KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET, DAN TEKNOLOGI
POLITEKNIK NEGERI MALANG
JURUSAN TEKNOLOGI INFORMASI
Jl. Soekarno Hatta No. 9, Jatimulyo, Lowokwaru, Malang 65141
Telp. (0341) 404424 – 404425, Fax (0341) 404420
http://www.polinema.ac.id

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 ditable m_user kita akan memberikan nilai full path dari direktori dimana file gambar tersebut disimpan.contohnya pada UserModel ditambahkan

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

Dengan begitu dapat melakukan import Eloquent Attribute dengan

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

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

```php
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
<?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');
        });
    }
};
```

```php
<?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(table: 'm_user', callback: function (Blueprint $table): void {
            $table->string(column: 'foto')->nullable()->after('level_id');
        });
    }

    public function down(): void
    {
        Schema::table(table: 'm_user', callback: function (Blueprint $table): void {
            $table->dropColumn(columns: 'foto');
        });
    }

};
```

4. Lakukan jalankan update migrasi dengan cara:

```
php artisan migrate
```

5. Lalu lakukan modifikasi models pada App/Models/UserModel.php

```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;
```

```php
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),
        );
    }

}
```

```php
class UserModel extends Authenticatable implements JWTSubject
{
    use HasFactory;

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

    0 references
    protected $fillable = [
        'username',
        'password',
        'nama',
        'level_id',
        'foto',
        'created_at',
        'updated_at',
    ];

    0 references
    protected $hidden = ['password'];

    0 references
    protected $casts = [
        'password' => 'hashed',
    ];

    // Implementasi JWTSubject
    0 references | 0 overrides
    public function getJWTIdentifier(): mixed
    {
        return $this->getKey();
    }

    0 references | 0 overrides
    public function getJWTCustomClaims(): array
    {
        return [];
    }

    // Accessor untuk foto
    0 references | 0 overrides
    protected function foto(): Attribute
    {
        return Attribute::make(
            get: fn($foto): string|UrlGenerator|null => $foto ? url(path: '/storage/posts/' . $foto) : null
        );
    }
```

6. Lakukan modifikasi pada Controllers/Api/RegisterController

```php
<?php

namespace App\Http\Controllers\Api;

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

```php
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);
    }
}
```

```php
class RegisterController extends Controller
{
    0 references | 0 overrides
    public function __invoke(Request $request): JsonResponse|mixed
    {
        // Set validation
        $validator = Validator::make(data: $request->all(), rules: [
            'username' => 'required',
            'nama' => 'required',
            'password' => 'required|min:5|confirmed',
            'level_id' => 'required',
            'foto' => 'required',
        ]);

        // If validation fails
        if ($validator->fails()) {
            return response()->json(data: $validator->errors(), status: 422);
        }

