

Lab. 09

Database Programming with PHP

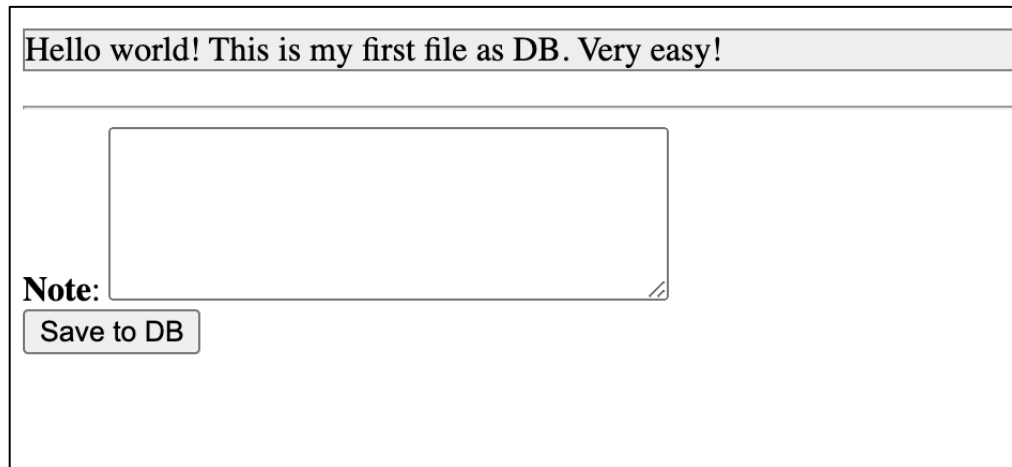
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Content

1. Files as a Database
2. Connect to MySQL via PHP
3. Add data from PHP to MySQL
4. Retrieve data using PHP
5. Delete data from MySQL via PHP
6. Update data from MySQL via PHP

Files as a Database

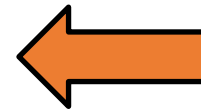
- One of the simplest form of database



Hello world! This is my first file as DB. Very easy!

Note:

Save to DB



```
1 Hello world!  
2 This is my first file as DB.  
3 Very easy!
```

Files as a Database (Contd.)

fopen - opens a file or URL (r: read only, r+: read/write, w: writes only, w+: read/write and makes a new file if there is none, check **a** and **a+**).

feof - checks if the "end-of-file" (EOF) has been reached for an open file.

fgets - returns a line from an open file.

fclose - closes an open file.

```
<?php
$file = fopen("Web_dev.txt","r");
while(! feof($file))
{
    echo fgets($file). "<br />";
}
fclose($file);
?>
```

AJAX = Asynchronous JavaScript and XML
CSS = Cascading Style Sheets
HTML = Hyper Text Markup Language
PHP = PHP Hypertext Preprocessor
NoSQL = Non-SQL (non-relational)
ORACLE = Oracle DBMS
SQL = Structured Query Language
SVG = Scalable Vector Graphics
XML = EXtensible Markup Language

Files as a Database (Contd.)

```

1  <?php
2      if (isset($_POST["submit"])) {
3          $file = fopen("mydb.txt", "w");
4          fwrite($file, $_POST['note']);
5          fclose($file);
6      }
7  ?>
8
9  <!DOCTYPE html>
10 <html>
11     <head>
12         <title>Simple File DB</title>
13     </head>
14     <body>
15         <p style="border:solid 1px gray;background-color:#EEEEEE">
16             <?php
17                 readfile("mydb.txt");
18             ?>
19         </p>
20         <hr/>
21         <form action="simple_filedb.php" method="POST">
22             <b>Note</b>: <textarea name="note" cols="30" rows="5"></textarea> <br>
23             <input type="submit" value="Save to DB" name="submit">
24         </form>
25     </body>
26 </html>

```

Hello world! This is my first file as DB. Very easy!

Change me!

Note:

Save to DB

POST note=Change me!

Week_3 > mydb.txt
1 Change me!

