Modul 2
Database – Konfigurasi – Model buku

Buat Database

- Buat database: perpus
- Buat table: mst_buku
- Struktur table mst_buku

Field	Tipe Data	Size
ID_Buku	Integer	8, auto increment
Judul	Varchar	100
Pengarang	Varchar	150
Kategori	Varchar	30

Isi dengan data berikut

Judul	Pengarang	Kategori
Donal Bebek	Disney	komik
UML	Rosa	teori
Pemrograman Web	April	pemrograman

Konfigurasi Database (.env)

- buka file **.env** di folder C:\framework\perpus\.env

- Tentukan hostname, username, password, dan nama database. Contoh:

```
11    DB_CONNECTION=mysql
12    DB_HOST=127.0.0.1
13    DB_PORT=3306
14    DB_DATABASE=perpus
15    DB_USERNAME=root
16    DB_PASSWORD=
```

Konfigurasi Database (config/database.php)

- Masuk ke direktori config/, lalu buka file **database.php**. Tentukan hostname, username, password, dan nama database. Contoh:

```
46          'mysql' => [
47              'driver' => 'mysql',
48              'url' => env('DATABASE_URL'),
49              'host' => env('DB_HOST', '127.0.0.1'),
50              'port' => env('DB_PORT', '3306'),
51              'database' => env('DB_DATABASE', 'perpus'),
52              'username' => env('DB_USERNAME', 'root'),
53              'password' => env('DB_PASSWORD', ''),
54              'unix_socket' => env('DB_SOCKET', ''),
55              'charset' => 'utf8mb4',
56              'collation' => 'utf8mb4_unicode_ci',
57              'prefix' => '',
58              'prefix_indexes' => true,
59              'strict' => true,
60              'engine' => null,
61              'options' => extension_loaded('pdo_mysql') ? array_filter([
62                  PDO::MYSQL_ATTR_SSL_CA => env('MYSQL_ATTR_SSL_CA'),
63              ]) : [],
64          ],
```

Buat Eloquent Model Buku (1)

- Buat file model **Buku_m.php** menggunakan artisan:

```
PS C:\framework\perpus> C:\xampp\php\php artisan make:model Buku_m
Model created successfully.
PS C:\framework\perpus> []
```

- Hasil generate menggunakan artisan:

  - C:\framework\perpus\app\Models\Buku_m.php

```
app > Models > 🐘 Buku_m.php
 1    <?php
 2
 3    namespace App\Models;
 4
 5    use Illuminate\Database\Eloquent\Factories\HasFactory;
 6    use Illuminate\Database\Eloquent\Model;
 7
 8    class Buku_m extends Model
 9    {
10        use HasFactory;
11    }
12
```

Edit Eloquent Model "Buku_m"

- Edit isi file model "Buku_m.php" sbb:

app > Models > 🐘 Buku_m.php

```php
1   <?php
2
3   namespace App\Models;
4
5   use Illuminate\Database\Eloquent\Factories\HasFactory;
6   use Illuminate\Database\Eloquent\Model;
7
8   class Buku_m extends Model
9   {
10      use HasFactory;
11
12      protected $table = 'mst_buku';
13      protected $primaryKey = 'ID_Buku';
14      public $timestamps = false;
15  }
```

Menguji Eloquent Model "Buku_m" menggunakan tinker

- Jalankan tinker menggunakan artisan

```
PS C:\framework\perpus> C:\xampp\php\php artisan tinker
Psy Shell v0.11.8 (PHP 7.4.29 — cli) by Justin Hileman
>>>
```

- Beberapa fungsi Eloquent model laravel yang dapat kita coba sbb:
  - all()
  - first()
  - find()
  - where() → get()

Menguji Eloquent Model "Buku_m" menggunakan tinker

- Fungsi all() untuk mendapatkan semua record

```
>>> App\Models\Buku_m::all()
```

- Hasil

```
>>> App\Models\Buku_m::all()
=> Illuminate\Database\Eloquent\Collection {#3632
     all: [
       App\Models\Buku_m {#3633
         ID_Buku: 1,
         Judul: "Senja Kelabu",
         Pengarang: "Mutia",
         Kategori: "komik",
       },
       App\Models\Buku_m {#3634
         ID_Buku: 2,
         Judul: "Donald Bebek",
         Pengarang: "disney",
         Kategori: "komik",
       },
```

```
       App\Models\Buku_m {#3615
         ID_Buku: 2,
         Judul: "Donald Bebek",
         Pengarang: "disney",
         Kategori: "komik",
       },
       App\Models\Buku_m {#3616
         ID_Buku: 5,
         Judul: "UML",
         Pengarang: "rosa",
         Kategori: "pemrograman",
       },
       App\Models\Buku_m {#3617
         ID_Buku: 6,
         Judul: "Pemrograman Web",
```

Dst....

