P PHP
TUTORIAL

PHP PDO MySQL

Summary: in this tutorial, you will learn how to create a new sample database in MySQL for practicing with PDO.

Creating a database

First, log in to the MySQL database using the `root` user from the Command Prompt on Windows or Terminal on macOS and Linux:

```
mysql -u root
```

And you'll prompt for a password; enter the password for the `root` user and you're connected to the MySQL Server.

Next, create the `bookdb` database by executing the following `CREATE DATABASE` (https://www.mysqltutorial.org/mysql-create-database/) statement:

```
CREATE DATABASE IF NOT EXISTS bookdb;
```

Then, select (https://www.mysqltutorial.org/mysql-select-database/) to the `bookdb` database:

```
USE bookdb;
```

After that, execute the following `CREATE TABLE` (https://www.mysqltutorial.org/mysql-create-database/) statement to create the `publishers` table:

```
CREATE TABLE IF NOT EXISTS publishers (
    publisher_id INT AUTO_INCREMENT,
    name VARCHAR(255) NOT NULL,
```

```
    PRIMARY KEY (publisher_id)
);
```

Finally, execute the following `CREATE TABLE` statement to create the `books` table:

```
CREATE TABLE IF NOT EXISTS books (
    book_id INT AUTO_INCREMENT,
    title VARCHAR(255) NOT NULL,
    isbn VARCHAR(13) NULL,
    published_date DATE NULL,
    publisher_id INT NULL,
    PRIMARY KEY (book_id),
    CONSTRAINT fk_publisher FOREIGN KEY (publisher_id)
        REFERENCES publishers (publisher_id)
);
```

Connecting to the bookdb database from PHP

First, create a `config.php` file to store the database parameters:

```php
<?php

$host     = 'localhost';
$db       = 'bookdb';
$user     = 'root';
$password = '';
```

Second, create a new `connect.php` file that connects to the `bookdb` database:

```php
<?php

require 'config.php';

$dsn = "mysql:host=$host;dbname=$db;charset=UTF8";
```

```php
    try {

            $options = [PDO::ATTR_ERRMODE => PDO::ERRMODE_EXCEPTION];


            $conn = new PDO($dsn, $user, $password, $options);


            if ($conn) {

                    echo "Connected to the $db database successfully!";

            }
    } catch (PDOException $e) {

            echo $e->getMessage();

    }
```

To make it more reusable, you can define a function called `connect()` that returns a new database connection and return it from the `connect.php` file:

```php
<?php


require_once 'config.php';


function connect($host, $db, $user, $password)
{

        $dsn = "mysql:host=$host;dbname=$db;charset=UTF8";


        try {

                $options = [PDO::ATTR_ERRMODE => PDO::ERRMODE_EXCEPTION];


                return new PDO($dsn, $user, $password, $options);
        } catch (PDOException $e) {

                die($e->getMessage());

        }

}


return connect($host, $db, $user, $password);
```

To get the database connection in other script files, you use the `require`

(https://www.phptutorial.net/php-tutorial/php-require/) construct like this:

```php
<?php

$pdo = require 'connect.php';

var_dump($pdo);
```

The `require` construct loads the `connect.php` file and returns the new instance of PDO
returned by the `connect()` function.

Using the class-based approach

To use a class (https://www.phptutorial.net/php-oop/php-objects/) instead of a function
(https://www.phptutorial.net/php-tutorial/php-functions/) to create a new database connection, you can follow
these steps:

First, create a new file called `Connection.php` and define the `Connection` class:

```php
<?php

require_once 'config.php';

class Connection
{
    public static function make($host, $db, $user, $password)
    {
        $dsn = "mysql:host=$host;dbname=$db;charset=UTF8";

        try {
            $options = [PDO::ATTR_ERRMODE => PDO::ERRMODE_E)

            return new PDO($dsn, $username, $password, $opt:
        } catch (PDOException $e) {
            die($e->getMessage());
```

```
            }
        }
    }

    return Connection::make($host, $db, $user, $password);
```

The `Connection` class has the `make()` method that returns a new instance of PDO.

Second, use the `Connection.php` file in other script files as follows:

```php
<?php

$pdo = require 'Connection.php';
var_dump($pdo);
```

In this tutorial, you have learned how to create the `bookdb` database in the MySQL server and developed a reusable script for connecting the database.