info for kerul - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/displayInfo.php?txtUsername=kerul&txtPassword=abc123
php
Display Info... Gmail - Inbox ILC English ... PHP: Installat... keruls Web A... SAIYANISLAN...
Done 0.156s khirulnizam@gmail.com

```
Your username is : kerul
Your password is :abc123
```

The query string enlarged:
http://localhost/TestForPHPManual/displayInfo.php?**txtUsername=kerul**&**txtPassword=abc123**&btnSubmit=Submit

See how the pages exchange the values of the user's input. The values keyed-in by the user in the first page (the page with form – *login.php*). The form transmits the values through the query string and the second page (*displayInfo.php*) extracts the values using $_GET, and display them.

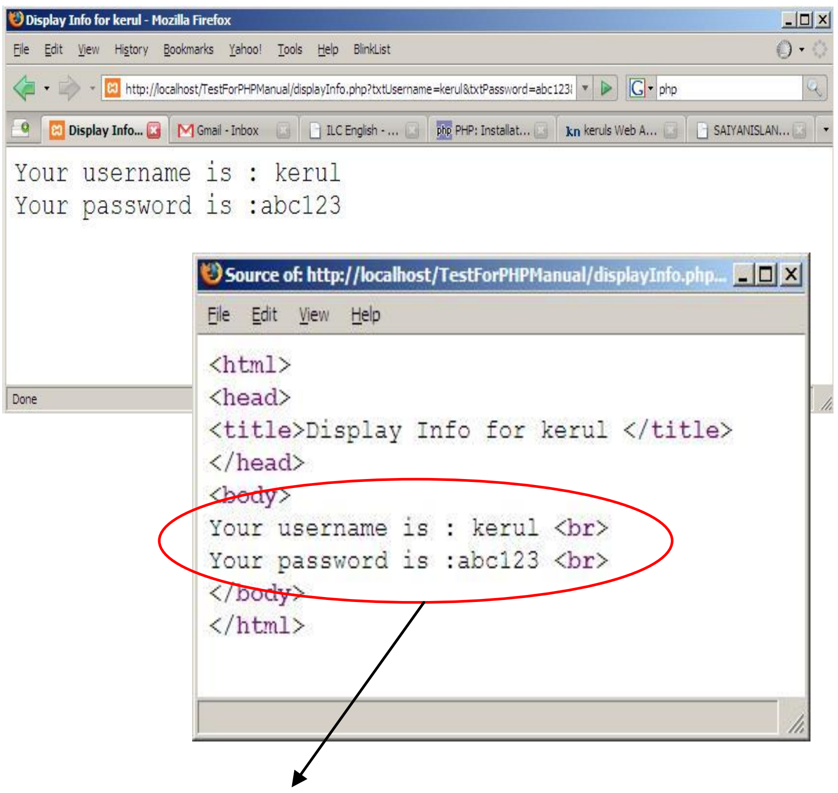

Login Form - Mozilla Firefox
http://localhost/TestForPHPManual/login.php
Display Info for kerul - Mozilla Firefox
http://localhost/TestForPHPManual/displayInfo.php?txtUsername=kerul&txtPassword=abc123

Login form
Username kerul
Password ******
Submit Reset

```
Your username is : kerul
Your password is :abc123
```

Since PHP is a server-side scripting, it's interpreted/executed inside the server. The output of the script execution is embedded inside the page which contains the script. At the end the process, the HTML page, together with the output generated, is sent to the browser (client). The script will not be included in the HTML page sent to the browser.

Try to view the HTML source of the *displayInfo.php* from the browser. You will not see the PHP script. Compare the HTML source with the page with the PHP script in page 2. *Do they have any differences?*


Display Info for kerul - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/displayInfo.php?txtUsername=kerul&txtPassword=abc123
Display Info... Gmail - Inbox ILC English - ... PHP: Installat... keruls Web A... SAIYANISLAN...
Done
Source of: http://localhost/TestForPHPManual/displayInfo.php...
File Edit View Help

```
Your username is : kerul
Your password is :abc123
```

```
<html>
<head>
<title>Display Info for kerul </title>
</head>
<body>
Your username is : kerul <br>
Your password is :abc123 <br>
</body>
</html>
```

See! No PHP script in the HTML page source!
WHY???