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

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

        // Return JSON if insert failed
        return response()->json(data: [
            'success' => false,
        ], status: 409);
    }
}
```

7. Anda dapat menambahkan detail untuk spesifikasi image pada validator

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

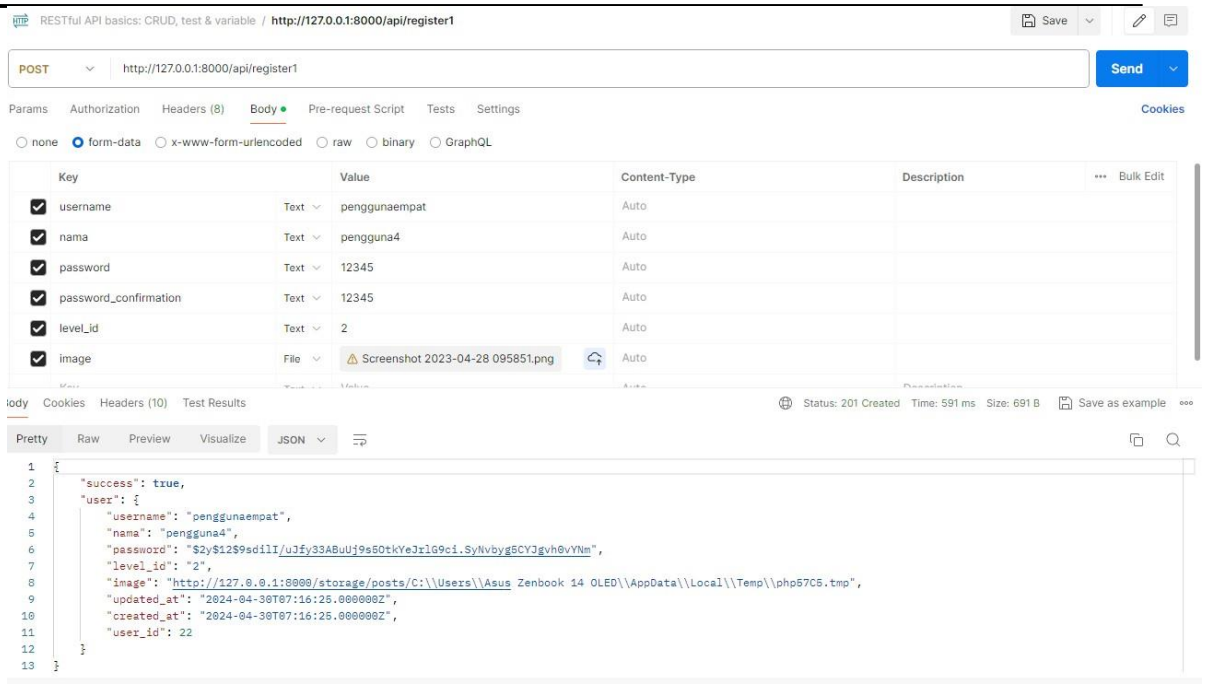
```php
public function __invoke(Request $request): JsonResponse|mixed
{
    // Set validation
    $validator = Validator::make(data: $request->all(), rules: [
        'username' => 'required',
        'nama' => 'required',
        'password' => 'required|min:5|confirmed',
        'level_id' => 'required',
        'foto' => 'required|image|mimes:jpeg,png,jpg,gif,svg|max:2048',
    ]);
```

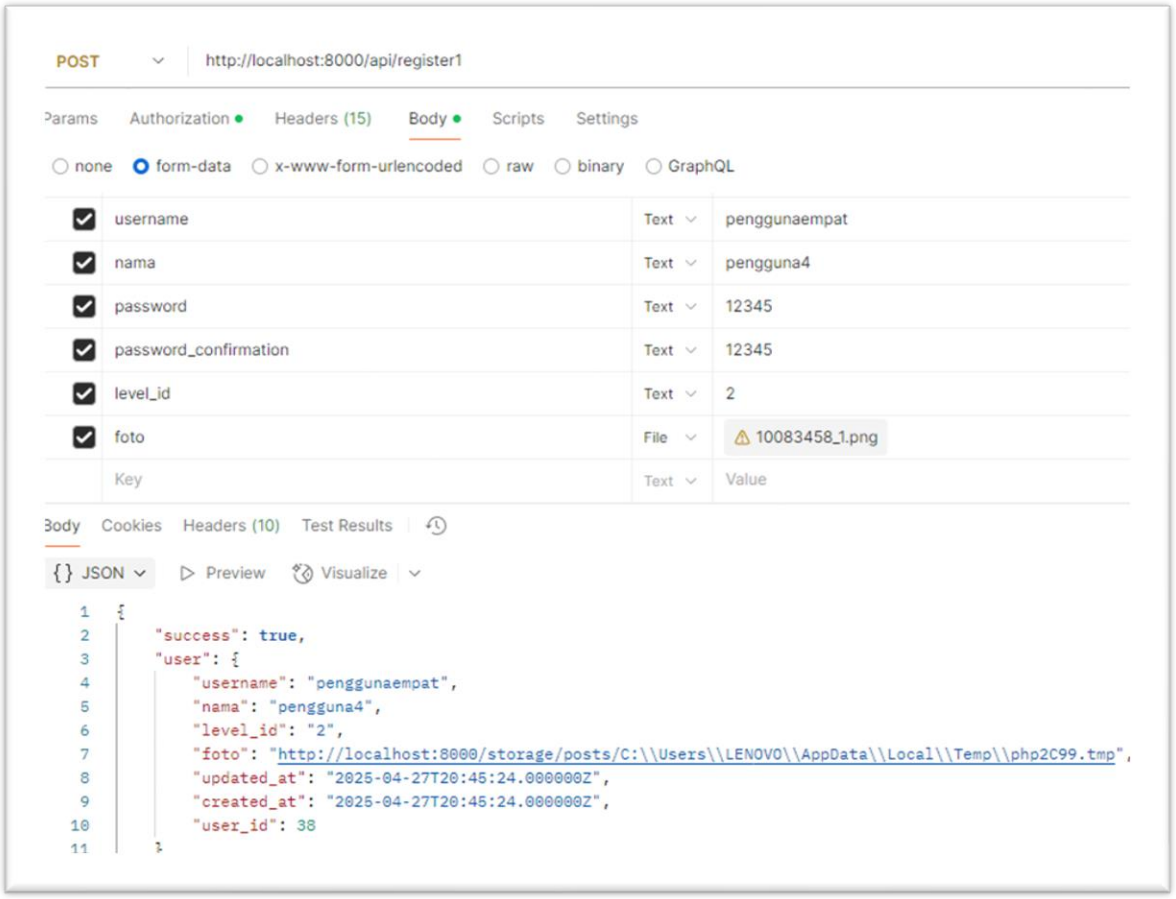
8. Ubah atau tambahkan register1 pada routes/api.php