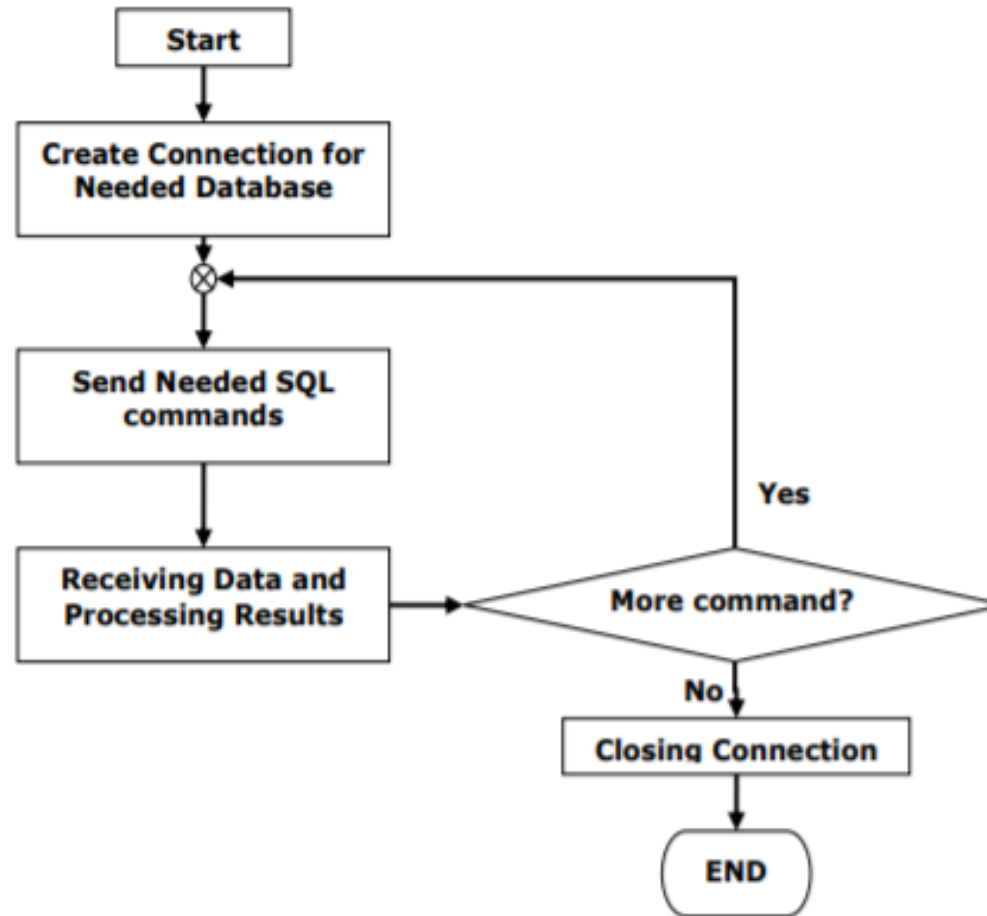
Change me!

Note:

