



Mata Kuliah : Pemrograman Web Lanjut (PWL)
Program Studi : D4 – Teknik Informatika / D4 – Sistem Informasi Bisnis
Semester : 4 (empat) / 6 (enam)
Pertemuan ke- : 11 (sebelas)

JOBSHEET 11

RESTFUL API 2

Sebelumnya kita sudah membahas mengenai *RESTFUL API dan JSON Web Token (JWT)* pada Laravel. Dimana kita telah membuat RESTful API Register, RESTful API Login, RESTful API Logout, dan implementasi CRUD dalam RESTful API pada halaman web. Pada pertemuan kali ini, kita akan mempelajari penerapan RESTFUL API lanjutan di dalam project Laravel.

Sebelum kita masuk materi, kita buat dulu project baru yang akan kita gunakan untuk membangun aplikasi sederhana dengan topik *Point of Sales (PoS)*, sesuai dengan **Studi Kasus PWL.pdf**.
Jadi kita bikin project Laravel 10 dengan nama **PWL_POS**.

Project PWL_POS akan kita gunakan sampai pertemuan 12 nanti, sebagai project yang akan kita pelajari

A. ELOQUENT ACCESSOR

Laravel memiliki fitur yang bernama mutator, accessor dan casting, fitur-fitur ini digunakan untuk melakukan manipulasi data di dalam attribute database dengan sangat mudah. Contohnya pada saat insert data dengan enkripsi ke dalam database dan melakukan deskripsi saat menampilkan dari database secara otomatis.

Accessor dapat mengubah nilai saat attribute atau field eloquent diakses. Untuk mendefinisikan Accessor dapat membuat method di dalam model untuk menentukan attribute yang akan diakses. Nama method yang dibuat harus sama dengan nama attribute yang akan di format: contoh :

Attribute/field pada tabel `first_name` maka methodnya `firstName()`



protected function firstName(): Attribute

```
{  
    //...  
}
```

Jika membuat attribute/field image yang ada di table m_user kita akan memberikan nilai full path dari direktori dimana file gambar tersebut disimpan. Contohnya pada UserModel ditambahkan

```
protected function image(): Attribute  
{  
    return Attribute::make(  
        get: fn ($image) => url('/storage/posts/' . $image),  
    );  
}
```

Dengan begitu dapat melakukan import Eloquent Attribute dengan

```
use Illuminate\Database\Eloquent\Casts\Attribute;
```

Lalu method baru dengan nama image() melakukan return path nama file image itu berada

```
get: fn ($image) => url('/storage/posts/' . $image),
```

Hasil akhir memanggil attribute image

```
domain.com/storage/posts/nama_file_image.png
```

Praktikum 1 – Implementasi Eloquent Accessor

1. Sebelum memulai pastikan REST API, terlebih dahulu pastikan sudah ter instal aplikasi Postman.
2. Kita akan memodifikasi Table m_user dengan menambahkan column : image, buka terminal lalu ketikkan

php artisan make:migration add_image_to_m_user_table

```
PS C:\laragon\www\PWL_POS> php artisan make:migration add_image_to_m_user_table  
INFO Migration [C:\laragon\www\PWL_POS\database\Migrations\2024_04_30_040822_add_image_to_m_user_table.php] created successfully.
```

3. Buka file migrasi tersebut lalu modifikasi seperti ini lalu simpan:



```
<?php

use Illuminate\Database\Migrations\Migration;
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Support\Facades\Schema;

return new class extends Migration
{
    /**
     * Run the migrations.
     */
    public function up(): void
    {
        Schema::table('m_user', function (Blueprint $table) {
            $table->string('image');
        });
    }

    /**
     * Reverse the migrations.
     */
    public function down(): void
    {
        Schema::table('m_user', function (Blueprint $table) {
            $table->dropColumn('image');
        });
    }
};
```

