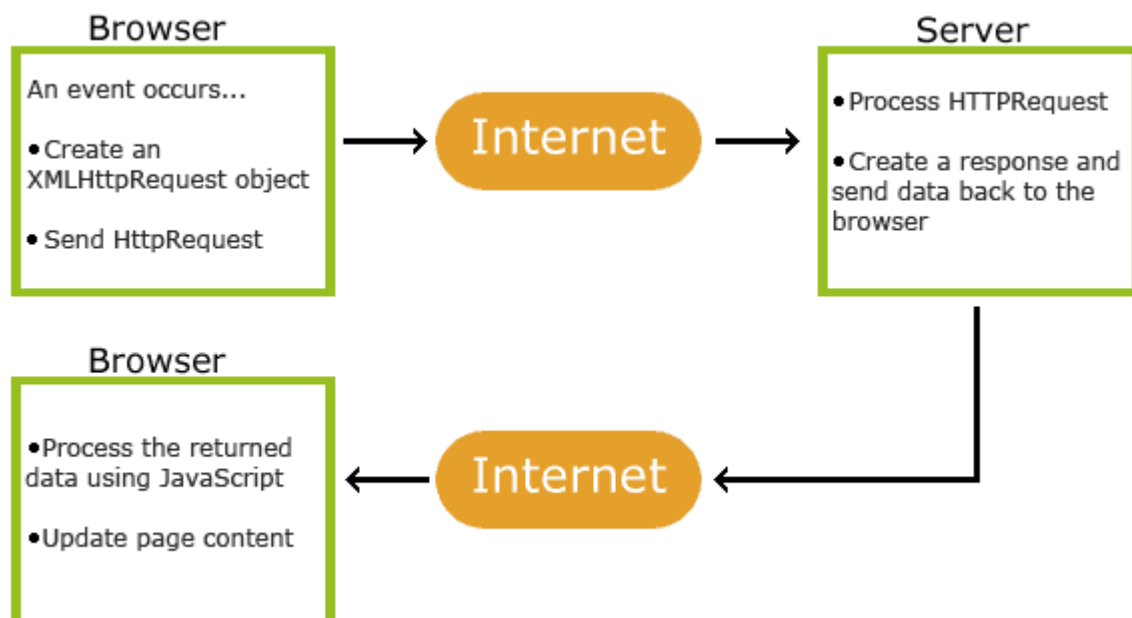# PHP - AJAX Introduction

What is AJAX?

AJAX = Asynchronous JavaScript and XML.

AJAX is a technique for **creating fast and dynamic web pages.**

How AJAX Works

AJAX is Based on Internet Standards

AJAX is based on internet standards, and uses a combination of:

- **XMLHttpRequest object** (to exchange data asynchronously with a server)
- **JavaScript/DOM** (to display/interact with the information)

- CSS (to style the data)
- XML (often used as the format for transferring data)

PHP - AJAX and MySQL

AJAX can be used for interactive communication with a database.

Example Explained - The MySQL Database

The database table we use in the example above looks like this:

id	FirstName	LastName	Age	Hometown	Job
1	Peter	Griffin	41	Quahog	Brewery
2	Lois	Griffin	40	Newport	Piano Teacher
3	Joseph	Swanson	39	Quahog	Police Officer
4	Glenn	Quagmire	41	Quahog	Pilot

Example Explained

Here is the HTML code

```html
<html>

<head>
  <script>
    function showUser(str) {
      if (str == "") {
        document.getElementById("txtHint").innerHTML = "";
        return;
      } else {
        var xmlhttp = new XMLHttpRequest();
        xmlhttp.onreadystatechange = function () {
          if (this.readyState == 4 && this.status == 200) {
            document.getElementById("txtHint").innerHTML = this.responseText;
          }
        };
        xmlhttp.open("GET", "getuser.php?q=" + str, true);
        xmlhttp.send();
      }
    }
  </script>
</head>

<body>
```

```
<form>
  <select name="users"
onchange="showUser(this.value)">
    <option value="">Select a person:</option>
    <option value="1">Peter Griffin</option>
    <option value="2">Lois Griffin</option>
    <option value="3">Joseph Swanson</option>
    <option value="4">Glenn Quagmire</option>
  </select>
</form>
<br>
<div id="txtHint"><b>Person info will be listed
here...</b></div>

</body>

</html>
```

The PHP File

The page on the server called by the JavaScript above is a PHP file called **"getuser.php"**.