Menguji Eloquent Model "Buku_m" menggunakan tinker

- Fungsi first() untuk mendapatkan record pertama

```
>>> App\Models\Buku_m::first()
```

- Hasil

```
>>> App\Models\Buku_m::first()
=> App\Models\Buku_m {#3604
     ID_Buku: 1,
     Judul: "Senja Kelabu",
     Pengarang: "Mutia",
     Kategori: "komik",
   }
```

Menguji Eloquent Model "Buku_m" menggunakan tinker

- Fungsi find() untuk mendapatkan record sesuai ID_Buku

```
>>> App\Models\Buku_m::find(6)
```

ID_Buku

- Hasil

```
>>> App\Models\Buku_m::find(6)
=> App\Models\Buku_m {#3647
    ID_Buku: 6,
    Judul: "Pemrograman Web",
    Pengarang: "April",
    Kategori: "novel",
}
```

Menguji Eloquent Model "Buku_m" menggunakan tinker

- Fungsi where()->get() untuk mendapatkan record sesuai kriteria

```
>>> App\Models\Buku_m::where('Kategori','Novel')->get()
```

- Hasil

```
>>> App\Models\Buku_m::where('Kategori','Novel')->get()
=> Illuminate\Database\Eloquent\Collection {#3593
     all: [
       App\Models\Buku_m {#3598
         ID_Buku: 6,
         Judul: "Pemrograman Web",
         Pengarang: "April",
         Kategori: "novel",
       },
       App\Models\Buku_m {#3603
         ID_Buku: 7,
         Judul: "Pemrograman Web",
         Pengarang: "April",
         Kategori: "novel",
       },
       App\Models\Buku_m {#3647
         ID_Buku: 11,
         Judul: "Mereka",
         Pengarang: "aku",
         Kategori: "novel",
       },
```

Uji Insert data Eloquent Model "Buku_m"

- Ikuti perintah berikut:

```
PS C:\framework\perpus> c:\xampp\php\php artisan tinker
Psy Shell v0.11.8 (PHP 7.4.29 — cli) by Justin Hileman
>>> $buku = new App\Models\Buku_m
=> App\Models\Buku_m {#3587}

>>> $buku->Judul = "Buku 1"
=> "Buku 1"

>>> $buku->Pengarang = "Pengarang 1"
=> "Pengarang 1"

>>> $buku->Kategori = "Pemrograman"
=> "Pemrograman"

>>> $buku->save()
=> true

>>>
```

- Hasil

☐	🖉 Edit	┇Copy	⊖ Delete	31	judul 1	pengarang 1 pemrograman
☐	🖉 Edit	┇Copy	⊖ Delete	32	judul 2	pengarang 3 komik
☐	🖉 Edit	┇Copy	⊖ Delete	33	Buku 1	Pengarang 1 Pemrograman

Uji Update data Eloquent Model "Buku_m"

- Ikuti perintah berikut:

```
PS C:\framework\perpus> c:\xampp\php\php artisan tinker
Psy Shell v0.11.8 (PHP 7.4.29 — cli) by Justin Hileman
>>> $buku = App\Models\Buku_m::find(33)
=> App\Models\Buku_m {#3597
      ID_Buku: 33,
      Judul: "Buku 1",
      Pengarang: "Pengarang 1",
      Kategori: "Pemrograman",
    }

>>> $buku->Judul = "Buku 11111"
=> "Buku 11111"

>>> $buku->save()
=> true

>>>
```

ID_Buku

- Hasil

☐	✏ Edit	⅔ Copy	⊖ Delete	31 judul 1	pengarang 1	pemrograman
☐	✏ Edit	⅔ Copy	⊖ Delete	32 judul 2	pengarang 3	komik
☐	✏ Edit	⅔ Copy	⊖ Delete	33 Buku 11111	Pengarang 1	Pemrograman

Uji Delete data Eloquent Model "Buku_m"

- Ikuti perintah berikut:

```
PS C:\framework\perpus> c:\xampp\php\php artisan tinker
Psy Shell v0.11.8 (PHP 7.4.29 — cli) by Justin Hileman
>>> $buku = App\Models\Buku_m::find(33)
=> App\Models\Buku_m {#3597
        ID_Buku: 33,                              ID_Buku
        Judul: "Buku 11111",
        Pengarang: "Pengarang 1",
        Kategori: "Pemrograman",
    }

>>> $buku->delete()
=> true
```