4. Lakukan jalankan update migrasi dengan cara:
php artisan migrate
5. Lalu lakukan modifikasi models pada App/Models/UserModel.php

```
<?php

namespace App\Models;

use Illuminate\Database\Eloquent\Model;
use Tymon\JWTAuth\Contracts\JWTSubject;
use Illuminate\Database\Eloquent\Casts\Attribute;
use Illuminate\Foundation\Auth\User as Authenticatable;
```



```
class UserModel extends Authenticatable implements JWTSubject
{
    public function getJWTIdentifier(){
        return $this->getKey();
    }

    public function getJWTCustomClaims(){
        return [];
    }

    protected $table = 'm_user';
    protected $primaryKey = 'user_id';

    protected $fillable = [
        'username',
        'nama',
        'password',
        'level_id',
        'image'//tambahan
    ];

    public function level()
    {
        return $this->belongsTo(LevelModel::class, 'level_id',
'level_id');
    }
    protected function image(): Attribute
    {
        return Attribute::make(
            get: fn ($image) => url('/storage/posts/' . $image),
        );
    }
}
```

6. Lakukan modifikasi pada Controllers/Api/RegisterController

```
<?php

namespace App\Http\Controllers\Api;

use App\Models\UserModel;
use App\Http\Controllers\Controller;
use Illuminate\Http\Request;
```



```
use Illuminate\Support\Facades\Validator;

class RegisterController extends Controller
{
    public function __invoke(Request $request)
    {
        //set validation
        $validator = Validator::make($request->all(), [ 'username' =>
            'required',
            'nama' => 'required',
            'password' => 'required|min:5|confirmed', 'level_id' =>
            'required',
            'image' => 'required'

        ]);

        //if validations fails if($validator->fails()){
            return response()->json($validator->errors(), 422);
        }

        //create user
        $user = UserModel::create([ 'username' => $request->username, 'nama'
            => $request->nama,
            'password' => bcrypt($request->password), 'level_id' =>
            $request->level_id,
            'image' => $request->image
        ]);

        //return response JSON user is created if($user){
            return response()->json([ 'success' => true, 'user' => $user,
            ], 201);
        }

        //return JSON process insert failed return response()->json([
            'success' => false,
            ], 409);
    }
}
```



