

Lab 5. PHP vs AJAX (4 tiết)

I. Yêu cầu

- Sinh viên tìm hiểu các kiến thức liên quan đến lập trình PHP sử dụng AJAX.
- Mỗi người làm trên một dự án khác nhau.
- Khi có yêu cầu, sinh viên nộp bài qua LMS.

II. Lý thuyết

AJAX là chữ viết tắt của cụm từ Asynchronous Javascript and XML. AJAX là phương thức trao đổi dữ liệu với máy chủ và cập nhật một hay nhiều phần của trang web, hoàn toàn không reload lại toàn bộ trang.

Ajax được viết bằng Javascript chạy trên Client, tức là mỗi trình duyệt sẽ chạy độc lập hoàn toàn không ảnh hưởng lẫn nhau. Về mặt kỹ thuật, nó đề cập đến việc sử dụng các đối tượng XMLHttpRequest để tương tác với một máy chủ web thông qua Javascript..

Để tìm hiểu thêm về AJAX sinh viên xem thêm tại đây:

<https://wiki.matbao.net/ajax-la-gi-cach-su-dung-ajax-toi-uu-nhat/>

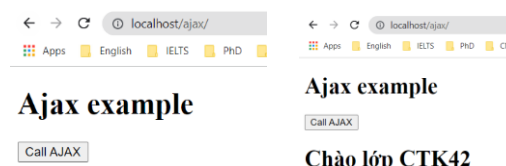
III. Luyện tập

1. Write a PHP program to illustrate the XMLHttpRequest object.

```
index.php:
<h1>Ajax example</h1>
<button onclick="callAjax();">Call AJAX</button>
<div id="demo"></div>
<script>
    function callAjax(){
        var ajax = new XMLHttpRequest();
        ajax.open("GET", "ajax.php");
        ajax.send();
        ajax.onload = function(){
            document.getElementById("demo").innerHTML = this.responseText;
        }
    }
</script>
```

```
ajax.php:
<h1 class="h1">Chào lớp CTK42</h1>
```

Output:



2. Write a PHP program to illustrate ajax in php.

php_ajax.php:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <script>
    function showHint(str) {
      if (str.length == 0) {
        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", "gethint.php?q=" + str, true);
        xmlhttp.send();
      }
    }
  </script>
</head>
<body>
  <p><b>Start typing a name in the input field below:</b></p>
  <form action="">
    <label for="fname">First name:</label>
    <input type="text" id="fname" name="fname" onkeyup="showHint(this.value)">
  </form>
  <p>Suggestions: <span id="txtHint"></span></p>
</body>
</html>
```

gethint.php:

```
<?php
$a[] = "Anna";
$a[] = "Brittany";
$a[] = "Cinderella";
$a[] = "Diana";
$a[] = "Eva";
$a[] = "Fiona";
$a[] = "Gunda";
$a[] = "Hege";
$a[] = "Inga";
$a[] = "Johanna";
$a[] = "Kitty";
$a[] = "Linda";
$a[] = "Nina";
$a[] = "Ophelia";
$a[] = "Petunia";
$a[] = "Amanda";
```

```

$a[] = "Raquel";
$a[] = "Cindy";
$a[] = "Doris";
$a[] = "Eve";
$a[] = "Evita";
$a[] = "Sunniva";
$a[] = "Tove";
$a[] = "Unni";
$a[] = "Violet";
$a[] = "Liza";
$a[] = "Elizabeth";
$a[] = "Ellen";
$a[] = "Wenche";
$a[] = "Vicky";
$q = $_REQUEST["q"];
$hint = "";
if($q != ""){
    $q = strtolower($q);
    $len = strlen($q);
    foreach($a as $name){
        if(stristr($q, substr($name,0,$len))){
            if($hint == ""){
                $hint = $name;
            }
            else {
                $hint .= ", ".$name;
            }
        }
    }
}
echo $hint == "" ? "no suggestion": $hint;
?>

```

Output:

localhost/07/php_ajax.php	localhost/07/php_ajax.php	localhost/07/php_ajax.php
<p>Start typing a name in the input field below:</p> <p>First name: <input type="text"/></p> <p>Suggestions:</p>	<p>Start typing a name in the input field below:</p> <p>First name: <input type="text" value="a"/></p> <p>Suggestions: Anna,Amanda</p>	<p>Start typing a name in the input field below:</p> <p>First name: <input type="text" value="c"/></p> <p>Suggestions: Cinderella,Cindy</p>

3. Write a PHP program to illustrate ajax in php and XML.

php_ajax_xml.php:

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <script>
        function showCD(str) {
            if (str=="") {
                document.getElementById("txtHint").innerHTML="";
                return;
            }
            var xmlhttp=new XMLHttpRequest();