```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



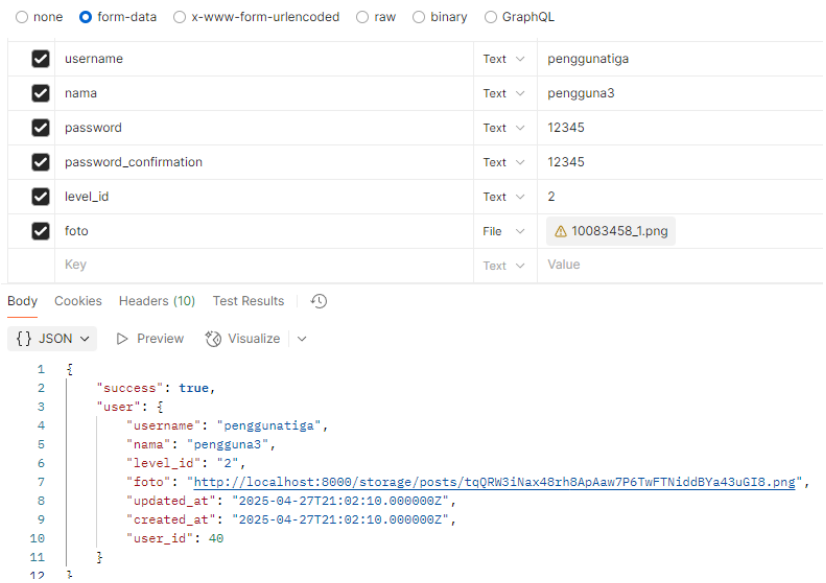


9. Pada Controllers/Api/RegisterController bagian create user ganti dengan

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

```php
$user = UserModel::create(attributes: [
    'username' => $request->username,
    'nama' => $request->nama,
    'password' => bcrypt(value: $request->password),
    'level_id' => $request->level_id,
    'foto' => $foto->hashName(), // Simpan nama file foto
]);
```