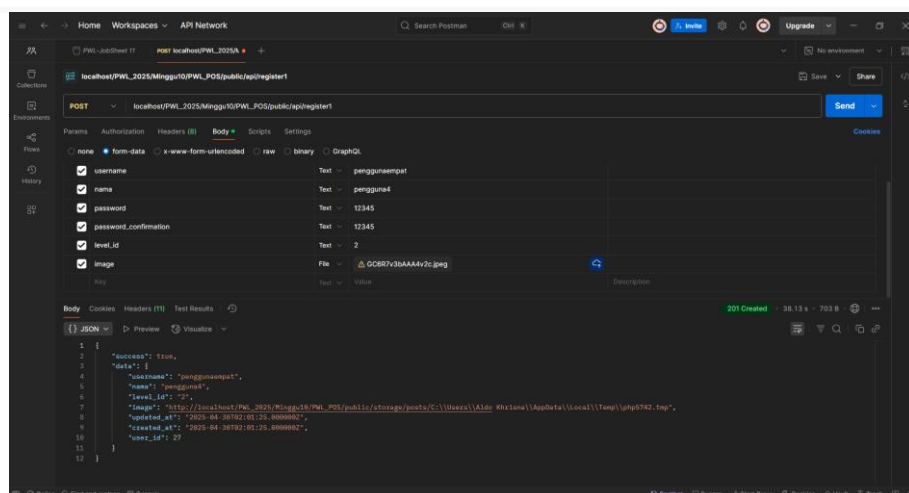
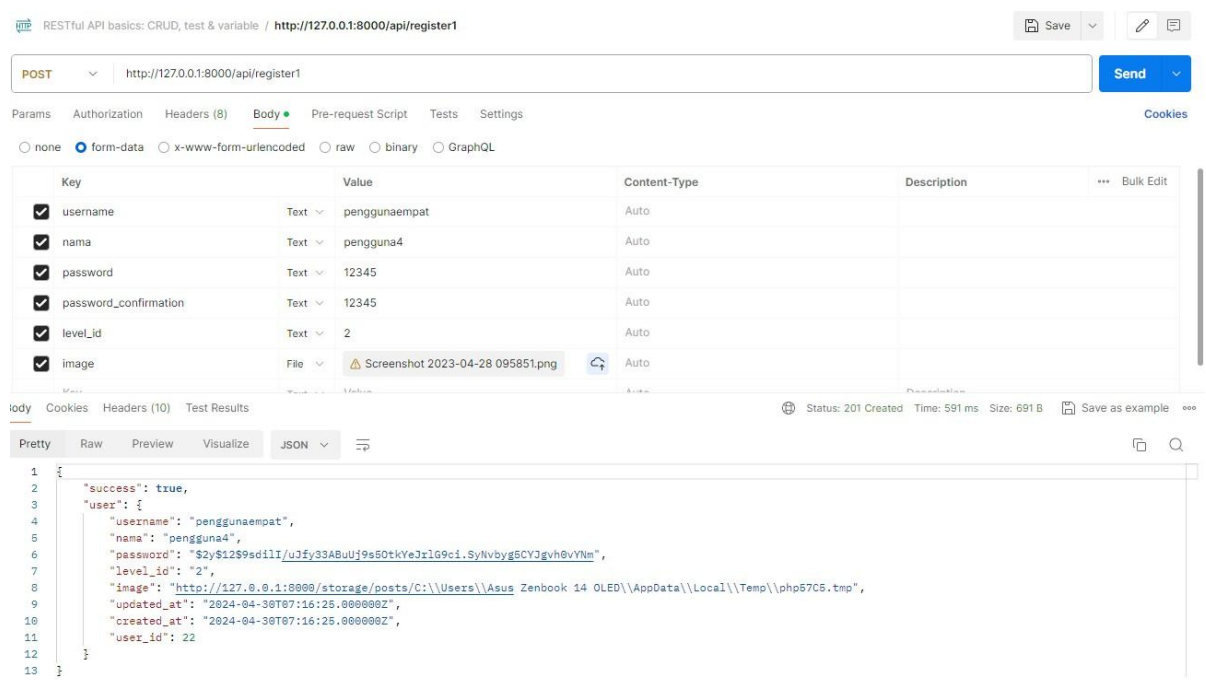
7. Anda dapat menambahkan detail untuk spesifikasi image pada validator

```
'image' => 'required|image|mimes:jpeg,png,jpg,gif,svg|max:2048',
```

8. Ubah atau tambahkan register1 pada routes/api.php

```
Route::post('/register1', App\Http\Controllers\Api\RegisterController::class)->name('register1');
```

8. Simpan dan akses pada aplikasi Postman, atur pada Body isi manual Key dan Valuenya pada Key image tambahkan value File dan upload gambar <http://127.0.0.1:8000/api/register1> dengan method POST dan klik send



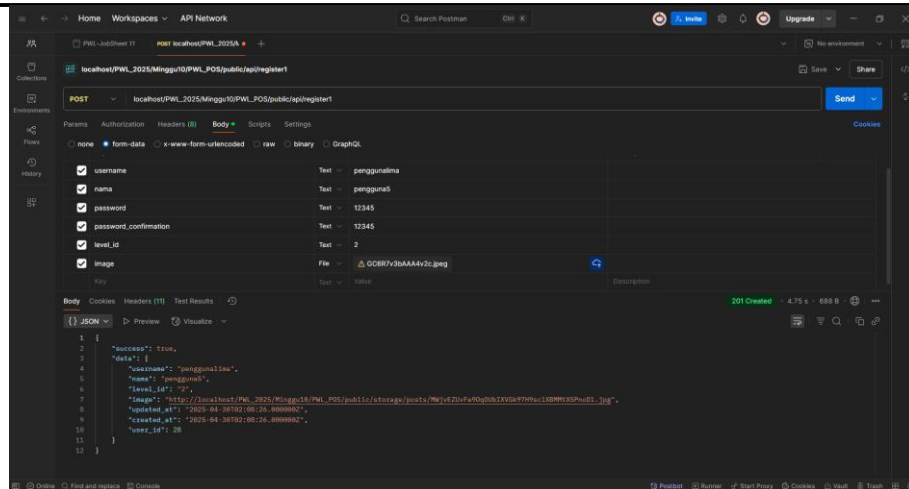
9. Pada Controllers/Api/RegisterController bagian create user ganti dengan

```
'image' => $image->hashName(),
```