```

```

xmlhttp.onreadystatechange=function() {
    if (this.readyState==4 && this.status==200) {
        document.getElementById("txtHint").innerHTML=this.responseText;
    }
}
xmlhttp.open("GET","getcd.php?q="+str,true);
xmlhttp.send();
}
</script>
</head>
<body>
<form>
    Select a CD:
    <select name="cds" onchange="showCD(this.value)">
    <option value="">Select a CD:</option>
    <option value="Bob Dylan">Bob Dylan</option>
    <option value="Bee Gees">Bee Gees</option>
    <option value="Cat Stevens">Cat Stevens</option>
    </select>
</form>
<div id="txtHint"><b>CD info will be listed here...</b></div>
<script>
    function showCD(str) {
        if (str=="") {
            document.getElementById("txtHint").innerHTML="";
            return;
        }
        var xmlhttp=new XMLHttpRequest();
        xmlhttp.onreadystatechange=function() {
            if (this.readyState==4 && this.status==200) {
                document.getElementById("txtHint").innerHTML=this.responseText;
            }
        }
        xmlhttp.open("GET","getcd.php?q="+str,true);
        xmlhttp.send();
    }
</script>
</body>
</html>

```

getcd.php:

```

<?php
$q=$_GET["q"];
$xmlDoc = new DOMDocument();
$xmlDoc->load("cd_catalog.xml");
$x=$xmlDoc->getElementsByTagName('ARTIST');
for ($i=0; $i<=$x->length-1; $i++) {
    //Process only element nodes
    if ($x->item($i)->nodeType==1) {
        if ($x->item($i)->childNodes->item(0)->nodeValue == $q) {
            $y=($x->item($i)->parentNode);
        }
    }
}
$cd=($y->childNodes);
for ($i=0;$i<$cd->length;$i++) {
    //Process only element nodes
    if ($cd->item($i)->nodeType==1) {

```

```

        echo("<b>" . $cd->item($i)->nodeName . " :</b> ");
        echo($cd->item($i)->childNodes->item(0)->nodeValue);
        echo("<br>");
    }
}
?>

```

cd_catalog.xml:

```

<CATALOG>
<CD>
<TITLE>Empire Burlesque</TITLE>
<ARTIST>Bob Dylan</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>Columbia</COMPANY>
<PRICE>10.90</PRICE>
<YEAR>1985</YEAR>
</CD>
<CD>
<TITLE>Hide your heart</TITLE>
<ARTIST>Bonnie Tyler</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>CBS Records</COMPANY>
<PRICE>9.90</PRICE>
<YEAR>1988</YEAR>
</CD>
<CD>
<TITLE>Greatest Hits</TITLE>
<ARTIST>Dolly Parton</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>RCA</COMPANY>
<PRICE>9.90</PRICE>
<YEAR>1982</YEAR>
</CD>
<CD>
<TITLE>Still got the blues</TITLE>
<ARTIST>Gary Moore</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Virgin records</COMPANY>
<PRICE>10.20</PRICE>
<YEAR>1990</YEAR>
</CD>
<CD>
<TITLE>Eros</TITLE>
<ARTIST>Eros Ramazzotti</ARTIST>
<COUNTRY>EU</COUNTRY>
<COMPANY>BMG</COMPANY>
<PRICE>9.90</PRICE>
<YEAR>1997</YEAR>
</CD>
<CD>
<TITLE>One night only</TITLE>
<ARTIST>Bee Gees</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Polydor</COMPANY>
<PRICE>10.90</PRICE>
<YEAR>1998</YEAR>
</CD>
<CD>