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



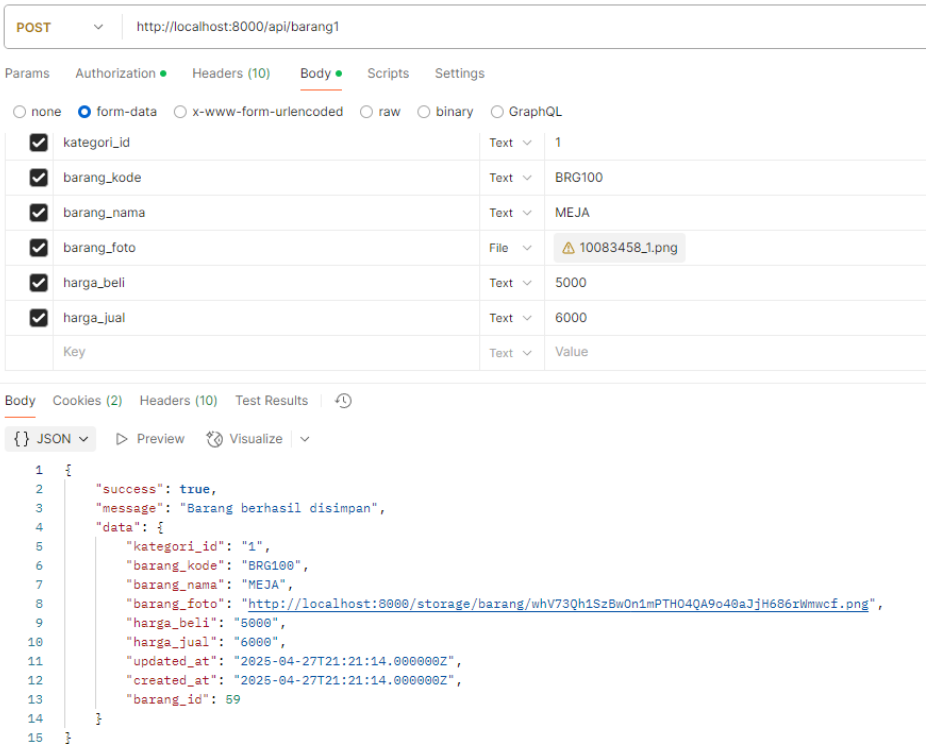
Sesudah pakai hashName(): nama file di server jadi **acak dan unik**

TUGAS

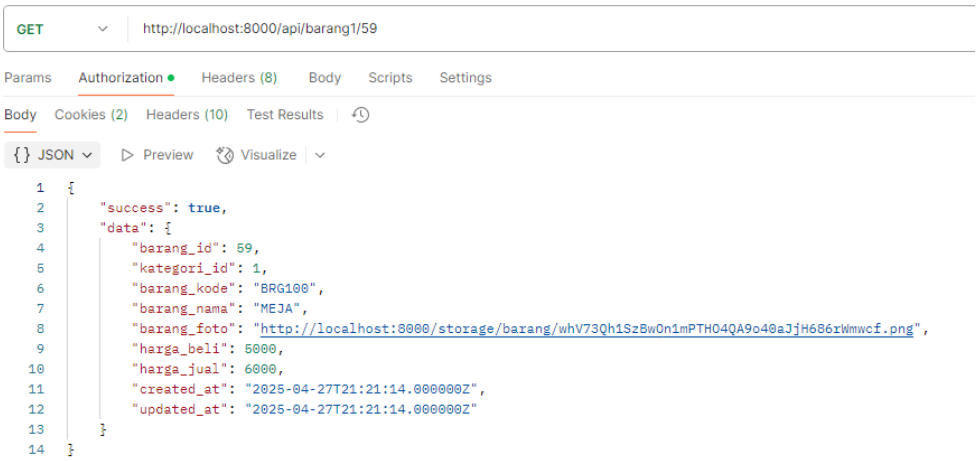
Implementasikan API untuk upload file/gambar pada tabel lainnya yaitu tabel m_barang dan gunakan pada transaksi. Uji coba dengan method GET untuk memanggil data yang sudah di inputkan.

