Unit 3 : Handling Form, Session Tracking & PHP Components

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Topics

- Handling form with GET & POST
- Server variable
- Cookies
- Session
- PHP Components
  - PHP GD Library
  - PHP Regular expression
  - Uploading file
  - Sending mail
- What is AJAX
- PHP with AJAX (Example)
- MySql with AJAX (unit 4)
- What is JQuery AJAX (Example)
- JQuery AJAX with PHP (Example)

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Get v/s Post

	GET	POST
Definition	Using GET Method data is sent from one page to other in the URL using query string format.	Using POST Method data is sent from one page to other within the body of the HTTP request.
Visibility in URL	The GET method, appends name/value pairs to the URL.	POST method packages the name/value pairs inside the body of the HTTP request, which makes for a cleaner URL.
Restrictions on data length	The length of a URL is limited so the GET method can send limited size data. (maximum URL length is 2048 characters)	POST method imposes no size limitations on the forms output.
Security	Using GET method is insecure because parameters passed on the URL are visible in the address field of the browser.	Using POST method is more secure because no data is visible in the URL and parameters are not stored in browser history or in web server logs

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Restrictions on data type	GET method can't be used to send binary data, like images or word documents, to the server. Only ASCII characters allowed	The POST method can be used to send ASCII as well as binary data.
Variable	The data sent by GET method can be accessed using $_GET superglobal variable.	The data sent by POST method can be accessed using $_POST superglobal variable
Bookmarked	Can be bookmarked	Cannot be bookmarked
Cached	Can be cached	Not cached
History	Parameters remain in browser history	Parameters are not saved in browser history

Server variables/ super global variables

- Some predefined variables in PHP are "superglobals", which means that they are always accessible, regardless of scope - and you can access them from any function, class or file without having to do anything special.
- The PHP superglobal variables are:
  - $GLOBALS
  - **$_SERVER**
  - **$_REQUEST**
  - **$_POST**
  - **$_GET**
  - **$_FILES**
  - $_ENV
  - **$_COOKIE**
  - **$_SESSION**

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$_SERVER

- $_SERVER is a PHP super global variable which holds information about headers, paths, and script locations.

$_SERVER['PHP_SELF']	Returns the filename of the currently executing script
$_SERVER['SERVER_ADDR']	Returns the IP address of the host server
$_SERVER['SERVER_NAME']	Returns the name of the host server
$_SERVER['SERVER_PORT']	Returns the port on the server machine being used by the web server for communication
$_SERVER['REQUEST_METHOD']	Returns the request method used to access the page (such as POST)

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$_GET

- PHP $_GET is a PHP super global variable which is used to collect form data after submitting an HTML form with method="get".
- $_GET can also collect data sent in the URL.
- **Syntax:** $var = $_GET[“parameter”];

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$_POST

- PHP $_POST is a PHP super global variable which is used to collect form data after submitting an HTML form with method="post". $_POST is also widely used to pass variables.
- **Syntax:** $var = $_POST[“parameter”];

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$_FILES

- The global predefined variable $_FILES is an associative array containing items uploaded via HTTP POST method. Uploading a file requires HTTP POST method form with enctype attribute set to multipart/form-data.
- **$HTTP_POST_FILES also contains the same information, but is not a superglobal, and now been deprecated**
- The _FILES array contains following properties
  - $_FILES['file']['name'] - The original name of the file to be uploaded.
  - $_FILES['file']['type'] - The mime type of the file.
  - $_FILES['file']['size'] - The size, in bytes, of the uploaded file.
  - $_FILES['file']['tmp_name'] - The temporary filename of the file in which the uploaded file was stored on the server.
  - $_FILES['file']['error'] - The error code associated with this file upload.

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$_REQUEST

- PHP $_REQUEST is a PHP super global variable which is used to collect data after submitting an HTML form.
- An associative array that by default contains the contents of $_GET, $_POST and $_COOKIE.

