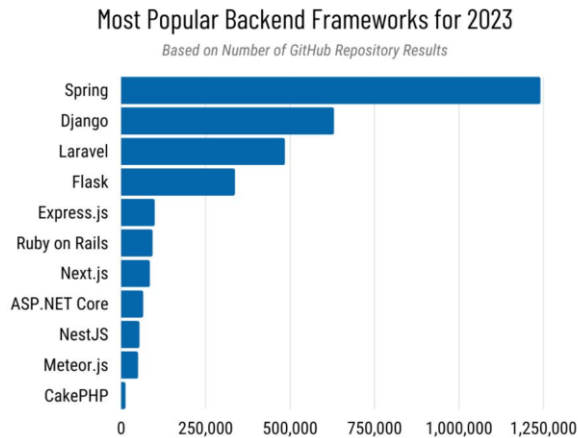


Day-1: Building News Platform with Laravel API - CRUD for Categories

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About Laravel:



Application overview:

Our goal is to create a News Platform's CRUD APIs with the following entities:

- **Category:** To categorize news articles.
- **NewsArticle:** To store news articles.
- **Image:** To associate image album with news articles.
- **User:** To manage user accounts.

Training program:

Day-1	Setup. CRUD for Category entity.
Day-2	CRUD for News, and Image entities. Upload image files to server. One-to-Many and Many-to-Many associations.
Day-3	Recap. Filtering, Sorting, and Pagination of list results.
Day-4	Laravel Passport authentication (OAuth2 token-based) Register, Login, Logout, and Profile APIs for User entity. Public vs. Protected endpoints.
Day-5	Localization. Deployment (Docker).

Learning objectives:

- Laravel API project setup and MySQL configuration.
- Create Category table.
- Create RESTful API for CRUD operations.
- API testing (Postman client).
- Hands-on.

Steps:

1- Tools:

- XAMP (PHP, Apache and MySQL).
- Composer.
- VS Code.
- Postman.

2- Project setup:

- Create a root directory named **labs**.
- Open VS Code.
- File -> Open Folder (select folder **labs**)
- Terminal -> New Terminal.
- Create Laravel project named: **news-app-day1**
- `composer create-project laravel/laravel news-app-day1`
- Change directory to project folder
- `cd news-app-day1`
- Test the server running
- `php artisan serve`

3- Database config:

- Run XAMP control panel.
- Start Apache server
- Start MySQL server
- Navigate to <http://localhost/phpmyadmin>
- Create a new database named **newsapp** (no dashes or spaces allowed in identifier)
- Update **.env** file with database name and save.
- Migrate changes and built-in database schema.
- `php artisan migrate`
- Check database changes in MySQL (phpMyAdmin)

4- Category Module (Migration -> Model -> Factory -> Seeder -> Resource -> Controller -> Route)

- Create Category model, migration, and factory.
- `php artisan make:model Category -mf`
- The flag -mf creates factory, and migrations files in addition to model file.
- **Migration**
- Open **database/migrations/timestamp_create_categories_table.php** file.
- Add fields **name**, and **description**.
- `$table->string('name');`
- `$table->text('description')->nullable();`
- **Model**
- Open **app/Models/Category.php** file.
- Add fields **name**, and **description**.
- `protected $fillable = [`
- `'name',`
- `'description'`
- `];`

- **Factory**
- Open **database/factories/CategoryFactory.php** file.
- Create fake values for fields **name**, and **description**.
 - 'name' => ucwords(fake()->words(rand(1, 3), true)),
 - 'description' => fake()->text(),
- **Seeder**
- Open **database/seeder/DatabaseSeeder.php** file.
- Populate database with 10 dummy categories
 - Category::factory(10)->create();
- Migrate changes to database schema.
 - php artisan migrate
- Run seeding
 - php artisan db:seed
- Check database changes in MySQL (phpMyAdmin)
- **Resource**
- Create Category resource.
 - php artisan make:resource CategoryResource
- Open **app/Http/Resources/CategoryResource.php** file.
- Return only the category's **id**, and **name**.
 - [
 - "id" => \$this->resource->id,
 - "name" => \$this->resource->name,
 -];
- Create **Category** collection.
 - php artisan make:resource CategoryCollection --collection
- Open **app/Http/Resources/CategoryCollection.php** file.
- Return the objects as defined in the resource.
 - [
 - 'count' => \$this->collection->count(),
 - 'categories' => \$this->collection,
 -];
- **Controller**
- Create Category controller.
 - php artisan make:controller CategoryController --api
- Open **app/Http/Controllers/CategoryController.php** file.
- Add the code snippet in (Appendix-I)
- **Route**
- Create routes for Category's CRUD operations.
- Open **routes/api.php** file.
- Add either:
 - Route::resource('category', CategoryController::class)
- Or
 - Route::get('category', [CategoryController::class, 'index']->name('category.index'));