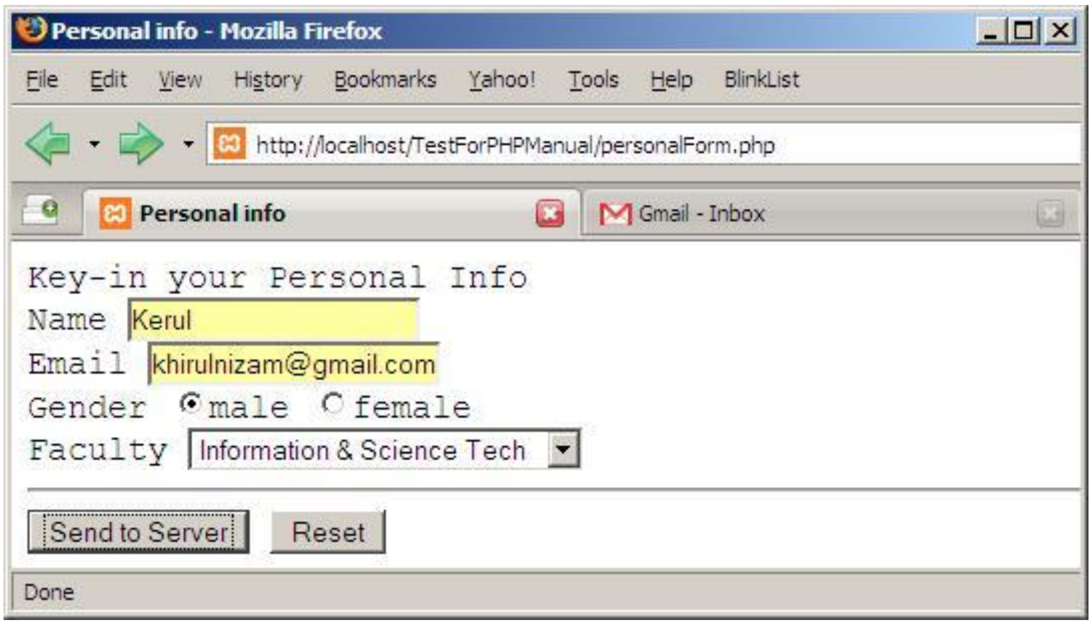
EXAMPLE 2
(This is an example with an error in the PHP script.)

Step 1.Create a HTML page with a form to receive user's information. Use the following HTML codes.

Step 2.Save as *personalForm.php*, and this page will be sent to another page with the name processPersonal.php as mentioned in the form's action.

```
<html>
<head><title>Personal info</title></head>
<body>
Key-in your Personal Info<br>
<form name="frmInfo" method="get" action="processPersonal.php">
  Name<input name="txtName"  type="text" ><br>
  Email <input name="txtEmail" type="text"  ><br>
  Gender        <input name="rGender"  type="radio" value="male">male
                <input name="rGender"  type="radio" value="female">female<br>
  Faculty       <select name="cmbFaculty">
                        <option value="FTSI">Information & Science Tech</option>
                        <option value="FPM">Management & Muamalah</option>
                        <option value="FPPI">Islamic Studies</option>
                        <option value="FBK">Language & Communication</option>
                </select>
          <hr>
                <input name="btnSubmit"  type="submit"  value="Send to Server">
                <input name="btnReset"  type="reset"  value="Reset">
</form>
</body>
</html>
```

This is the output of the HTML code above.


Personal info - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/personalForm.php
Personal info
Gmail - Inbox
Send to Server
Reset
Done

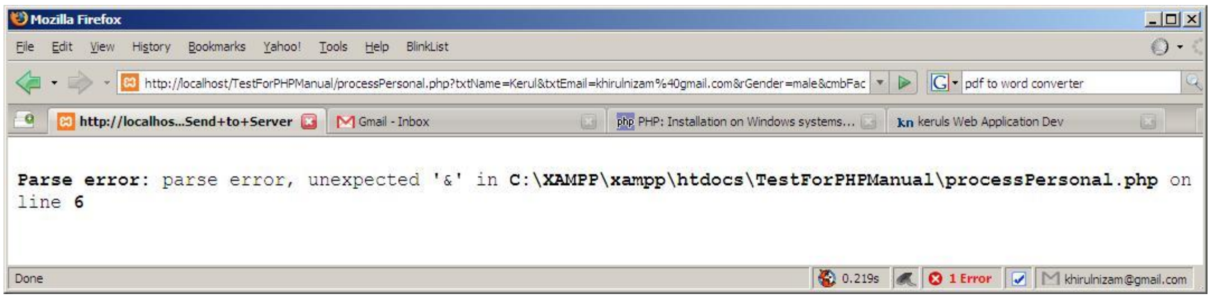
Key-in your Personal Info
Name Kerul
Email khirulnizam@gmail.com
Gender [✓ male] female
Faculty Information & Science Tech

Step 3.Create another page and write the code.