Save to DB

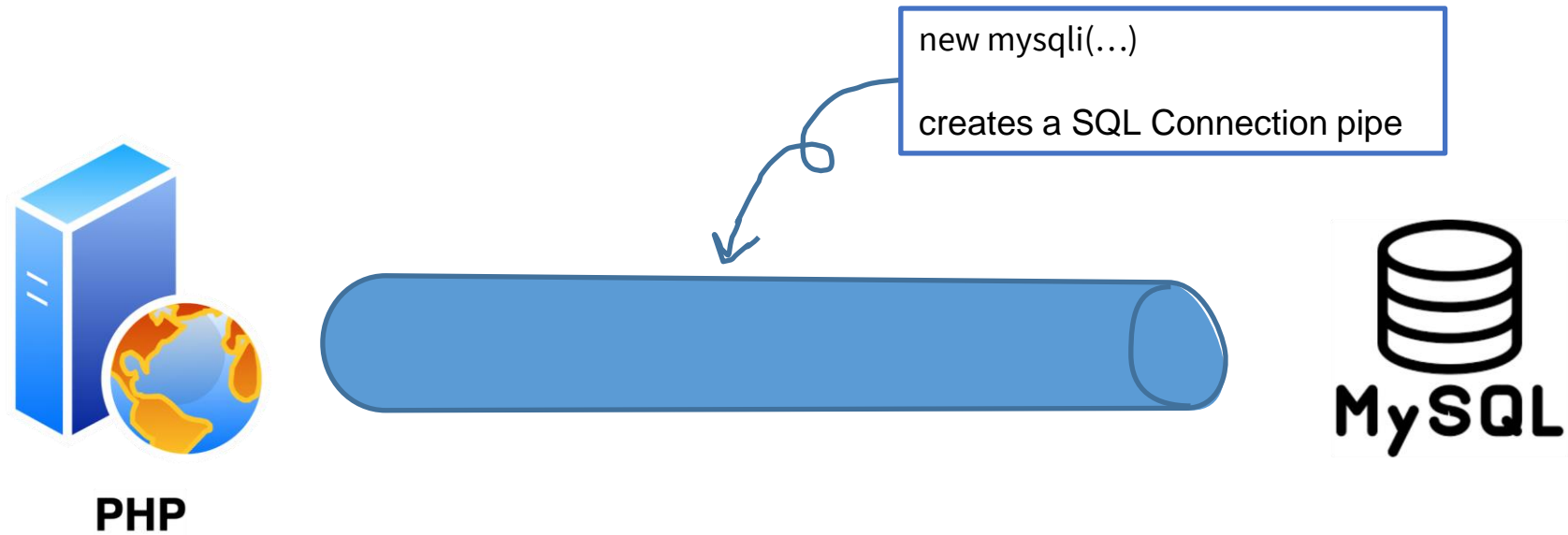
Connect to MySQL via PHP

Open a connection



Connect to MySQL via PHP

Open a connection



Connect to MySQL via PHP (Contd.)

Open a connection

```
<?php
// In some cases, 127.0.0.1 may be needed instead of localhost
$mysqli = new mysqli('localhost','user','password','dbname');
if($mysqli->connect_errno){
echo $mysqli->connect_errno."": ".$mysqli->connect_error;
}
// All subsequent queries are done through $mysqli object.
// ...
$mysqli->close();
?>
```


Connect to MySQL via PHP (Contd.)

Send Queries to MySQL

```
<?php
    $mysqli = new mysqli('localhost','user','password','dbname');
    if($mysqli->connect_errno){
        echo $mysqli->connect_errno." : ".$mysqli->connect_error;
    }













    $q='CREATE table product(p_id int unsigned not null auto_increment
primary key, p_name varchar(30), p_price int)';
    if($mysqli->query($q)){
        echo 'CREATE was successful.';
    }else{
        Echo 'CREATE failed. Error: '.$mysqli->error ;
    }

?>
```

Add data from PHP to MySQL

Send Queries to MySQL (contd.)

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$recs=array(
    array('Pencil',10),array('Eraser',5),
    array('Mouse',600),array('Printer',4000)
);
foreach($recs as $r){
    $q="INSERT INTO product(p_name, p_price) VALUES('$r[0]', $r[1])";
    if(!$mysqli->query($q)){
        echo "INSERT failed. Error: ".$mysqli->error ;
        break;
    }
}
?>
```

| + Options | | | | p_id | p_name | p_price |
|--------------------------|--|--|--|------|---------|---------|
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 1 | Pencil | 10 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 2 | Eraser | 5 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 3 | Mouse | 600 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 4 | Printer | 4000 |

Retrieve data using PHP

Retrieve result sets from MySQL

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
if($result=$mysqli->query('show tables')){
    while($row=$result->fetch_array()){
        echo$row[0]. '<br>';
    }
    $result->free();
}else{
    echo "Retrieval failed";
}
?>
```

advisor
instructor
product
student

Retrieve data using PHP (Contd.)