5- Testing API with Postman

- Apache server is started.
- MySQL server started.
- Migrate changes to database schema.
- `php artisan migrate`
- Test the server running
- `php artisan serve`
- Open Postman
- ***http://localhost:8000/api/category/****
- For create, use ***Body -> form-data***
- For update, use ***Body -> x-www-form-urlencoded***

Appendix-I:

CategoryController.php

```
<?php

namespace App\Http\Controllers;

use Illuminate\Http\Request;
use App\Models\Category;
use App\Http\Resources\CategoryResource;
use App\Http\Resources\CategoryCollection;
use Illuminate\Support\Facades\Validator;
use Exception;

class CategoryController extends Controller
{
    /**
     * Display a listing of the resource.
     *
     * @return \Illuminate\Http\Response
     */
    public function index()
    {
        $categories = Category::all();

        return response()->json([
            "status" => "success",
            "error" => false,
            "data" => new CategoryCollection($categories),
        ],200);
    }

    /**
     * Store a newly created resource in storage.
     *
     * @param \Illuminate\Http\Request $request
     * @return \Illuminate\Http\Response
     */
    public function store(Request $request)
    {
        $validator = Validator::make($request->all(), [
            "name" => "required|min:3|unique:categories,name",
        ]);

        if($validator->fails()) {
            return response()->json([
```

```

        "status" => "fail",
        "error" => true,
        "validation_errors" => $validator->errors()
    ]);
}

try {
    $category = Category::create([
        "name" => $request->name,
        "description" => $request->description
    ]);
    return response()->json([
        "status" => "success",
        "error" => false,
        "message" => "Success! category created.",
        "data" => new CategoryResource($category),
    ], 201);
}
catch(Exception $exception) {
    return response()->json([
        "status" => "fail",
        "error" => true,
        "message" => $exception->getMessage(),
    ], 404);
}
}

/**
 * Display the specified resource.
 *
 * @param int $id
 * @return \Illuminate\Http\Response
 */
public function show($id)
{
    $category = Category::find($id);

    if($category) {
        return response()->json([
            "status" => "success",
            "error" => false,
            "data" => new CategoryResource($category)
        ], 200);
    }
    return response()->json([
        "status" => "fail",
        "error" => true,

```

```

        "message" => "Failed! no category found."
    ], 404);
}

/**
 * Update the specified resource in storage.
 *
 * @param \Illuminate\Http\Request $request
 * @param int $id
 * @return \Illuminate\Http\Response
 */
public function update(Request $request, $id)
{
    $category = Category::find($id);

    if($category) {

        $validator = Validator::make($request->all(), [
            "name" => "required|min:3",
        ]);

        if($validator->fails()) {
            return response()->json([
                "status" => "fail",
                "error" => true,
                "validation_errors" => $validator->errors()
            ]);
        }

        $category['name'] = $request->name;

        // if it has description
        if($request->description) {
            $category['description'] = $request->description;
        }

        $category->save();
        return response()->json([
            "status" => "success",
            "error" => false,
            "message" => "Success! category updated.",
            "data" => new CategoryResource($category)
        ], 200);
    }
    return response()->json([
        "status" => "fail",
        "error" => true,

```

```

        "message" => "Failed no category found."
    ], 404);
}

/**
 * Remove the specified resource from storage.
 *
 * @param int $id
 * @return \Illuminate\Http\Response
 */
public function destroy($id)
{
    $category = Category::find($id);

    if($category) {
        $category->delete();
        return response()->json([
            "status" => "success",
            "error" => false,
            "message" => "Success! category deleted."
        ], 200);
    }
    return response()->json([
        "status" => "fail",
        "error" => true,
        "message" => "Failed no category found."
    ], 404);
}

/**
 * New function
 */
public function open_document()
{
    $category = Category::latest()->first();

    return response()->json([
        "status" => "success",
        "error" => false,
        "data" => new CategoryResource($category)
    ], 200);
}
}

```