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Cookies

- A cookie is often used to identify a user. A cookie is a small file that the server embeds on the user's computer. Each time the same computer requests a page with a browser, it will send the cookie too. With PHP, you can both create and retrieve cookie values.
- A cookie is created with the setcookie() function.
- **Syntax:** setcookie(*key, value, expire, path, domain, secure, httponly*);

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Accessing Cookies with PHP

- PHP provides many ways to access cookies. Simplest way is to use either $_COOKIE or $HTTP_COOKIE_VARS variables.
- **Syntax**: $_COOKIE["key"];

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Deleting Cookie with PHP

- Officially, to delete a cookie you should call setcookie() with the name argument only but this does not always work well, however, and should not be relied on.
- **Syntax:** setcookie("name");

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Session

- When you work with an application, you open it, do some changes, and then you close it. This is much like a Session. The computer knows who you are. It knows when you start the application and when you end. But on the internet there is one problem: the web server does not know who you are or what you do, because the HTTP address doesn't maintain state.
- Session variables solve this problem by storing user information to be used across multiple pages (e.g. username, favourite colour, etc). By default, session variables last until the user closes the browser.
- So, Session variables hold information about one single user, and are available to all pages in one application.

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- An alternative way to make data accessible across the various pages of an entire website is to use a PHP Session.
- A session creates a file in a temporary directory on the server where registered session variables and their values are stored. This data will be available to all pages on the site during that visit.
- The location of the temporary file is determined by a setting in the **php.ini** file called **session.save_path**. Before using any session variable make sure you have setup this path.

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- When a session is started following things happen −
  - PHP first creates a unique identifier for that particular session which is a random string of 32 hexadecimal numbers such as 3c7foj34c3jj973hjkop2fc937e3443.
  - A cookie called **PHPSESSID** is automatically sent to the user's computer to store unique session identification string.
  - A file is automatically created on the server in the designated temporary directory and bears the name of the unique identifier prefixed by sess_ ie sess_3c7foj34c3jj973hjkop2fc937e3443.

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- When a PHP script wants to retrieve the value from a session variable, PHP automatically gets the unique session identifier string from the PHPSESSID cookie and then looks in its temporary directory for the file bearing that name and a validation can be done by comparing both values.
- A session ends when the user loses the browser or after leaving the site, the server will terminate the session after a predetermined period of time, commonly 30 minutes duration.

Starting a PHP Session

- A PHP session is easily started by making a call to the **session_start()** function.This function first checks if a session is already started and if none is started then it starts one. It is recommended to put the call to **session_start()** at the beginning of the page.
- Session variables are stored in associative array called **$_SESSION[]**. These variables can be accessed during lifetime of a session.
- **Syntax:** $_SESSION['counter'];

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Destroying a PHP Session

- A PHP session can be destroyed by **session_destroy()** function. This function does not need any argument and a single call can destroy all the session variables. If you want to destroy a single session variable then you can use **unset()** function to unset a session variable.
- **Syntax:** session_unset();
- **Syntax:** session_destroy();

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GD Library

- The GD library is a graphics drawing library that provides tools for manipulating image data. In Shop, the GD library is used to process images for generating gallery preview and thumbnail size images automatically.
- PHP can do much more than just serve HTML to visitors. For instance, it has the ability to manipulate images. Not only that, but you can also create your own images from scratch and then either save them or serve them to users.
- PHP can handle almost all your basic image manipulating needs using the GD library—short for Graphic Draw.
- **Note:** On Windows servers, php_gd2.dll is included in a standard PHP installation, but is not enabled by default. To enable it, uncomment the extension=php_gd2.dll line in your php.ini file (remove the # from the beginning of that line) and restart the PHP extension.
- **Note:** If you are working on Windows, you can include the php_gd2.dll file as an extension in php.ini. If you're using something like XAMPP, you will find the php_gd2.dll file in the directory xampp\php\ext. You can also check if GD is installed on your system using the function phpinfo();. If you scroll through the resulting output, you will find something similar to the following.

File Uploading

- A PHP script can be used with a HTML form to allow users to upload files to the server. Initially files are uploaded into a temporary directory and then relocated to a target destination by a PHP script.
- Steps are:
  - The user opens the page containing a HTML form featuring a text files, a browse button and a submit button.
  - The user clicks the browse button and selects a file to upload from the local PC.
  - The full path to the selected file appears in the text filed then the user clicks the submit button.
  - The selected file is sent to the temporary directory on the server.
  - The PHP script that was specified as the form handler in the form's action attribute checks that the file has arrived and then copies the file into an intended directory.
  - The PHP script confirms the success to the user.