Display result sets in a table

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno.": ".$mysqli->connect_error;
}
$q="select p_name, p_price from product where p_price> 100; ";
if($result=$mysqli->query($q)){
    echo '<table border="1">';
    echo '<tr><th>Name</th><th>Price</th></tr>';
    while($row=$result->fetch_array()){
        echo "<tr>";
        echo "<td>".$row['p_name']. "</td>";
        echo "<td>".$row['p_price']. "</td>";
        echo "</tr>";
    }
    Echo '</table>';
    $result->free();
} else {
    Echo "Retrieval failed: ".$mysqli->error ;
}
?>
```

| Name | Price |
|---------|-------|
| Mouse | 600 |
| Printer | 4000 |

Retrieve data using PHP (Contd.)

Get the Number of rows

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$q="select p_id from product where p_name like 'P%'; ";
if($result=$mysqli->query($q)){
    $count=$result->num_rows;
    Echo "There are $count products starting with P.";
    $result->free();
}else{
    Echo "Query failed: ".$mysqli->error ;
}
?>
```

There are 2 products starting with P.

Retrieve data using PHP (Contd.)

Get the Number of columns

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$q="select * from Product limit 1;";
if($result=$mysqli->query($q)){
    $count=$result->field_count;
    Echo "There are $count columns.";
    $result->free();
}else{
    Echo "Query failed: ".$mysqli->error ;
}
?>
```

There are 3 columns.

Retrieve data using PHP (Contd.)

Seek a row in the result set

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$q='select p_name, p_price from product order by p_price limit 3;';
if($result=$mysqli->query($q)){
    // Seek to the third row (row index starts from 0)
    $result->data_seek(2);
    $row=$result->fetch_array();
    Echo $row['p_name']." has the third lowest price which is 
    ".$row['p_price'];
    $result->free();
}else{
    Echo "Query failed: ".$mysqli->error;
}
?>
```

Mouse has the third lowest price which is 600

Retrieve data using PHP (Contd.)

Properly escape query strings

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno.": ".$mysqli->connect_error;
}
$r=array("Idiot's Guide Book",1200);
$q="INSERT INTO product(p_name, p_price) VALUES('$r[0]', $r[1])";
if(!$mysqli->query($q)){
    echo "INSERT failed. Error: ".$mysqli->error ;
}
?>
```
















INSERT failed. Error: You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 's Guide Book', 1200)' at line 1

Retrieve data using PHP (Contd.)

Properly escape query strings (contd.)

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$r=array("Idiot's Guide Book",1200);
// $q="INSERT INTO product(p_name, p_price) VALUES('$r[0]', $r[1])";
$q="INSERT INTO product(p_name, p_price)
VALUES('".$mysqli->real_escape_string($r[0])."', $r[1])";

if(!$mysqli->query($q)){
echo "INSERT failed. Error: ".$mysqli->error ;
}
?>
```

| + Options | | | | p_id | p_name | p_price |
|--------------------------|--|--|--|------|--------------------|---------|
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 1 | Pencil | 10 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 2 | Eraser | 5 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 3 | Mouse | 600 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 4 | Printer | 4000 |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 5 | Idiot's Guide Book | 1200 |

Retrieve data using PHP (Contd.)

Return ID from insertion

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$r=array("Idiot's Guide Book",1200);
$q="INSERT INTO product(p_name, p_price)
VALUES('".$mysqli->real_escape_string($r[0])."', $r[1])";
if(!$mysqli->query($q)){
echo "INSERT failed. Error: ".$mysqli->error ;
}
$id = $mysqli->insert_id;
echo "Record $id is inserted";
?>
```

+ Options

| | | | | p_id | p_name | p_price |
|--------------------------|------|------|--------|------|--------------------|---------|
| <input type="checkbox"/> | Edit | Copy | Delete | 1 | Pencil | 10 |
| <input type="checkbox"/> | Edit | Copy | Delete | 2 | Eraser | 5 |
| <input type="checkbox"/> | Edit | Copy | Delete | 3 | Mouse | 600 |
| <input type="checkbox"/> | Edit | Copy | Delete | 4 | Printer | 4000 |
| <input type="checkbox"/> | Edit | Copy | Delete | 5 | Idiot's Guide Book | 1200 |
| <input type="checkbox"/> | Edit | Copy | Delete | 6 | Idiot's Guide Book | 1200 |

Record 6 is inserted
















Delete data from MySQL via PHP

Syntax and Delete an existing record

```
DELETE FROM table_name
WHERE some_column=some_value
```

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$q="DELETE FROM product where p_id=5";
if(!$mysqli->query($q)){
echo "DELETE failed. Error: ".$mysqli->error ;
}
?>
```