```

```
<TITLE>Sylvias Mother</TITLE>
<ARTIST>Dr.Hook</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>CBS</COMPANY>
<PRICE>8.10</PRICE>
<YEAR>1973</YEAR>
</CD>
<CD>
<TITLE>Maggie May</TITLE>
<ARTIST>Rod Stewart</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Pickwick</COMPANY>
<PRICE>8.50</PRICE>
<YEAR>1990</YEAR>
</CD>
<CD>
<TITLE>Romanza</TITLE>
<ARTIST>Andrea Bocelli</ARTIST>
<COUNTRY>EU</COUNTRY>
<COMPANY>Polydor</COMPANY>
<PRICE>10.80</PRICE>
<YEAR>1996</YEAR>
</CD>
<CD>
<TITLE>When a man loves a woman</TITLE>
<ARTIST>Percy Sledge</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>Atlantic</COMPANY>
<PRICE>8.70</PRICE>
<YEAR>1987</YEAR>
</CD>
<CD>
<TITLE>Black angel</TITLE>
<ARTIST>Savage Rose</ARTIST>
<COUNTRY>EU</COUNTRY>
<COMPANY>Mega</COMPANY>
<PRICE>10.90</PRICE>
<YEAR>1995</YEAR>
</CD>
<CD>
<TITLE>1999 Grammy Nominees</TITLE>
<ARTIST>Many</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>Grammy</COMPANY>
<PRICE>10.20</PRICE>
<YEAR>1999</YEAR>
</CD>
<CD>
<TITLE>For the good times</TITLE>
<ARTIST>Kenny Rogers</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Mucik Master</COMPANY>
<PRICE>8.70</PRICE>
<YEAR>1995</YEAR>
</CD>
<CD>
<TITLE>Big Willie style</TITLE>
<ARTIST>Will Smith</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>Columbia</COMPANY>
<PRICE>9.90</PRICE>
```

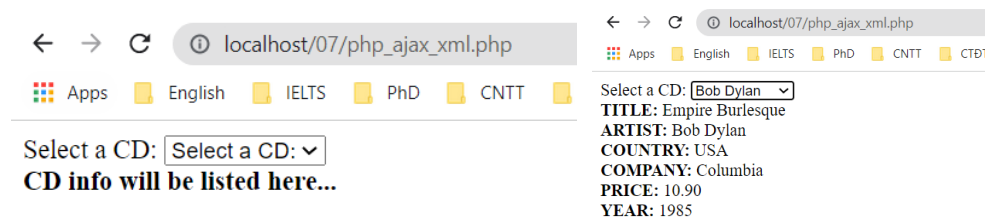
```
<YEAR>1997</YEAR>
</CD>
<CD>
<TITLE>Tupelo Honey</TITLE>
<ARTIST>Van Morrison</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Polydor</COMPANY>
<PRICE>8.20</PRICE>
<YEAR>1971</YEAR>
</CD>
<CD>
<TITLE>Soulsville</TITLE>
<ARTIST>Jorn Hoel</ARTIST>
<COUNTRY>Norway</COUNTRY>
<COMPANY>WEA</COMPANY>
<PRICE>7.90</PRICE>
<YEAR>1996</YEAR>
</CD>
<CD>
<TITLE>The very best of</TITLE>
<ARTIST>Cat Stevens</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Island</COMPANY>
<PRICE>8.90</PRICE>
<YEAR>1990</YEAR>
</CD>
<CD>
<TITLE>Stop</TITLE>
<ARTIST>Sam Brown</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>A and M</COMPANY>
<PRICE>8.90</PRICE>
<YEAR>1988</YEAR>
</CD>
<CD>
<TITLE>Bridge of Spies</TITLE>
<ARTIST>T'Pau</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Siren</COMPANY>
<PRICE>7.90</PRICE>
<YEAR>1987</YEAR>
</CD>
<CD>
<TITLE>Private Dancer</TITLE>
<ARTIST>Tina Turner</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>Capitol</COMPANY>
<PRICE>8.90</PRICE>
<YEAR>1983</YEAR>
</CD>
<CD>
<TITLE>Midt om natten</TITLE>
<ARTIST>Kim Larsen</ARTIST>
<COUNTRY>EU</COUNTRY>
<COMPANY>Medley</COMPANY>
<PRICE>7.80</PRICE>
<YEAR>1983</YEAR>
</CD>
<CD>
<TITLE>Pavarotti Gala Concert</TITLE>
<ARTIST>Luciano Pavarotti</ARTIST>
```

```

<COUNTRY>UK</COUNTRY>
<COMPANY>DECCA</COMPANY>
<PRICE>9.90</PRICE>
<YEAR>1991</YEAR>
</CD>
<CD>
<TITLE>The dock of the bay</TITLE>
<ARTIST>Otis Redding</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>Stax Records</COMPANY>
<PRICE>7.90</PRICE>
<YEAR>1968</YEAR>
</CD>
<CD>
<TITLE>Picture book</TITLE>
<ARTIST>Simply Red</ARTIST>
<COUNTRY>EU</COUNTRY>
<COMPANY>Elektra</COMPANY>
<PRICE>7.20</PRICE>
<YEAR>1985</YEAR>
</CD>
<CD>
<TITLE>Red</TITLE>
<ARTIST>The Communards</ARTIST>
<COUNTRY>UK</COUNTRY>
<COMPANY>London</COMPANY>
<PRICE>7.80</PRICE>
<YEAR>1987</YEAR>
</CD>
<CD>
<TITLE>Unchain my heart</TITLE>
<ARTIST>Joe Cocker</ARTIST>
<COUNTRY>USA</COUNTRY>
<COMPANY>EMI</COMPANY>
<PRICE>8.20</PRICE>
<YEAR>1987</YEAR>
</CD>
</CATALOG>