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Sending mail/mail()

- PHP mail is the built in PHP function that is used to send emails from PHP scripts.
- Parameters; Email address, Subject, Message, CC or BC email addresses
- It's a cost effective way of notifying users on important events.
- Let users contact you via email by providing a contact us form on the website that emails the provided content.
- Developers can use it to receive system errors by email
- You can use it to email your newsletter subscribers.
- You can use it to send password reset links to users who forget their passwords
- You can use it to email activation/confirmation links. This is useful when registering users and verifying their email addresses

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AJAX

- AJAX = Asynchronous JavaScript And XML.
- AJAX is not a programming language.
- AJAX just uses a combination of:
- A browser built-in XMLHttpRequest object (to request data from a web server)
- JavaScript and HTML DOM (to display or use the data)
- AJAX allows web pages to be updated asynchronously by exchanging data with a web server behind the scenes. This means that it is possible to update parts of a web page, without reloading the whole page.

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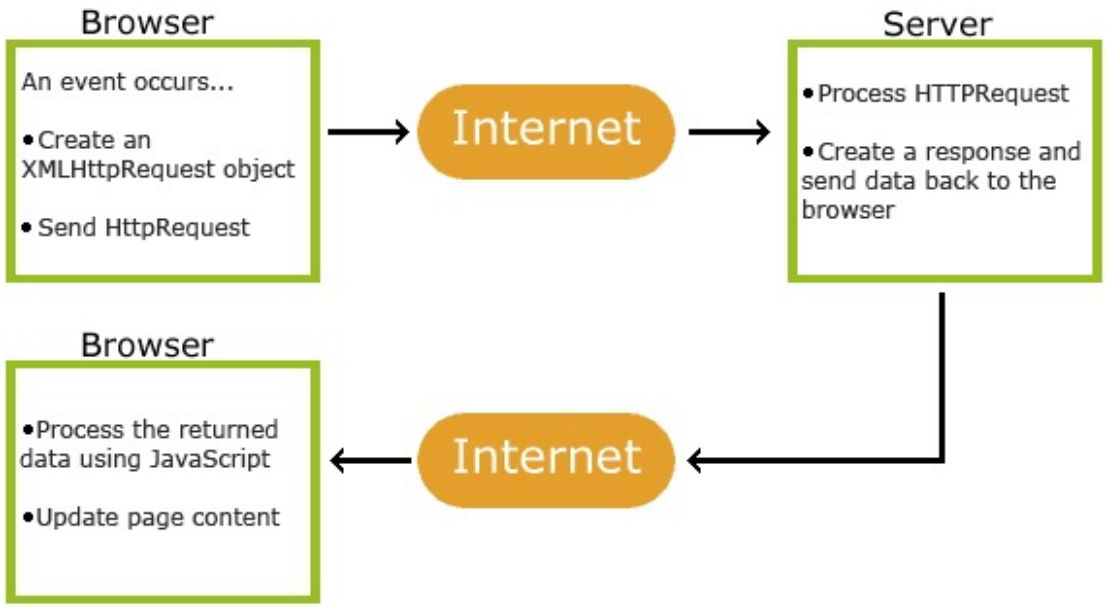
How AJAX Works



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- An event occurs in a web page (the page is loaded, a button is clicked)
- An XMLHttpRequest object is created by JavaScript
- The XMLHttpRequest object sends a request to a web server
- The server processes the request
- The server sends a response back to the web page
- The response is read by JavaScript
- Proper action (like page update) is performed by JavaScript

What is jQuery?

- jQuery is a lightweight, "write less, do more", JavaScript library.
- The purpose of jQuery is to make it much easier to use JavaScript on your website.
- jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that you can call with a single line of code.
- jQuery also simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation.
- The jQuery library contains the following features:
  - HTML/DOM manipulation
  - CSS manipulation
  - HTML event methods
  - Effects and animations
  - AJAX
  - Utilities

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Adding jQuery to Your Web Pages

- There are several ways to start using jQuery on your web site. You can:
  - Download the jQuery library from jQuery.com
  - Include jQuery from a CDN, like Google

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Downloading jQuery

- There are two versions of jQuery available for downloading:
  - Production version - this is for your live website because it has been minified and compressed
  - Development version - this is for testing and development (uncompressed and readable code)
- Both versions can be downloaded from jQuery.com.
- **The jQuery library is a single JavaScript file, and you reference it with the HTML <script> tag (notice that the <script> tag should be inside the <head> section):**

```
<head>
  <script src="jquery-3.5.1.min.js"></script>
</head>
```

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jQuery CDN

- If you don't want to download and host jQuery yourself, you can include it from a CDN (Content Delivery Network).
- Google is an example of someone who host jQuery:
- Google CDN:
- <head>
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js">
- </script>
  </head>

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