+ Options

| | | | | p_id | p_name | p_price |
|--------------------------|---|------|---|------|--------------------|---------|
| <input type="checkbox"/> |  | Edit |  Copy  Delete | 1 | Pencil | 10 |
| <input type="checkbox"/> |  | Edit |  Copy  Delete | 2 | Eraser | 5 |
| <input type="checkbox"/> |  | Edit |  Copy  Delete | 3 | Mouse | 600 |
| <input type="checkbox"/> |  | Edit |  Copy  Delete | 4 | Printer | 4000 |
| <input type="checkbox"/> |  | Edit |  Copy  Delete | 6 | Idiot's Guide Book | 1200 |

Delete data from MySQL via PHP

(Contd.)

Delete via form in PHP (viewinfo.php)

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$q="select * from product";
if($result=$mysqli->query($q)){
echo '<table border="1">';
echo '<tr><th>Name</th><th>Price</th><th>Delete</th></tr>';
while($row=$result->fetch_array()){
echo "<tr>";
echo "<td>".$row['p_name']. "</td>";
echo "<td>".$row['p_price']. "</td>";
echo "<td><a href='delinfo.php?id="
.$row['p_id']."'> Delete</a></td>";
echo "</tr>";
}
echo '</table>';
$result->free();
}else{
echo "Retrieval failed: ".$mysqli->error ;
}
?>
```

| Name | Price | Delete |
|--------------------|-------|------------------------|
| Pencil | 10 | Delete |
| Eraser | 5 | Delete |
| Mouse | 600 | Delete |
| Printer | 4000 | Delete |
| Idiot's Guide Book | 1200 | Delete |













Delete data from MySQL via PHP

(Contd.)

Delete via form in PHP (delinfo.php)

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$p_id = $_GET['id'];
$mysqli = new mysqli('localhost','root','root','staff');
if($mysqli->connect_errno){
echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}
$q="DELETE FROM product where p_id=$p_id";
if(!$mysqli->query($q)){
echo "DELETE failed. Error: ".$mysqli->error ;
}
$mysqli->close();
//redirect
header("Location: viewinfo.php");
?>
```

| Name | Price | Delete |
|--------------------|-------|------------------------|
| Pencil | 10 | Delete |
| Mouse | 600 | Delete |
| Printer | 4000 | Delete |
| Idiot's Guide Book | 1200 | Delete |

| + Options | | | | p_id | p_name | p_price |
|--------------------------|---|------|---|------|---|---------|
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | | | | 1 | Pencil | 10 |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | | | | 3 | Mouse | 600 |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | | | | 4 | Printer | 4000 |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | | | | 6 | Idiot's Guide Book | 1200 |

Update data from MySQL via PHP

The syntax of updating













- The specified existing record will be deleted and replaced with the assigned value

```
UPDATE table_name  
SET column1=value, column2=value2,...  
WHERE some_column=some_value
```

Update data from MySQL via PHP













(Contd.)

Update an existing record in database

| | | | | p_id | p_name | p_price |
|--------------------------|---|---------|---|------|---|---------|
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 1 | Pencil | 10 | | | |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 2 | Eraser | 5 | | | |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 3 | Mouse | 600 | | | |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 4 | Printer | 4000 | | | |

```
<?php
$mysqli = new mysqli('localhost','root','','new');
if($mysqli->connect_errno){
    echo $mysqli->connect_errno." : ".$mysqli->connect_error;
}

$q="UPDATE product SET p_price=20 where p_id=1";
if(!$mysqli->query($q)){
    echo "UPDATE failed. Error: ".$mysqli->error ;
}
?>
```

| | | | | p_id | p_name | p_price |
|--------------------------|---|---------|---|------|---|---------|
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 1 | Pencil | 20 | | | |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 2 | Eraser | 5 | | | |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 3 | Mouse | 600 | | | |
| <input type="checkbox"/> |  | Edit |  | Copy |  | Delete |
| | 4 | Printer | 4000 | | | |

Update data from MySQL via PHP (Contd.)