Step 4.Save the page as *processPersonal.php*.

```
1.  <html>
2.  <head>
3.  <?php
4.      $name=$_GET["txtName"];
5.      $email=$_GET["txtEmail"];
6.      &gender=$_GET["rGender"];
7.      $faculty=$_GET["cmbFaculty"];
8.  ?>
9.  <title>Display Personal Info for <?php echo $name;?></title></head>
10. <body>
11. <b>These are my personal details</b>
12. <hr>
13. My name is <?php echo $name;?>.<br>
14. I am <?php echo $gender;?>.<br>
15. I am a student of faculty <?php echo $faculty;?>.<br>
16. Do contact me for any comment...<a href="mailto:<?php echo $email;?>">
17. <?php echo $email;?> </a>
18. </body>
19. </html>
```

Step 5.When the page is viewed in the browser, there's a massage saying that the page (processPersonal.php) has an error in **line 6**.


Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/processPersonal.php?txtName=Kerul&txtEmail=khirulnizam%40gmail.com&rGender=male&cmbFac
pdf to word converter
http://localhos...Send+to+Server
Gmail - Inbox
PHP: Installation on Windows systems...
keruls Web Application Dev
Done
0.219s
1 Error
khirulnizam@gmail.com

```
Parse error: parse error, unexpected '&' in C:\XAMPP\xampp\htdocs\TestForPHPManual\processPersonal.php on
line 6
```

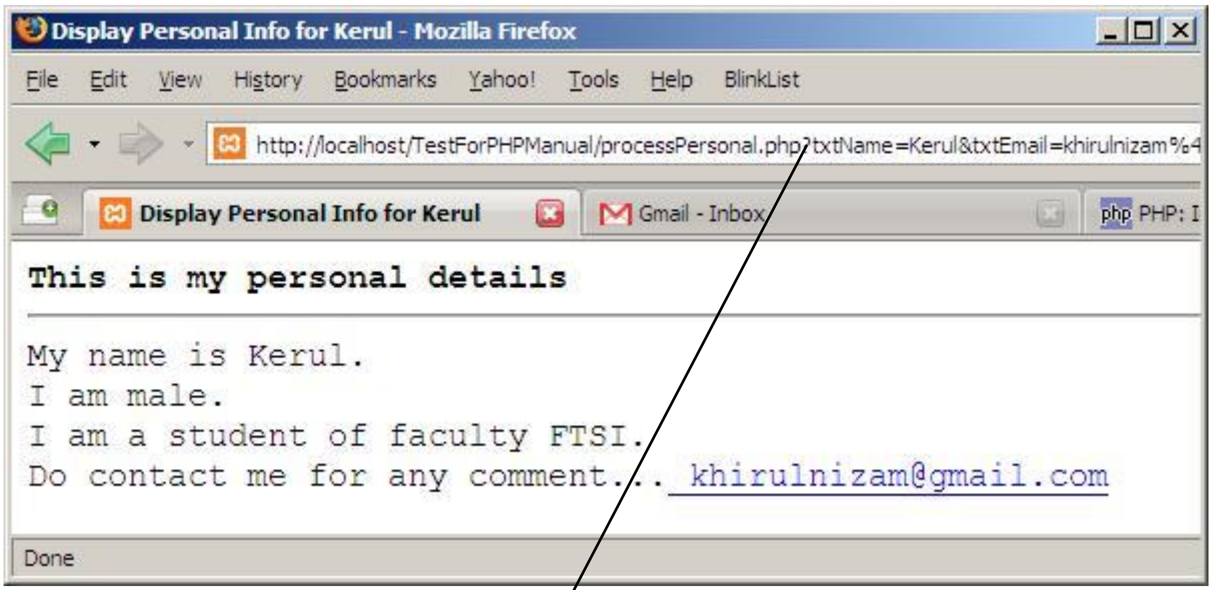
Step 6.Open the processPersonal.php in the code editor (Dreamwever) and go to the **line 6**, and fix the error. There are not suppose to have '&' before *gender*. Change the '&' into '$'.

```
1.  <html>
2.  <head>
3.  <?php
4.      $name=$_GET["txtName"];
5.      $email=$_GET["txtEmail"];
6.      $gender=$_GET["rGender"];
7.      $faculty=$_GET["cmbFaculty"];
8.  ?>
9.  <title>Display Personal Info for <?php echo $name;?></title></head>
10. <body>
11. <b>These are my personal details</b>
12. <hr>
13. My name is <?php echo $name;?>.<br>
14. I am <?php echo $gender;?>.<br>
15. I am a student of faculty <?php echo $faculty;?>.<br>
16. Do contact me for any comment...<a href="mailto:<?php echo $email;?>">
17. <?php echo $email;?> </a>
18. </body>
19. </html>
```

