

Working with Databases:

PHP 5 and later can work with a MySQL database using:

- **MySQLi extension** (the "i" stands for improved)
- **PDO (PHP Data Objects)**

Earlier versions of PHP used the MySQL extension. However, this extension was deprecated in PHP 5.5.0, and it was removed in PHP 7.0. PDO will work on 12 different database systems, whereas MySQLi will only work with MySQL databases.

Open a Connection to MySQL

PHP **mysqli_connect()** function is used to connect with MySQL database. It returns *resource* if connection is established or *null*.

Example(Procedural)

```
1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $conn = mysqli_connect($host, $user, $pass);
6. if(! $conn )
7. {
8.     die('Could not connect: ' . mysqli_connect_error());
9. }
10. echo 'Connected successfully';
11. mysqli_close($conn);
12. ?>
```

Output:

```
Connected successfully
```

Example (PDO)

```
<?php
$servername = "localhost";
$username = "username";
$password = "password";

try {
    $conn = new PDO("mysql:host=$servername;dbname=DS", $username, $password);
    // set the PDO error mode to exception
    $conn->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
```

```

        echo "Connected successfully";
    }
catch(PDOException $e)
    {
        echo "Connection failed: " . $e->getMessage();
    }
?>

```

We also **specified a database (DS)**. PDO require a valid database to connect to. If no database is specified, an exception is thrown.

MySQL Create DB

Since **mysql_create_db()** function is *deprecated*. Now it is recommended to use one of the 2 alternatives.

- **mysqli_query()**
- **PDO::__query()**

Example

```

1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $conn = mysqli_connect($host, $user, $pass);
6. if(! $conn )
7. {
8.     die('Could not connect: ' . mysqli_connect_error());
9. }
10. echo 'Connected successfully<br/>';
11. $sql = 'CREATE Database DS';
12. if(mysqli_query( $conn,$sql)){
13.     echo "Database DS created successfully.";
14. }else{
15. echo "Sorry, database creation failed ".mysqli_error($conn);
16. }
17. mysqli_close($conn);
18. ?>

```

Output:

```

Connected successfully
Database DS created successfully.

```

MySQL Create Table

Example

```
1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $dbname = 'DS';
6. $conn = mysqli_connect($host, $user, $pass,$dbname);
7. if(!$conn){
8.     die('Could not connect: '.mysqli_connect_error());
9. }
10. echo 'Connected successfully<br/>';
11. $sql = "create table empHR(id INT,name VARCHAR(30) NOT NULL,
12. emp_salary INT NOT NULL,primary key (id))";
13. if(mysqli_query($conn, $sql)){
14. echo "Table empHR created successfully";
15. }else{
16. echo "Could not create table: ". mysqli_error($conn);
17. }
18. mysqli_close($conn);
19. ?>
```

Output:

```
Connected successfully
Table empHR created successfully
```

MySQL Insert Record

Example

```
1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $dbname = 'DS';
6. $conn = mysqli_connect($host, $user, $pass,$dbname);
7. if(!$conn){
8.     die('Could not connect: '.mysqli_connect_error());
9. }
10. echo 'Connected successfully<br/>';
11. $sql = 'INSERT INTO empHR(id,name,salary) VALUES (512,"XYZ", 9000)';
12. if(mysqli_query($conn, $sql)){
```

```
13. echo "Record inserted successfully";
14. }else{
15. echo "Could not insert record: ". mysqli_error($conn);
16. }
17. mysqli_close($conn);
18. ?>
```

Output:

```
Connected successfully
Record inserted successfully
```

MySQL Update Record

Example

```
1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $dbname = 'DS';
6. $conn = mysqli_connect($host, $user, $pass,$dbname);
7. if(!$conn){
8.     die('Could not connect: '.mysqli_connect_error());
9. }
10. echo 'Connected successfully<br/>';
11. $id=512;
12. $name="ABC";
13. $salary=12000;
14. $sql = "update empHR set name=\"".$name\"", salary=$salary where id=$id";
15. if(mysqli_query($conn, $sql)){
16.     echo "Record updated successfully";
17. }else{
18.     echo "Could not update record: ". mysqli_error($conn);
19. }
20. mysqli_close($conn);
21. ?>
```

Output:

```
Connected successfully
Record updated successfully
```

MySQL Delete Record

Example

```

1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $dbname = 'DS';
6. $conn = mysqli_connect($host, $user, $pass,$dbname);
7. if(!$conn){
8.     die('Could not connect: '.mysqli_connect_error());
9. }
10. echo 'Connected successfully<br/>';
11. $id=512;
12. $sql = "delete from empHR where id=$id";
13. if(mysqli_query($conn, $sql)){
14. echo "Record deleted successfully";
15. }else{
16. echo "Could not deleted record: ". mysqli_error($conn);
17. }
18. mysqli_close($conn);
19. ?>

```

Output:

```

Connected successfully
Record deleted successfully

```

MySQL Select Query

There are two other MySQLi functions used in select query.

- **mysqli_num_rows(mysqli_result \$result)**: returns number of rows.
- **mysqli_fetch_assoc(mysqli_result \$result)**: returns row as an associative array. Each key of the array represents the column name of the table. It return NULL if there are no more rows.

Example

```

1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $dbname = 'DS';
6. $conn = mysqli_connect($host, $user, $pass,$dbname);
7. if(!$conn){
8.     die('Could not connect: '.mysqli_connect_error());

```

```

9. }
10. echo 'Connected successfully<br/>';
11. $sql = 'SELECT * FROM empHR';
12. $retval=mysqli_query($conn, $sql);
13. if(mysqli_num_rows($retval) > 0){
14.   while($row = mysqli_fetch_assoc($retval)){
15.     echo "EMP ID :{$row['id']} <br> ".
16.         "EMP NAME : {$row['name']} <br> ".
17.         "EMP SALARY : {$row['salary']} <br> ".
18.         "-----<br>";
19.   }
20. }else{
21. echo "0 results";
22. }
23. mysqli_close($conn);
24. ?>

```

Output:

```

Connected successfully
EMP ID :56
EMP NAME : ABC
EMP SALARY : 15000
-----
EMP ID :128
EMP NAME : XYZ
EMP SALARY : 25000
-----

```

MySQL Order By

The order by clause is used to fetch data in ascending order or descending order on the basis of column. For descending order use **desc**.

Example

```

1. <?php
2. $host = 'localhost';
3. $user = 'username';
4. $pass = 'password';
5. $dbname = 'DS';
6. $conn = mysqli_connect($host, $user, $pass,$dbname);
7. if(!$conn){
8.   die('Could not connect: '.mysqli_connect_error());
9. }
10. echo 'Connected successfully<br/>';

```

```
11. $sql = 'SELECT * FROM empHR order by name desc';
12. $retval=mysqli_query($conn, $sql);
13. if(mysqli_num_rows($retval) > 0){
14.     while($row = mysqli_fetch_assoc($retval)){
15.         echo "EMP ID :{$row['id']} <br> ".
16.             "EMP NAME : {$row['name']} <br> ".
17.             "EMP SALARY : {$row['salary']} <br> ".
18.             "-----<br>";
19.     }
20. }else{
21.     echo "0 results";
22. }
23. mysqli_close($conn);
24. ?>
```

Output:

```
Connected successfully
EMP ID :128
EMP NAME : XYZ
EMP SALARY : 25000
-----
EMP ID :56
EMP NAME : ABC
EMP SALARY : 15000
-----
```

References:

<https://www.php.net/manual/en/function.mysql-connect.php>

https://www.w3schools.com/php/php_mysql_connect.asp

<https://www.javatpoint.com/php-tutorial>