Editing MYSQL data via form using PHP – Edit link

```
<?php
require_once('connect_1.php');
$q="select * from product";
if($result=$mysqli->query($q)){
echo '<table border="1">';
echo '<tr><th>ID</th><th>Name</th><th>Price</th><th>Edit</th></tr>';
while($row=$result->fetch_array()){
echo "<tr>";
echo "<td>".$row['p_id']. "</td>";
echo "<td>".$row['p_name']. "</td>";
echo "<td>".$row['p_price']. "</td>";
echo "<td><a href='practice_2edit.php?id="
.$row['p_id']."'> Edit</a></td>";
echo "</tr>";
}
echo '</table>';
$result->free();
}else{
echo "Retrieval failed: ".$mysqli->error ;
}
?>
```

| ID | Name | Price | Edit |
|----|---------|-------|----------------------|
| 1 | Pencil | 20 | Edit |
| 2 | Eraser | 5 | Edit |
| 3 | Mouse | 600 | Edit |
| 4 | Printer | 4000 | Edit |

Update data from MySQL via PHP (Contd.)

Editing MYSQL data via form using PHP – editing form

```
<?php
$p_id = $_GET['id'];
require_once('connect_1.php');
$q="SELECT * FROM product where p_id=$p_id";
$result = $mysqli->query($q);
echo "<form action='practice_2update.php' method='post'>";
while($row=$result->fetch_array()){
echo "Product ID: <input type=text name=id
value=" . $row['p_id'] . " Disabled><br>";
echo "<input type=hidden name=p_id value=" . $row['p_id'] . ">";
echo "Product Name: <input type=text name=p_name
value=" . $row['p_name'] . "><br>";
echo "Product Price: <input type=text name=p_price
value=" . $row['p_price'] . "><br>";
echo "<input type=submit value=submit>";
}
$mysqli->close();
?>
```

| | |
|---------------------------------------|-------------------------------------|
| Product ID: | <input type="text" value="1"/> |
| Product Name: | <input type="text" value="Pencil"/> |
| Product Price: | <input type="text" value="20"/> |
| <input type="submit" value="submit"/> | |

Update data from MySQL via PHP

(Contd.)

Editing MYSQL data via form using PHP – updating

```
<?php
require_once('connect_1.php');
$p_id = $_POST['p_id'];
$p_name = $_POST['p_name'];
$p_price = $_POST['p_price'];

$q="UPDATE product SET p_name='$p_name', p_price='$p_price'
where p_id=$p_id";
if(!$mysqli->query($q)){
echo "UPDATE failed. Error: ".$mysqli->error ;
}
$mysqli->close();
//redirect
header("Location: practice_2.php");
?>
```

Product ID:

Product Name:

Product Price:

| ID | Name | Price | Edit |
|----|-------------|-------|----------------------|
| 1 | Pencil case | 10 | Edit |
| 2 | Eraser | 5 | Edit |
| 3 | Mouse | 600 | Edit |
| 4 | Printer | 4000 | Edit |

Update data from MySQL via PHP

(Contd.)

Editing MYSQL data via form using PHP – combo box addition

| # | Name | Type | Collation | Attributes | Null | Default | Comments | Extra | Action |
|--------------------------|------|------------------|--------------------------------|------------|------|---------|----------|----------------|--------------------|
| <input type="checkbox"/> | 1 | p_type_ID | int(10) | UNSIGNED | No | None | | AUTO_INCREMENT | Change Drop More |
| <input type="checkbox"/> | 2 | p_type | varchar(25) utf8mb4_general_ci | | No | None | | | Change Drop More |

| T | | p_type_ID | p_type |
|--------------------------|--------------------|-----------|-------------|
| <input type="checkbox"/> | Edit Copy Delete | 1 | accessories |
| <input type="checkbox"/> | Edit Copy Delete | 2 | stationary |

| T | | p_id | p_name | p_price | p_type_ID |
|--------------------------|--------------------|------|-------------|---------|-----------|
| <input type="checkbox"/> | Edit Copy Delete | 1 | Pencil case | 10 | 2 |
| <input type="checkbox"/> | Edit Copy Delete | 2 | Eraser | 5 | 2 |
| <input type="checkbox"/> | Edit Copy Delete | 3 | Mouse | 600 | 1 |
| <input type="checkbox"/> | Edit Copy Delete | 4 | Printer | 4000 | 1 |

Update data from MySQL via PHP (Contd.)