This is the error, change to $ as the beginning of any variable.

Step 7.Save the file.

Step 8.Go to the web browser, and refresh the page.


Display Personal Info for Kerul - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/processPersonal.php?txtName=Kerul&txtEmail=khirulnizam%4
Display Personal Info for Kerul
Gmail - Inbox
PHP: I
Done

This is my personal details

My name is Kerul.
I am male.
I am a student of faculty FTSI.
Do contact me for any comment... khirulnizam@gmail.com

The query string enlarged:
http://localhost/TestForPHPManual/processPersonal.php?**txtName=Kerul**&**txtEmail=khirulnizam%40gmail.com**&**rGender=male**&**cmbFaculty=FTSI**&btnSubmit=Send+to+Server

Step 9.Observe at the address bar, the querystring is much longer than the querystring in Example 1. **Why is this happening?**

Input Through the HTML Form using POST method.

EXAMPLE 3

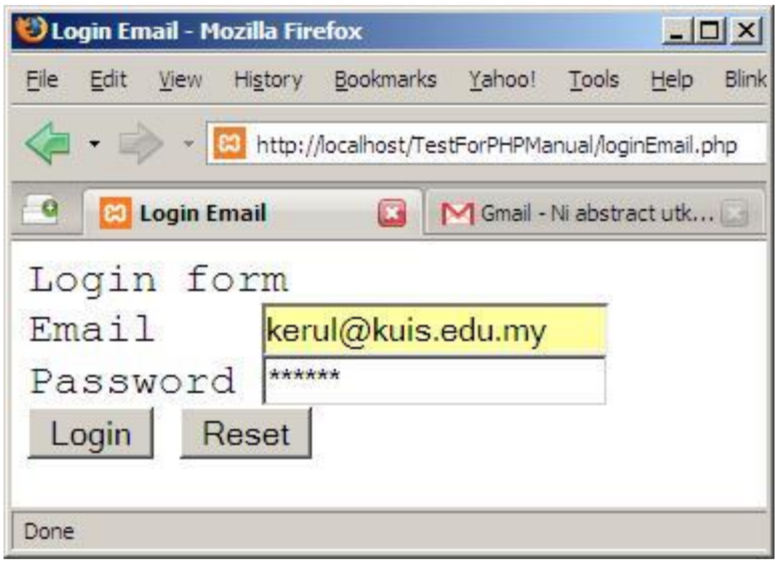
Step 1.Create a HTML page with a form to receive email address and the password. Write the following HTML codes and save as *loginEmail.php*. Make sure the method in the form is POST.

```
<html>
<head><title>Login Email</title></head>
<body>
Login form <br>
<form name="loginEmail"  method= "POST"  action="checkPassword.php">
  Email
        <input name="txtEmail"  type="text"><br>
  Password
        <input name="txtPassword"  type="password">
              <br>
        <input name="btnSubmit"  type="submit"  value="Login">
        <input name="btnReset"  type="reset"  value="Reset">
</form>
</body>
</html>
```

Step 2.Create a another HTML page with the PHP script to retrieve the user's email and password.. Write the following HTML codes and save as checkPassword.*php*. Observe closely how the user's email and password are retrieved.

