G51DBI

PHP (3)
Databases

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PHP - Database Communication

- ❑ **PHP has two sets of extensions to handle databases:**
  - ❑ **MySQLi (MySQL improved extensions)**
  - ❑ **PDO (PHP Data Objects)**

- ❑ **MySQLi only works with MySQL (and MariaDB)**

- ❑ **PDO works with all major databases**

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mysqli_connect() function

- ❑ **Opens a new connection to a MySQL server**

- ❑ **Object Oriented equivalent**
  - ❑ **mysqli::__construct()**

- ❑ **Syntax:**
  ```
  mysqli_connect(host,username,password,dbname,port,socket);
  ```

- ❑ **Returns an object representing the connection**

- ❑ **Usually used in an assignment:**
  ```
  $conn=mysqli_connect($servername,$username,$password,$dbname);
  ```

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mysqli_connect_errno() Function

- ❑ **Returns an error code from the last connection (or zero if no error)**

- ❑ **mysqli_connect_error() returns a string containing a description of the problem**

- ❑ **Examples:**
  - ❑ **2049 is an unknown database**
  - ❑ **1045 is a bad password**

- ❑ **Object Oriented equivalent**
  - ❑ **$mysqli->connect_errno / $mysqli->$connect_error**

- ❑ **It is good practice to use this to check that your connection is OK and diagnose problems**

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mysqli_sqlstate() Function

- ❑ **Reports what happened to the last SQL query executed by the server**

- ❑ **String containing a 5 character error code**

- ❑ **Examples:**
  - ❑ **00000 - query worked**
  - ❑ **42S02 - unknown table**
  - ❑ **42S02 - unknown column**
  - ❑ **42000 - SQL syntax error**

- ❑ **Object Oriented equivalent**
  - ❑ **$mysqli->sqlstate**

- ❑ **Look up codes in the MySQL documentation or google them!**

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mysqli_query() function

- ❑ **Submits an SQL query string to the database**

- ❑ **Object Oriented equivalent:**
  - ❑ **$mysqli->query()**

- ❑ **Syntax:**
  ```
  $result = mysqli_query($conn, $sql);
  ```

- ❑ **Returns an associative array containing the result**

- ❑ **Returns FALSE if the query fails**

Loop through results array

❑ **Use foreach to loop through results array**

❑ **Each row is itself an associative array**

```
$result = mysqli_query($conn, $sql);

foreach ($result as $row) {

  $thisItem = $row['columnName'];
  ...

}
```

mysqli_fetch_assoc() function

❑ **Fetches an associative array from the results containing a single row**

❑ **Object Oriented equivalent:**

  ❑ **$mysqli->fetch_assoc()**

❑ **Syntax:**

```
$row1 = mysqli_fetch_assoc($result);
$row2 = mysqli_fetch_assoc($result);
$row3 = mysqli_fetch_assoc($result);
```

mysqli_num_rows() function

❑ **Returns the number of rows resulting from a query**

❑ **Object Oriented equivalent:**

  ❑ **$mysqli->num_rows()**

❑ **Syntax:**

```
$no_rows = num_rows($result);
```

mysqli_close() function

❑ **Closes a previously open database connection**

❑ **Object Oriented equivalent:**

  ❑ **$mysqli->close()**

❑ **Syntax:**

```
mysqli_close($conn);
```

❑ **Not essential, because the connection is closed when the script end**

❑ **Good practice, and might be important if the script is slow**

Demonstrations