Editing MYSQL data via form using PHP – combo box addition

```
<?php
require_once('connect_1.php');
$q="select * from product";
if($result=$mysqli->query($q)) {
echo '<table border="1">';
echo '<tr><th>ID</th><th>Name</th><th>Price</th><th>Product type</th><th>Edit</th></tr>';
while($row=$result->fetch_array()){
echo "<tr>";
echo "<td>".$row['p_id']. "</td>";
echo "<td>".$row['p_name']. "</td>";
echo "<td>".$row['p_price']. "</td>";
$q1="select * from product_type";
$result1=$mysqli->query($q1);
while($row1=$result1->fetch_array()){
if ($row1[0]==$row['p_type_ID']){
echo "<td>".$row1[1]. "</td>";
}
}
echo "<td><a href='practice_2edit.php?id="
.$row['p_id']."'> Edit</a></td>";
echo "</tr>";
}
echo '</table>';
$result->free();
}else{
echo "Retrieval failed: ".$mysqli->error ;
}
?>
```

| ID | Name | Price | Product type | Edit |
|----|---------|-------|--------------|----------------------|
| 1 | Pencil | 10 | stationary | Edit |
| 2 | Eraser | 5 | stationary | Edit |
| 3 | Mouse | 600 | accessories | Edit |
| 4 | Printer | 4000 | accessories | Edit |

Update data from MySQL via PHP

(Contd.)

Editing MYSQL data via form using PHP – combo box addition: edit page

```
<?php
$p_id = $_GET['p_id'];
require_once('connect_2.php');
$q3="SELECT * FROM product where p_id=$p_id ";
$result3 = $mysqli->query($q3);
echo "<form action='practice_3update.php' method='post'>";
while($row3=$result3->fetch_array()){
    echo "Product ID: <input type='text' name='id'
    value=".$row3['p_id']."' Disabled><br>";
    echo "<input type='hidden' name='p_id' value=".$row3['p_id']."'>";
    echo "Product Name: <input type='text' name='p_name'
    value=".$row3['p_name']."'><br>";
    echo "Product Price: <input type='text' name='p_price'
    value=".$row3['p_price']."'><br>";
    echo "Product Type: <select name='p_type'>";
    $q4="select p_type_ID, p_type from product_type;";
    if($result4=$mysqli->query($q4)){
        while($row4=$result4->fetch_array()){
            echo "<option value='".$row4[0]."' ";
            if ($row4[0] == $row3['p_type_ID'])
                echo " SELECTED ";
            echo ">".$row4[1]."</option>";
        }
    }else{
        echo 'Query error: '.$mysqli->error;
    }
    echo "</select><br>";
    echo "<input type='submit' name='sub' value='submit'>";
}
$result3->free();
$result4->free();
?>
```

Product ID: 1

Product Name: Pencil

Product Price: 10

Product Type: stationary ▼

submit

Update data from MySQL via PHP

(Contd.)

Editing MYSQL data via form using PHP – combo box addition: update page

```
<?php
require_once('connect_2.php');
if (isset($_POST['sub'])){
    $p_id = $_POST['p_id'];
    $p_name = $_POST['p_name1'];
    $p_price = $_POST['p_price1'];
    $p_type = $_POST['p_type1'];
    $q="UPDATE product SET p_name='$p_name', p_price='$p_price',p_type_ID='$p_type' where p_id=$p_id";
    if (!$mysqli->query($q)){
        echo "UPDATE failed. Error: ".$mysqli->error ;
    }
}
//redirect
header("Location: practice_3.php");
?>
```

Product ID:

Product Name:

Product Price:

Product Type:

| ID | Name | Price | Product type | Edit |
|----|---------|-------|--------------|----------------------|
| 1 | Pen | 20 | stationary | Edit |
| 2 | Eraser | 5 | stationary | Edit |
| 3 | Mouse | 600 | accessories | Edit |
| 4 | Printer | 4000 | accessories | Edit |

Thank you & Assignment time...