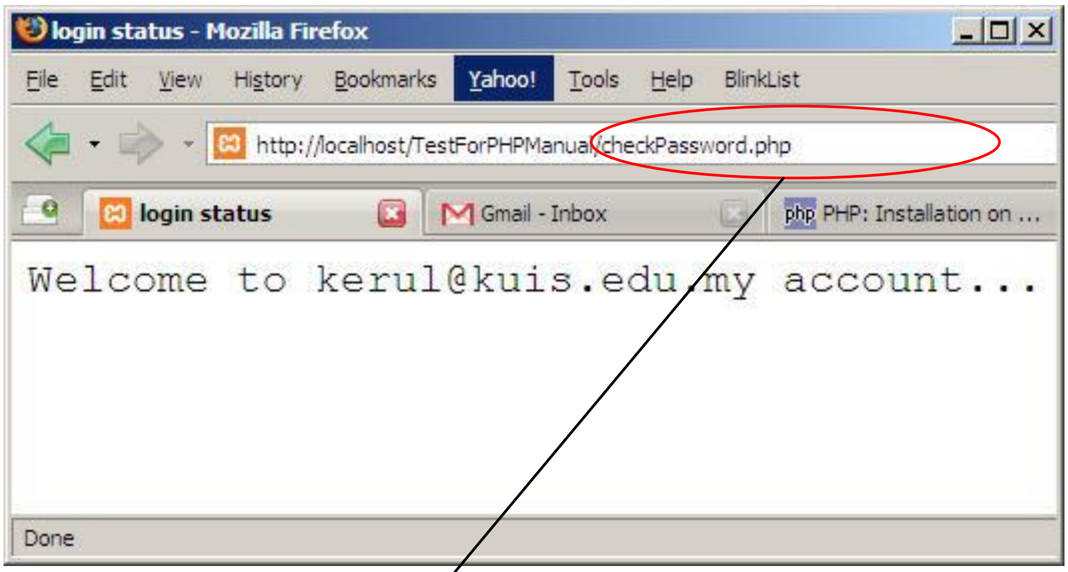
```
<html>
<head>
<?php
        $email=$_POST["txtEmail"]; //email is extracted
        $pword=$_POST["txtPassword"];  //password is extracted
?>
<title>Login status </title>
</head>
<body>
<?php
        $systemPassword="abc123";

        if ($pword==$systemPassword){ //case 1: user password matches system
password
              echo "Welcome to $email account...<br>";
        }
        else{ //case 1: user passwrod do not match system password
              echo "Password does not match...<br>";
        }
?>
</body>
</html>
```

Step 3.Go to your browser and open the file for the form. Key in your email address, and the password (use *abc123*), and click the *Login* button.


Login Email - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help Blink
http://localhost/TestForPHPManual/loginEmail.php
Login Email
Gmail - Ni abstract utk...
Done

Login form
Email kerul@kuis.edu.my
Password ******
Login Reset

Step 4.If you keyed-in the right password (abc123) then you will get this page.