10. Uji coba dan screenshot hasilnya apa perbedaan dari yang sebelumnya



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- Nama file yang akan disimpan pada database dihash/disembunyikan.

TUGAS

Implementasikan API untuk upload file/gambar pada tabel lainnya yaitu tabel m_barang dan gunakan pada transaksi. Uji coba dengan method GET untuk memanggil data yang sudah di inputkan.

1. Menambahkan migration untuk kolom image

```
PS C:\laragon\www\PWL_2025\Minggu10\PWL_P05> php artisan make:migration add_image_to_m_barang_table
INFO Migration [C:\laragon\www\PWL_2025\Minggu10\PWL_P05\database\migrations\2025_06_28_101205_add_image_to_m_barang_table.php] created successfully.
```

2. Memodifikasi isi file migration

3. Melakukan migration

- Sebelum

| | barang_id | kategori_id | barang_kode | barang_nama | harga_beli | harga_jual | created_at | updated_at |
|---|-----------|-------------|-------------|---------------|------------|------------|---------------------|------------|
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 1 | 1 | MKN001 | Nasi Goreng | 10000 | 15000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 2 | 1 | MKN002 | Mie Goreng | 5000 | 10000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 3 | 2 | MNM001 | Teh Botol | 2000 | 4000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 4 | 2 | MNM002 | Aqua | 1000 | 2000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 5 | 3 | PKN001 | Kemeja | 50000 | 70000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 6 | 3 | PKN002 | Celana | 70000 | 100000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 7 | 4 | ATK001 | Pensil | 1000 | 2000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 8 | 4 | ATK002 | Buku Tulis | 5000 | 10000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 9 | 5 | MIN001 | Lego | 20000 | 25000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 10 | 5 | MIN002 | Boneka | 30000 | 40000 | NULL | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 13 | 1 | MKN003 | Rendang | 5000 | 7000 | 2025-03-30 03:30:05 | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 14 | 2 | MNM003 | Fanta 250ml | 3500 | 4500 | 2025-03-30 03:30:05 | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 15 | 3 | PKN003 | Kaos Polo | 65000 | 80000 | 2025-03-30 03:30:05 | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 16 | 4 | ATK003 | Penghapus | 500 | 1000 | 2025-03-30 03:30:05 | NULL |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 17 | 5 | MIN003 | Action Figure | 150000 | 170000 | 2025-03-30 03:30:05 | NULL |



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<http://www.polinema.ac.id>

- Migration

```
PS C:\laragon\www\PWL_2025\Minggu10\PWL_POS> php artisan migrate

INFO Running migrations.

2025_06_28_101205_add_image_to_m_barang_table ..... 486ms DONE
```