- Hasil

☐	✏ Edit	⌗ Copy	⊖ Delete	31 judul 1	pengarang 1 pemrograman
☐	✏ Edit	⌗ Copy	⊖ Delete	32 judul 2	pengarang 3 komik

Edit file model "Buku_m.php"

- Tambahkan method berikut:
  - get_records() → untuk mengambil data
  - insert_record() → untuk menambah data
  - update_by_id() → untuk mengupdate data
  - delete_by_id() → untuk menghapus data

- Sisipkan method diatas diantara { .. } dalam class "Buku_m

```
8    class Buku_m extends Model
9    {


15   }
```

get_records()

```php
16    function get_records($criteria='')
17    {
18        $result = self::select('*')
19                ->when($criteria, function ($query, $criteria) {
20                    return $query->where('ID_Buku',$criteria);
21                })
22                ->get();
23        return $result;
24    }
```

insert_record(), update_by_id(), delete_by_id()

```
35    function insert_record($data)
36    {
37        $result = self::insert($data);
38        return $result;
39    }
40
41    function update_by_id($data, $id)
42    {
43        $result = self::where('ID_Buku', $id)
44                    ->update($data);
45        return $result;
46    }
47
48    function delete_by_id($id)
49    {
50        $result = self::where('ID_Buku', $id)
51                    ->delete();
52        return $result;
53    }
```

Uji insert_record()

```
PS C:\framework\perpus> c:\xampp\php\php artisan tinker
Psy Shell v0.11.8 (PHP 7.4.29 — cli) by Justin Hileman
>>> $buku = new App\Models\Buku_m
=> App\Models\Buku_m {#3587}

>>> $data = [
...      'Judul' => 'Doraemon',
...      'Pengarang' => 'Dino',
...      'Kategori' => 'Komik'
... ]
=> [
     "Judul" => "Doraemon",
     "Pengarang" => "Dino",
     "Kategori" => "Komik",
   ]

>>> $buku->insert_record($data)
=> true
```

Perintah untuk membuat object **$buku**

Hasil:

☐	🖉 Edit	⯬ Copy	⊖ Delete	31 judul 1	pengarang 1	pemrograman
☐	🖉 Edit	⯬ Copy	⊖ Delete	35 Doraemon	Dino	Komik

Uji get_records()

- Buat object $buku terlebih dahulu

  ```
  >>> $buku = new App\Models\Buku_m
  ```

```
>>> $buku->get_records()
=> Illuminate\Database\Eloquent\Collection {#3614
     all: [
       App\Models\Buku_m {#3615
         ID_Buku: 1,
         Judul: "Senja Kelabu",
         Pengarang: "Mutia",
         Kategori: "komik",
       },
       App\Models\Buku_m {#3616
         ID_Buku: 2,
         Judul: "Donald Bebek",
         Pengarang: "disney",
         Kategori: "komik",
       },
```
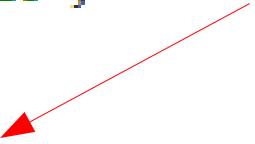
Uji update_by_id()

- Buat object $buku terlebih dahulu

```
>>> $buku = new App\Models\Buku_m
```

```
>>> $data = [
... 'Judul' => 'Petualangan Doraemon',
... 'Pengarang' => 'Fujiko Fujio'
... ]
=> [
    "Judul" => "Petualangan Doraemon",
    "Pengarang" => "Fujiko Fujio",       ID_Buku
]

>>> $buku->update_by_id($data,35)
=> 1
```

Hasil:

☐	✎ Edit	⊞ Copy	⊖ Delete	31	judul 1	pengarang 1	pemrograman
☐	✎ Edit	⊞ Copy	⊖ Delete	35	Petualangan Doraemon	Fujiko Fujio	Komik

Uji delete_by_id()

- Buat object $buku terlebih dahulu

  ```
  >>> $buku = new App\Models\Buku_m
  ```

  ```
  >>> $buku->delete_by_id(35)
  => 1

  >>>
  ```

  ID_Buku

  Hasil:

☐	🖉 Edit	📋 Copy	⊖ Delete	30 aku dan kamu	chairil anwar novel
☐	🖉 Edit	📋 Copy	⊖ Delete	31 judul 1	pengarang 1 pemrograman