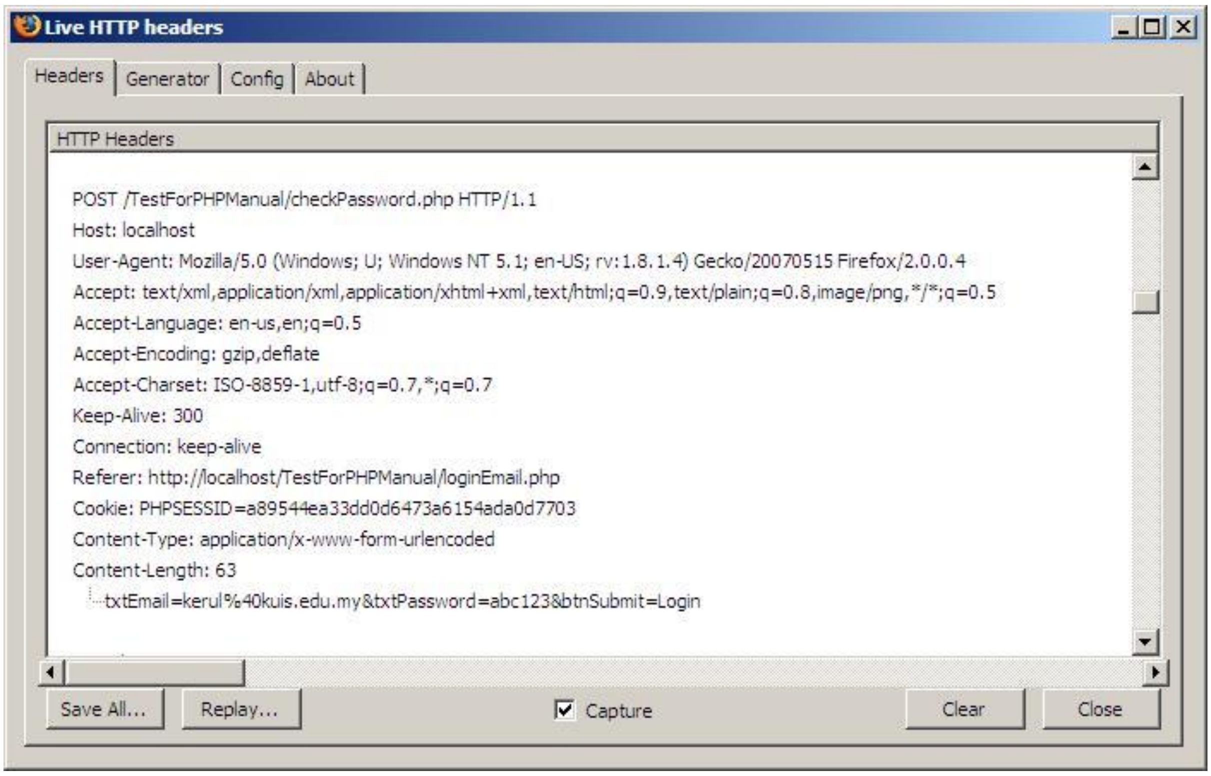

login status - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
http://localhost/TestForPHPManual/checkPassword.php
login status
Gmail - Inbox
PHP: Installation on ...
Done

Welcome to kerul@kuis.edu.my account...

The values from the previous form (in step 3) do not appear here. This is one of the advantages by using POST method to submit confidential data. No one get to see the values in the URL*.

Live HTTP headers

Although the values are not included in the URL, still this is not the most secure internet transaction. It still visible if you have the right tools to uncover the values transmitted through POST method. Example: use the Live HTTP Headers from http://livehttpheaders.mozdev.org/ to view all the information submitted to the server. Refer to the next page.



```
POST /TestForPHPManual/checkPassword.php HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.8.1.4) Gecko/20070515 Firefox/2.0.0.4
Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,image/png,*/*;q=0.5
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip,deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Referer: http://localhost/TestForPHPManual/loginEmail.php
Cookie: PHPSESSID=a89544ea33dd0d6473a6154ada0d7703
Content-Type: application/x-www-form-urlencoded
Content-Length: 63
  txtEmail=kerul%40kuis.edu.my&txtPassword=abc123&btnSubmit=Login
```

Differences between GET and POST method.

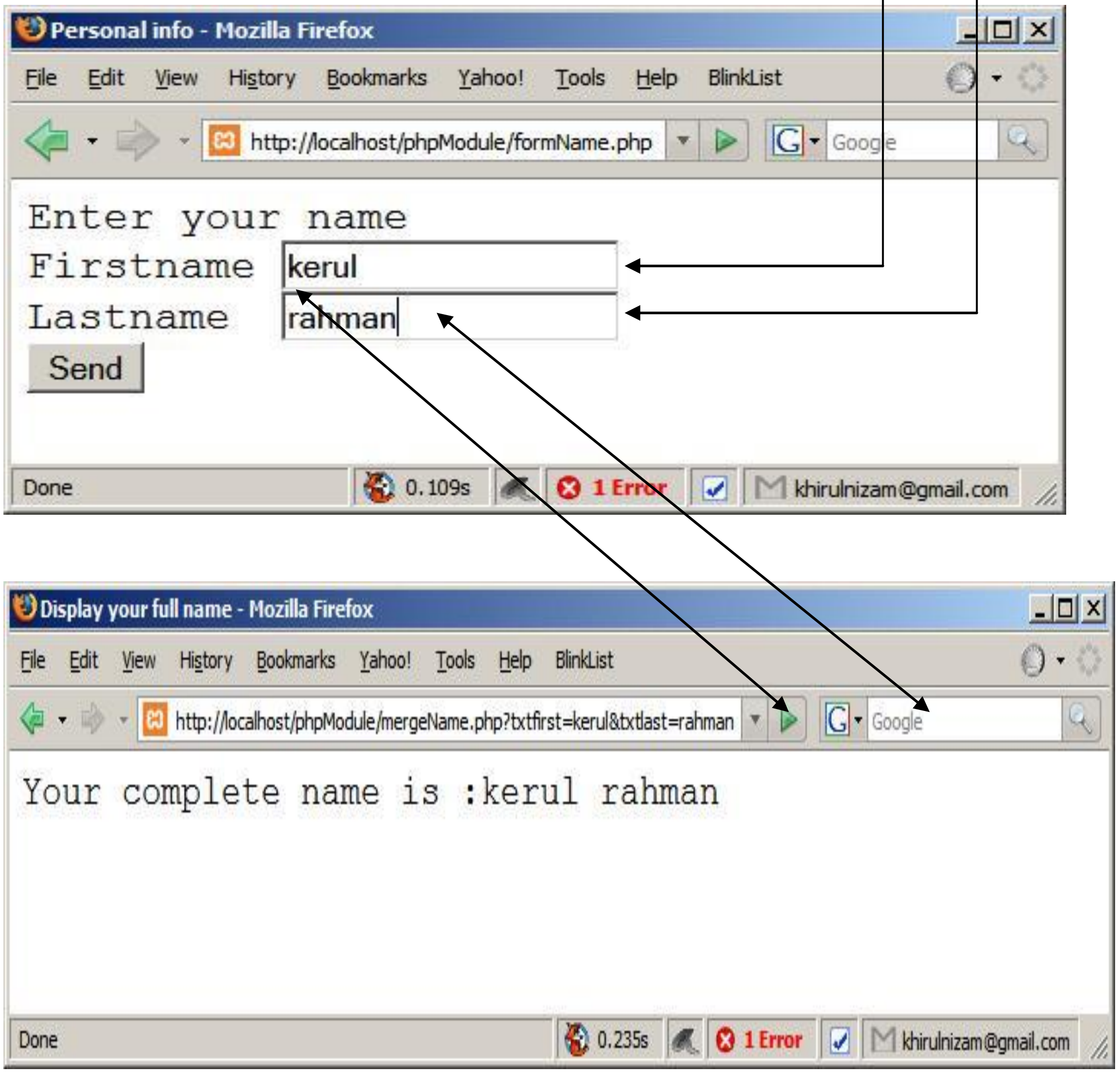
(Extracted from: http://www.cs.tut.fi/~jkorpela/forms/methods.html)