- Sesudah

| | barang_id | kategori_id | barang_kode | barang_nama | harga_beli | harga_jual | created_at | updated_at | image |
|---|-----------|-------------|-------------|---------------|------------|------------|---------------------|------------|-------|
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 1 | 1 | MKN001 | Nasi Goreng | 10000 | 15000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 2 | 1 | MKN002 | Mie Goreng | 5000 | 10000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 3 | 2 | MNM001 | Teh Botol | 2000 | 4000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 4 | 2 | MNM002 | Aqua | 1000 | 2000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 5 | 3 | PKN001 | Kemeja | 50000 | 70000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 6 | 3 | PKN002 | Celana | 70000 | 100000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 7 | 4 | ATK001 | Pensil | 1000 | 2000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 8 | 4 | ATK002 | Buku Tulis | 5000 | 10000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 9 | 5 | MIN001 | Lego | 20000 | 25000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 10 | 5 | MIN002 | Boneka | 30000 | 40000 | NULL | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 13 | 1 | MKN003 | Rendang | 5000 | 7000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 14 | 2 | MNM003 | Fanta 250ml | 3500 | 4500 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 15 | 3 | PKN003 | Kaos Polo | 65000 | 80000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 16 | 4 | ATK003 | Penghapus | 500 | 1000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete | 17 | 5 | MIN003 | Action Figure | 150000 | 170000 | 2025-03-30 03:30:05 | NULL | |

4. Memodifikasi BarangModel

```
BarangModel.php M X
Minggu10 > PWL_POS > app > Models > BarangModel.php > ...
1 <?php
2
3 namespace App\Models;
4
5 use Illuminate\Database\Eloquent\Factories\HasFactory;
6 use Illuminate\Database\Eloquent\Model;
7 use Illuminate\Database\Eloquent\Relations\BelongsTo;
8
9 class BarangModel extends Model
10 {
11     use HasFactory;
12     protected $table = 'm_barang';
13     protected $primaryKey = 'barang_id';
14     /**
15      * The attributes that are mass assignable.
16      *
17      * @var array
18      */
19     protected $fillable = ['kategori_id', 'barang_kode', 'barang_nama', 'harga_beli', 'harga_jual', 'image'];
20
21     public function kategori(): BelongsTo
22     {
23         return $this->belongsTo(KategoriModel::class, 'kategori_id', 'kategori_id');
24     }
25 }
```

5. Memodifikasi BarangController



```
public function store(Request $request)
{
    $barang = BarangModel::create([
        'kategori_id' => $request->kategori_id,
        'barang_kode' => $request->barang_kode,
        'barang_nama' => $request->barang_nama,
        'harga_beli' => $request->harga_beli,
        'harga_jual' => $request->harga_jual,
        'image' => $request->image->hashName()
    ]);
    return response()->json($barang, 201);
}
```

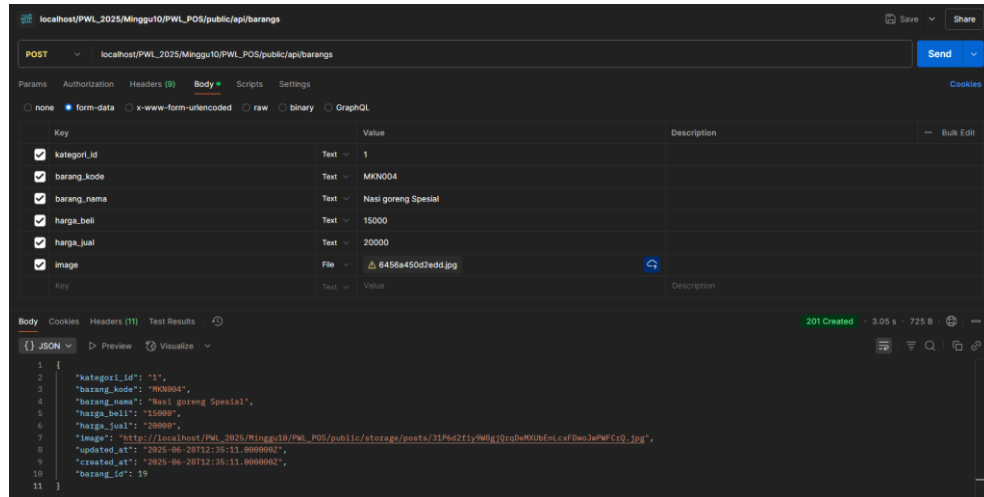
6. Uji coba menambahkan data baru melalui postman