```

Output in Chrome:



4. Write a PHP program to illustrate ajax in php and get data from database.

make a table named in ajax_demo database look like:

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

database.php:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <script>
    function showUser(str) {
      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>
```

getuser.php:

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <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']);
    $con = new mysqli('localhost','root','','ajax_demo');
    if (!$con) {
        die('Could not connect: ' . mysqli_error($con));
    }
    $sql = '';
    if($q == '0'){
        $sql="SELECT * FROM user";
    }
    else{
        $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>

```

4. Write a PHP program to illustrate ajax live search in php.

php_ajax_Livesearch.php:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <script>
        function showResult(str) {
            if (str.length==0) {
                document.getElementById("livesearch").innerHTML="";
                document.getElementById("livesearch").style.border="0px";
                return;
            }
            var xmlhttp=new XMLHttpRequest();
            xmlhttp.onreadystatechange=function() {
                if (this.readyState==4 && this.status==200) {
                    document.getElementById("livesearch").innerHTML=this.responseText;
                    document.getElementById("livesearch").style.border="1px solid #A5ACB2";
                }
            }
            xmlhttp.open("GET","livesearch.php?q="+str,true);
            xmlhttp.send();
        }
    </script>
</head>
<body>
    <form>
        <input type="text" size="30" onkeyup="showResult(this.value)">
        <div id="livesearch"></div>
    </form>
</body>
</html>
```

Livesearch.php:

```
<?php
$xmlDoc=new DOMDocument();
$xmlDoc->load("links.xml");

$x=$xmlDoc->getElementsByTagName('link');

//get the q parameter from URL
$q=$_GET["q"];

//lookup all links from the xml file if length of q>0
if (strlen($q)>0) {
    $hint="";
    for($i=0; $i<($x->length); $i++) {
        $y=$x->item($i)->getElementsByTagName('title');
        $z=$x->item($i)->getElementsByTagName('url');
        if ($y->item(0)->nodeType==1) {
            //find a link matching the search text
            if (strstr($y->item(0)->childNodes->item(0)->nodeValue,$q)) {
                if ($hint=="") {
                    $hint="<a href='" .
                        $z->item(0)->childNodes->item(0)->nodeValue .
```

```

        "' target='_blank'>" .
        $y->item(0)->childNodes->item(0)->nodeValue . "</a>";
    } else {
        $hint=$hint . "<br /><a href='" .
        $z->item(0)->childNodes->item(0)->nodeValue .
        "' target='_blank'>" .
        $y->item(0)->childNodes->item(0)->nodeValue . "</a>";
    }
}
}
}
}