- The HTML specifications have *technically* define the difference between "GET" and "POST"
- **GET** is basically for just getting (retrieving) data.
- The variable name and the value appear in the URL and they are visible to the naked eyes.
- GET - form data is to be encoded (by a browser) into at the end of the URL of the target file.
- **POST** - form data is embedded within a message body.
- POST may involve anything, like storing files to the server, updating data, ordering a product, or sending an e-mail.
- The variable name and the value do not appear in the URL.

Extracting the form's information using $_GET

When a form is submitted to the target file, the input element names and their respective values are embedded in the URL to form a querystring. The query string is ????.

```
<html>
<head><title>Name</title></head>
<body>
Enter your name<br>
<form name="frmName" method="get" action="mergeName.php">
  Firstname  <input  name="txtfirst"  type="text"><br>
  Lastname  <input  name="txtlast"  type="text"><br>
         <input name="btnSubmit" type="submit"  value="Send">
</form>
</body>
</html>
```


Personal info - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
Done 0.109s 1 Error khirulnizam@gmail.com
Display your full name - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
Done 0.235s 1 Error khirulnizam@gmail.com

http://localhost/phpModule/formName.php

Enter your name
Firstname kerul
Lastname rahman
Send

http://localhost/phpModule/mergeName.php?txtfirst=kerul&txtlast=rahman

Your complete name is :kerul rahman

The query string enlarged:
http://localhost/phpModule/mergeName.php?**txtfirst=kerul**&**txtlast=rahman**

```
<html>
<head>
<?php
      $firstname=$_GET["txtfirst"];
      $lastname=$_GET["txtlast"];
?>
<title>Display your full name</title></head>
<body>

<?php
echo "Your complete name is :".$firstname." ".$lastname;
?>

</body>
</html>
```

Displaying variable's value using echo

There are many functions capable of displaying (generating output) in PHP. The most popular function is echo. Below are few descriptions taken from the official PHP Manual about the echo. (Adapted from http://php.net/echo)

Echo outputs all parameters.