The source code in "getuser.php" runs a query against a MySQL database, and returns the result in an HTML table:

```
<!DOCTYPE html>
<html>
```

```html
<head>
  <style>
    table {
      width: 100%;
      border-collapse: collapse;
    }

    table,
    td,
    th {
      border: 1px solid black;
      padding: 5px;
    }

    th {
      text-align: left;
    }
  </style>
</head>

<body>

  <?php
  $q = intval($_GET['q']);

  $con = mysqli_connect('localhost', 'peter', 'abc123');
  if (!$con) {
    die('Could not connect: ' . mysqli_error($con));
  }
```

```php
    mysqli_select_db($con, "ajax_demo");
    $sql = "SELECT * FROM user WHERE id = '" . $q .
"'";
    $result = mysqli_query($con, $sql);

    echo "<table>
<tr>
<th>Firstname</th>
<th>Lastname</th>
<th>Age</th>
<th>Hometown</th>
<th>Job</th>
</tr>";
    while ($row = mysqli_fetch_array($result)) {
        echo "<tr>";
        echo "<td>" . $row['FirstName'] . "</td>";
        echo "<td>" . $row['LastName'] . "</td>";
        echo "<td>" . $row['Age'] . "</td>";
        echo "<td>" . $row['Hometown'] . "</td>";
        echo "<td>" . $row['Job'] . "</td>";
        echo "</tr>";
    }
    echo "</table>";
    mysqli_close($con);
    ?>
</body>

</html>
```

PHP Example - AJAX Live Search

AJAX can be used to create more user-friendly and interactive searches.

```html
<!DOCTYPE html>
<html>

<head>
    <title>AJAX Live Search</title>
    <script src="https://code.jquery.com/jquery-
3.6.0.min.js"></script>
    <script src="script.js"></script>
    <link rel="stylesheet" type="text/css"
href="styles.css">
</head>

<body>
    <h1>Live Search Example</h1>
    <input type="text" id="search"
placeholder="Search...">
    <div id="result"></div>
</body>
<script>

    $(document).ready(function () {
        $('#search').keyup(function () {
            var searchTerm = $(this).val();
```

```javascript
        if (searchTerm != '') {
            $.ajax({
                type: 'GET',
                url: 'search.php',
                data: { term: searchTerm },
                success: function (data) {
                    $('#result').html(data);
                }
            });
        } else {
            $('#result').html('');
        }
    });
});

</script>

</html>
```

```php
<?php
// Database connection
// (you can replace this with your database credentials)
$host = "localhost";
$username = "your_username";
$password = "your_password";
$database = "your_database";

$conn = mysqli_connect($host, $username, $password,
$database);
```

```php
if (!$conn) {
    die("Connection failed: " . mysqli_connect_error());
}

// Get the search term from the AJAX request
$searchTerm = $_GET['term'];

// Perform a query to search for matching results
$query = "SELECT * FROM your_table WHERE
column_name LIKE '%$searchTerm%'";

$result = mysqli_query($conn, $query);

if (mysqli_num_rows($result) > 0) {
    // Output the results as a list
    while ($row = mysqli_fetch_assoc($result)) {
        echo '<div>' . $row['column_name'] . '</div>';
    }
} else {
    echo "No results found";
}

mysqli_close($conn);
?>
```

PHP Example - AJAX and XML

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <title>AJAX XML Example</title>
</head>

<body>
    <button id="loadData">Load Data</button>
    <div id="result"></div>

    <script>
        document.getElementById("loadData").addEventListener("click", function () {
            // Create a new XMLHttpRequest object
            var xhr = new XMLHttpRequest();

            // Configure the request (GET request to a PHP file)
            xhr.open("GET", "server.php", true);

            // Set the callback function to handle the response
            xhr.onreadystatechange = function () {
                if (xhr.readyState === 4 && xhr.status === 200) {
                    // Parse the XML response
                    var xmlResponse = xhr.responseXML;
```

```
            // Extract data from the XML
            var title =
xmlResponse.getElementsByTagName("title")[0].textCo
ntent;
            var content =
xmlResponse.getElementsByTagName("content")[0].tex
tContent;

            // Display the data on the page
            document.getElementById("result").innerHT
ML = "<h2>" + title + "</h2><p>" + content + "</p>";
        }
    };

    // Send the request
    xhr.send();
  });
</script>
</body>

</html>
```

```php
<?php
// Simulate some data to send as an XML response
$data = '<data>
    <title>AJAX XML Example</title>
    <content>This is an example of an AJAX request
using XML.</content>
</data>';

// Set the Content-Type header to indicate XML
response
header('Content-Type: application/xml');

// Echo the XML data
echo $data;
?>
```