OOP PHP dan MySQL

1. **Buat Folder dan File baru pada C:\xampp\htdocs. Untuk strukturnya seperti dibawah ini :**

oop-crud/

├── index.php   → Halaman utama (tampil data)

├── form.php   → Form tambah/edit

├── proses.php   → Proses simpan, update, delete

├── Mahasiswa.php → Kelas OOP

└── db.php   → Koneksi ke database

2. **Buat Database pada MYSQL dengan nama databasenya adalah oop_crud**

```
CREATE DATABASE oop_crud;

USE oop_crud;

CREATE TABLE mahasiswa (

    id INT AUTO_INCREMENT PRIMARY KEY,

    nama VARCHAR(100) NOT NULL,

    nim VARCHAR(20) NOT NULL UNIQUE,

    jurusan VARCHAR(50) NOT NULL

);
```

3. **Buat file yang berisi code untuk koneksi ke databasenya dan beri nama file tersebut db.php**
```php
<?php
$host = "localhost";
$user = "root";
$pass = "";
$dbname = "oop_crud";

try {
    $pdo = new PDO("mysql:host=$host;dbname=$dbname", $user, $pass);
    $pdo->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
} catch (PDOException $e) {
    die("Koneksi gagal: " . $e->getMessage());
}
```

```php
?>
```

4. **Buat file Mahasiswa.php**

```php
<?php
require_once 'db.php';

class Mahasiswa {
  private $db;

  public function __construct($pdo) {
    $this->db = $pdo;
  }

  public function getAll() {
    $stmt = $this->db->query("SELECT * FROM mahasiswa");
    return $stmt->fetchAll(PDO::FETCH_ASSOC);
  }

  public function getById($id) {
    $stmt = $this->db->prepare("SELECT * FROM mahasiswa WHERE id = ?");
    $stmt->execute([$id]);
    return $stmt->fetch(PDO::FETCH_ASSOC);
  }

  public function insert($nama, $nim, $jurusan) {
    $stmt = $this->db->prepare("INSERT INTO mahasiswa (nama, nim, jurusan) VALUES (?, ?, ?)");
    return $stmt->execute([$nama, $nim, $jurusan]);
  }

  public function update($id, $nama, $nim, $jurusan) {
    $stmt = $this->db->prepare("UPDATE mahasiswa SET nama = ?, nim = ?, jurusan = ? WHERE id = ?");
    return $stmt->execute([$nama, $nim, $jurusan, $id]);
  }

  public function delete($id) {
    $stmt = $this->db->prepare("DELETE FROM mahasiswa WHERE id = ?");
    return $stmt->execute([$id]);
  }
}
?>
```

5. Buat File index.php

```php
<?php
require_once 'Mahasiswa.php';
$mahasiswa = new Mahasiswa($pdo);
$data = $mahasiswa->getAll();
?>

<!DOCTYPE html>
<html>
<head>
    <title>Data Mahasiswa</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body class="container mt-4">
    <h2>Data Mahasiswa</h2>
    <a href="form.php" class="btn btn-primary mb-2">+ Tambah Mahasiswa</a>
    <table class="table table-bordered table-striped">
        <thead>
            <tr>
                <th>ID</th><th>Nama</th><th>NIM</th><th>Jurusan</th><th>Aksi</th>
            </tr>
        </thead>
        <tbody>
        <?php foreach ($data as $mhs): ?>
            <tr>
                <td><?= $mhs['id'] ?></td>
                <td><?= $mhs['nama'] ?></td>
                <td><?= $mhs['nim'] ?></td>
                <td><?= $mhs['jurusan'] ?></td>
                <td>
                    <a href="form.php?id=<?= $mhs['id'] ?>" class="btn btn-warning btn-sm">Edit</a>
                    <a href="proses.php?hapus=<?= $mhs['id'] ?>" class="btn btn-danger btn-sm"
                        onclick="return confirm('Yakin hapus?')">Hapus</a>
                </td>
            </tr>
        <?php endforeach ?>
        </tbody>
    </table>
</body>
</html>
```

6. **Buat File form.php**

```php
<?php
require_once 'Mahasiswa.php';
$mahasiswa = new Mahasiswa($pdo);

$id = $_GET['id'] ?? '';
$data = [
    'nama' => '',
    'nim' => '',
    'jurusan' => ''
];

if ($id) {
    $data = $mahasiswa->getById($id);
}
?>

<!DOCTYPE html>
<html>
<head>
    <title><?= $id ? 'Edit' : 'Tambah' ?> Mahasiswa</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body class="container mt-4">
    <h2><?= $id ? 'Edit' : 'Tambah' ?> Mahasiswa</h2>
    <form action="proses.php" method="POST">
        <input type="hidden" name="id" value="<?= $id ?>">
        <div class="mb-3">
            <label>Nama</label>
            <input type="text" name="nama" class="form-control" required value="<?= $data['nama']
?>">
        </div>
        <div class="mb-3">
            <label>NIM</label>
            <input type="text" name="nim" class="form-control" required value="<?= $data['nim'] ?>">
        </div>
        <div class="mb-3">
            <label>Jurusan</label>
            <input type="text" name="jurusan" class="form-control" required value="<?=
$data['jurusan'] ?>">
        </div>
        <button type="submit" name="simpan" class="btn btn-success">Simpan</button>
```

```html
        <a href="index.php" class="btn btn-secondary">Kembali</a>
    </form>
</body>
</html>
```

7. **Buat File proses.php**
```php
<?php
require_once 'Mahasiswa.php';
$mahasiswa = new Mahasiswa($pdo);

// Simpan atau Update
if (isset($_POST['simpan'])) {
    $id = $_POST['id'];
    $nama = $_POST['nama'];
    $nim = $_POST['nim'];
    $jurusan = $_POST['jurusan'];

    if ($id) {
        $mahasiswa->update($id, $nama, $nim, $jurusan);
    } else {
        $mahasiswa->insert($nama, $nim, $jurusan);
    }
    header("Location: index.php");
    exit;
}

// Hapus
if (isset($_GET['hapus'])) {
    $mahasiswa->delete($_GET['hapus']);
    header("Location: index.php");
    exit;
}
?>
```