**1. Setting Up Laravel Project**

**Install Laravel**

Open the terminal and run:

composer create-project laravel/laravel ShoppingCartAPI

**2. Set Up Database**

* **Configure .env File**
* **Edit the .env file:**

DB\_CONNECTION=mysql

DB\_HOST=127.0.0.1

DB\_PORT=3306

DB\_DATABASE=shopping\_cart

DB\_USERNAME=root

DB\_PASSWORD=

* Run database migrations:

php artisan migrate

**3. Install Laravel Passport for Authentication**

composer require laravel/passport --with-all-dependencies

* Run Passport installation:

php artisan migrate

php artisan passport:install

* Modify User.php:

use Laravel\Passport\HasApiTokens;

class User extends Authenticatable {

use HasApiTokens, Notifiable;

}

* Update AuthServiceProvider.php:

use Laravel\Passport\Passport;

public function boot() {

Passport::routes();

}

* Update config/auth.php:

'guards' => [

'api' => [

'driver' => 'passport',

'provider' => 'users',

],

],

**4. Create Product API**

* Generate Model and Controller:

php artisan make:model Product -m

php artisan make:controller API/ProductController

* Define Migration (create\_products\_table):

public function up() {

Schema::create('products', function (Blueprint $table) {

$table->id();

$table->string('name');

$table->text('description');

$table->decimal('price', 10, 2);

$table->integer('stock')->default(0);

$table->timestamps();

});

}

* Run migration:

php artisan migrate

* Define Product Model:

class Product extends Model {

protected $fillable = ['name', 'description', 'price', 'stock'];

}

* Define API Routes in routes/api.php:

use App\Http\Controllers\API\ProductController;

Route::middleware('auth:api')->group(function () {

Route::post('/products', [ProductController::class, 'store']);

Route::put('/products/{id}', [ProductController::class, 'update']);

Route::delete('/products/{id}', [ProductController::class, 'destroy']);

});

Route::get('/products', [ProductController::class, 'index']);

Route::get('/products/{id}', [ProductController::class, 'show']);

* Implement ProductController:

namespace App\Http\Controllers\API;

use Illuminate\Http\Request;

use App\Models\Product;

class ProductController extends Controller {

public function index() {

return response()->json(Product::all(), 200);

}

public function show($id) {

return response()->json(Product::findOrFail($id), 200);

}

public function store(Request $request) {

$request->validate([

'name' => 'required',

'description' => 'required',

'price' => 'required|numeric',

'stock' => 'required|integer'

]);

return response()->json(Product::create($request->all()), 201);

}

public function update(Request $request, $id) {

$product = Product::findOrFail($id);

$product->update($request->all());

return response()->json($product, 200);

}

public function destroy($id) {

Product::destroy($id);

return response()->json(null, 204);

}

}

**8. Test API with Postman**

**Register User**

* **Endpoint:** POST /api/register
* **Body:**

{

"name": "John Doe",

"email": "john@example.com",

"password": "password123"

}

**Login User**

* **Endpoint:** POST /api/login
* **Response:**

{

"token": "eyJ0eXAiOiJKV1QiLCJh..."

}

**Get All Products**

* **Endpoint:** GET /api/products
* **Header:** Authorization: Bearer YOUR\_ACCESS\_TOKEN

**Add New Product**

* **Endpoint:** POST /api/products
* **Body:**

{

"name": "Smartphone",

"description": "Latest 5G phone",

"price": 800.00,

"stock": 20

}

**Update Product**

* **Endpoint:** PUT /api/products/2
* **Body:**

{

"price": 750.00,

"stock": 18

}

**Delete Product**

* **Endpoint:** DELETE /api/products/2