Examples

```
<?php
echo "Hello World";

echo "This spans
multiple lines. The newlines will be
output as well";

echo "This spans\nmultiple lines. The newlines will be\noutput as
well.";

echo "Escaping characters is done \"Like this\".";

// You can use variables inside of an echo statement
$foo = "foobar";
$bar = "barbaz";

echo "foo is $foo"; // foo is foobar

// Using single quotes will print the variable name, not the value
echo 'foo is $foo'; // foo is $foo

// Some people prefer passing multiple parameters to echo over
concatenation.
echo 'This ' . 'string ' . 'was ' . 'made ' . 'with concatenation.'
. "\n";
?>
```

References

1. Live HTTP headers is provided by mozdev.org and can be downloaded freely at http://livehttpheaders.mozdev.org/
2. The article on Differences between GET and POST provided by Jukka "Yucca" Korpela, and available from http://www.cs.tut.fi/~jkorpela/forms/methods.html
3. The official documentation (help/manual) is available from http://php.net. Simply add the function needed for elaboration at the end of the address. Example php.net/echo to know more about echo, how to use it, some examples, and users' contributed notes.

EXERCISE 3

Exercise 3.1

You’re given this code for the form (the first page), so the user could key-in the book information needed. If the user clicks the “Save Book” button, the information will be sent to another file named *displayBookInfo.php*. Retrieve the values from the form, and display them on the second page.

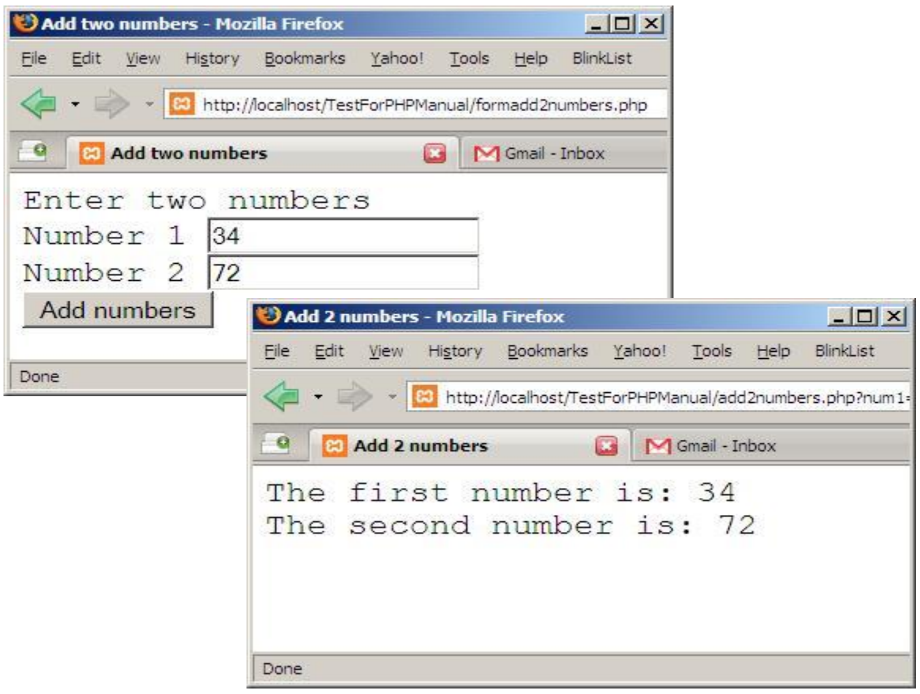
```
<html>
<head>
<title>Add New Book</title>
</head>
<body>
Add New Book<br>
<form method="GET" name="formNew" action=" displayBookInfo.php">
        ISBN            <input type="text" name="isbn"><br>
        Title           <input type="text" name="title"><br>
        Author          <input type="text" name="author"><br>
        Publisher       <input type="text" name="publisher"><br>
        Year            <input type="text" name="year"><br>
        Quantity        <input type="text" name="number"><br>
        <input type="submit" value="Save Book" name="submit">
        <input type="reset" value="Reset" name="reset">
</form>
</body>
</html>
```

Exercise 3.2

Create the form for the user to enter the information for his/her name, home address, e-mail, mobile phone number, and also a submit button to send the information to the target file. Create another page (the target file) to receive the user’s input, and display all the values.

Exercise 3.3

Below are the pages for a simple web calculator. The form will receive two numbers, sent the numbers to the target page, and display the numbers on the target page. Write the HTML tags and the PHP scripts for both pages.


Add two numbers - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
Add two numbers
Gmail - Inbox
Add numbers
Done
Add 2 numbers - Mozilla Firefox
File Edit View History Bookmarks Yahoo! Tools Help BlinkList
Add 2 numbers
Gmail - Inbox
Done

http://localhost/TestForPHPManual/formadd2numbers.php

```
Enter two numbers
Number 1  34
Number 2  72
```

http://localhost/TestForPHPManual/add2numbers.php?num1=

```
The first number is: 34
The second number is: 72
```