- Sebelum Post

| barang_id | kategori_id | barang_kode | barang_nama | harga_beli | harga_jual | created_at | updated_at | image |
|-----------|-------------|-------------|---------------|------------|------------|-----------------------------|------------|-------|
| 0 1 | 1 | MKN001 | Nasi Goreng | 10000 | 15000 | null | null | |
| 1 2 | 1 | MKN002 | Mie Goreng | 5000 | 10000 | null | null | |
| 2 3 | 2 | MNM001 | Teh Botol | 2000 | 4000 | null | null | |
| 3 4 | 2 | MNM002 | Aqua | 1000 | 2000 | null | null | |
| 4 5 | 3 | PKN001 | Kemeja | 50000 | 70000 | null | null | |
| 5 6 | 3 | PKN002 | Celana | 70000 | 100000 | null | null | |
| 6 7 | 4 | ATK001 | Pensil | 1000 | 2000 | null | null | |
| 7 8 | 4 | ATK002 | Buku Tulis | 5000 | 10000 | null | null | |
| 8 9 | 5 | MIN001 | Lego | 20000 | 25000 | null | null | |
| 9 10 | 5 | MIN002 | Boneka | 30000 | 40000 | null | null | |
| 10 13 | 1 | MKN003 | Rendang | 5000 | 7000 | 2025-03-30T03:30:05.000000Z | null | |
| 11 14 | 2 | MNM003 | Fanta 250ml | 3500 | 4500 | 2025-03-30T03:30:05.000000Z | null | |
| 12 15 | 3 | PKN003 | Kaos Polo | 65000 | 80000 | 2025-03-30T03:30:05.000000Z | null | |
| 13 16 | 4 | ATK003 | Penghapus | 500 | 1000 | 2025-03-30T03:30:05.000000Z | null | |
| 14 17 | 5 | MIN003 | Action Figure | 150000 | 170000 | 2025-03-30T03:30:05.000000Z | null | |



- Post



- Sesudah Post

| T | | | | | | | | | | | | |
|--------------------------|----------------------|----------------------|------------------------|-------------|-------------|-------------|---------------------|------------|------------|---------------------|---------------------|--|
| | | | barang_id | kategori_id | barang_kode | barang_nama | harga_beli | harga_jual | created_at | updated_at | image | |
| <input type="checkbox"/> | Edit | Copy | Delete | 1 | 1 | MKN001 | Nasi Goreng | 10000 | 15000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 2 | 1 | MKN002 | Mie Goreng | 5000 | 10000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 3 | 2 | MNM001 | Teh Botol | 2000 | 4000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 4 | 2 | MNM002 | Aqua | 1000 | 2000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 5 | 3 | PKN001 | Kemeja | 50000 | 70000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 6 | 3 | PKN002 | Celana | 70000 | 100000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 7 | 4 | ATK001 | Pensil | 1000 | 2000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 8 | 4 | ATK002 | Buku Tulis | 5000 | 10000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 9 | 5 | MIN001 | Lego | 20000 | 25000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 10 | 5 | MIN002 | Boneka | 30000 | 40000 | NULL | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 13 | 1 | MKN003 | Rendang | 5000 | 7000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 14 | 2 | MNM003 | Fanta 250ml | 3500 | 4500 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 15 | 3 | PKN003 | Kaos Polo | 65000 | 80000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 16 | 4 | ATK003 | Penghapus | 500 | 1000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 17 | 5 | MIN003 | Action Figure | 150000 | 170000 | 2025-03-30 03:30:05 | NULL | |
| <input type="checkbox"/> | Edit | Copy | Delete | 19 | 1 | MKN004 | Nasi goreng Spesial | 15000 | 20000 | 2025-06-28 12:35:11 | 2025-06-28 12:35:11 | 31P6d2fy9W8gQrQDeMXUbEnLcxFDwoJwPWFCrQ.jpg |

*** Sekian, dan selamat belajar ***