// Set output to "no suggestion" if no hint was found
// or to the correct values
if ($hint=="") {
    $response="no suggestion";
} else {
    $response=$hint;
}

//output the response
echo $response;
?>

```

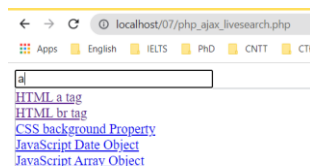
Livesearch.xml:

```

<pages>
<link>
<title>HTML a tag</title>
<url>https://www.w3schools.com/tags/tag_a.asp</url>
</link>
<link>
<title>HTML br tag</title>
<url>https://www.w3schools.com/tags/tag_br.asp</url>
</link>
<link>
<title>CSS background Property</title>
<url>https://www.w3schools.com/cssref/css3_pr_background.asp</url>
</link>
<link>
<title>CSS border Property</title>
<url>https://www.w3schools.com/cssref/pr_border.asp</url>
</link>
<link>
<title>JavaScript Date Object</title>
<url>https://www.w3schools.com/jsref/jsref_obj_date.asp</url>
</link>
<link>
<title>JavaScript Array Object</title>
<url>https://www.w3schools.com/jsref/jsref_obj_array.asp</url>
</link>
</pages>

```

Output:



5. Write a PHP program to illustrate ajax poll in php.

poll.php:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <script>
    function getVote(int) {
      var xmlhttp=new XMLHttpRequest();
      xmlhttp.onreadystatechange=function() {
        if (this.readyState==4 && this.status==200) {
          document.getElementById("poll").innerHTML=this.responseText;
        }
      }
      xmlhttp.open("GET","poll_vote.php?vote="+int,true);
      xmlhttp.send();
    }
  </script>
</head>
<body>
  <div id="poll">
    <h3>Do you like PHP and AJAX so far?</h3>
    <form>
      Yes: <input type="radio" name="vote" value="0" onclick="getVote(this.value)"><br>
      No: <input type="radio" name="vote" value="1" onclick="getVote(this.value)">
    </form>
  </div>
</body>
</html>
```

poll_vote.php:

```
<?php
$vote = $_REQUEST['vote'];

//get content of textfile
$filename = "poll_result.txt";
$content = file($filename);

//put content in array
$array = explode("||", $content[0]);
$yes = $array[0];
$no = $array[1];

if ($vote == 0) {
  $yes = $yes + 1;
}
if ($vote == 1) {
  $no = $no + 1;
}

//insert votes to txt file
$insertvote = $yes."||".$no;
$fp = fopen($filename,"w");
fputs($fp,$insertvote);
fclose($fp);
```

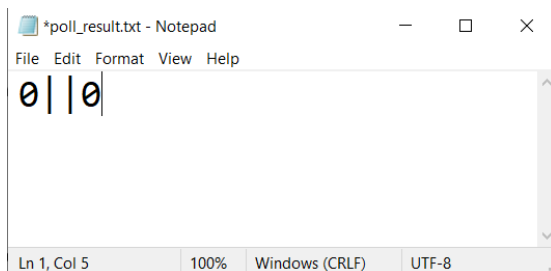
```
?>
```

```
<h2>Result:</h2>
<table>
<tr>
<td>Yes:</td>
<td>'
height='20'>
<?php echo(100*round($yes/($no+$yes),2)); ?>%
</td>
</tr>
<tr>
<td>No:</td>
<td>'
height='20'>
<?php echo(100*round($no/($no+$yes),2)); ?>%
</td>
</tr>
</table>
```

poll.gif:



poll_result.txt:



Output:



IV. Bài tập

Bài tập 1: Sử dụng AJAX, xây dựng chức năng tính toán với các phép cộng, trừ, nhân, chia.

Sinh viên tham khảo video như sau:

<https://www.youtube.com/watch?v=FNzWlbqjIZI>

Bài tập 2: Sử dụng AJAX, cải tiến một số phương thức tải dữ liệu trong website bán sữa ở Lab 5.

Bài tập 3: *Để thành thạo trong ứng dụng web, sinh viên tìm hiểu thêm về thư viện AJAX jQuery như trong link sau:

<https://freetuts.net/hoc-php/hoc-ajax>

--Hết--