M_barang

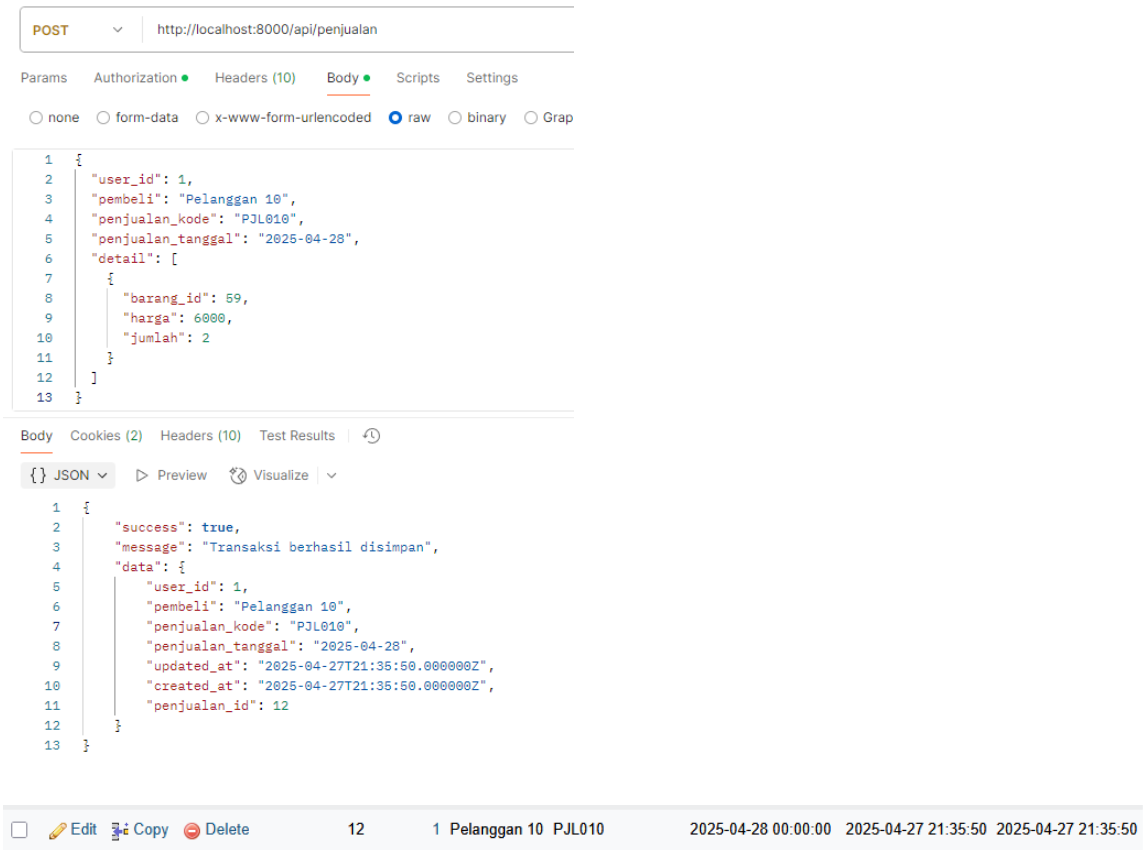
Post



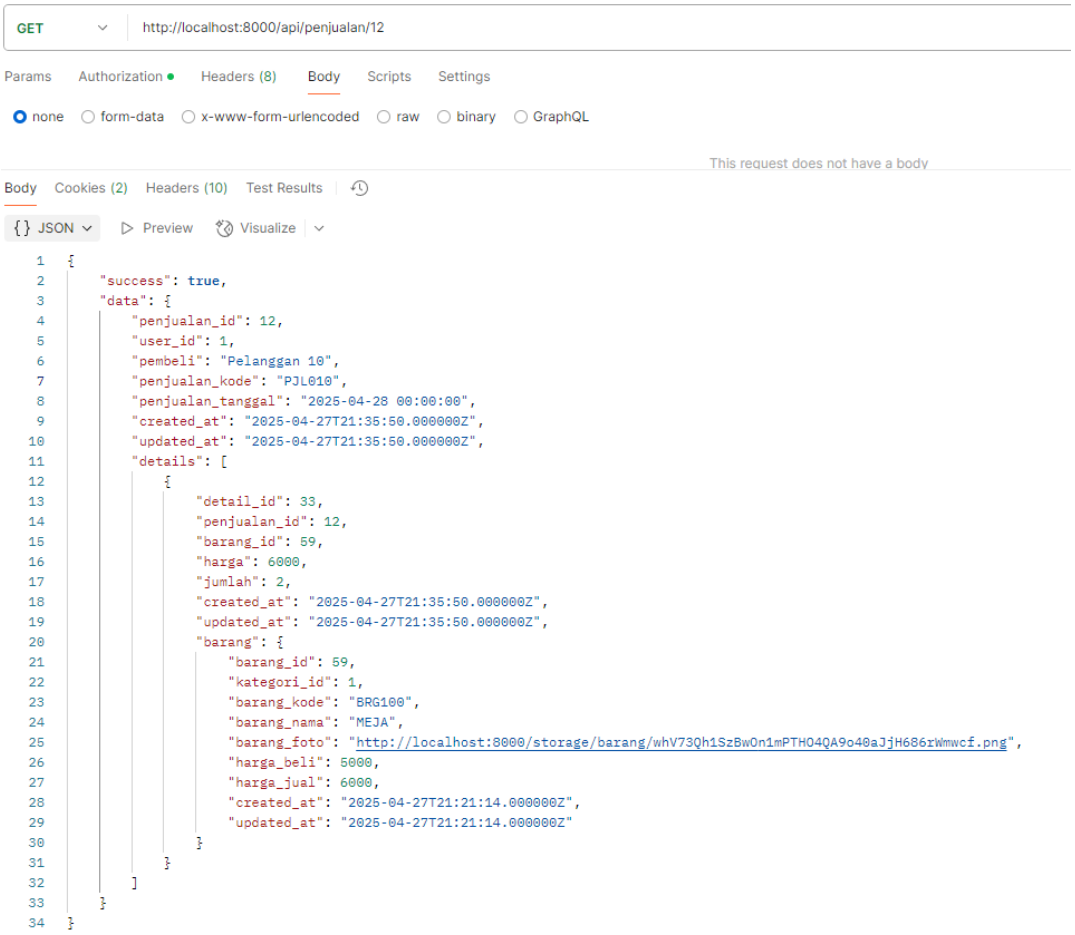
Get



Transaksi



Get




```
{
    "success": true,
    "data": {
        "penjualan_id": 12,
        "user_id": 1,
        "pembeli": "Pelanggan 10",
        "penjualan_kode": "PJL010",
        "penjualan_tanggal": "2025-04-28 00:00:00",
        "created_at": "2025-04-27T21:35:50.000000Z",
        "updated_at": "2025-04-27T21:35:50.000000Z",
        "details": [
            {
                "detail_id": 33,
                "penjualan_id": 12,
                "barang_id": 59,
                "harga": 6000,
                "jumlah": 2,
                "created_at": "2025-04-27T21:35:50.000000Z",
                "updated_at": "2025-04-27T21:35:50.000000Z",
                "barang": {
                    "barang_id": 59,
                    "kategori_id": 1,
                    "barang_kode": "BRG100",
                    "barang_nama": "MEJA",
                    "barang_foto": "http://localhost:8000/storage/barang/whV73Qh1SzBwOn1mPTHO4QA9o40aJjH686rWmwcf.png",
                    "harga_beli": 5000,
                    "harga_jual": 6000,
                    "created_at": "2025-04-27T21:21:14.000000Z",
                    "updated_at": "2025-04-27T21:21:14.000000Z"
                }
            }
        ]
    }
}
```


**** Sekian, dan selamat belajar ****