

ASE230 Project 2

Laravel REST API + Docker + Hugo

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Objectives

- Re-implement Project 1 API in Laravel 12
- Use Eloquent (no raw SQL) + Sanctum auth
- One-command deploy scripts & Docker stack
- Hugo docs + GitHub Pages (CI/CD)

Architecture

- Laravel 12 + Sanctum
- MySQL 8 (Docker)
- Eloquent models: User (ULID), Car, Sale
- Protected routes for write operations

API Endpoints

- `POST /api/auth/login`
- `GET /api/cars`, `GET /api/cars/{id}`
- `POST /api/cars` (auth)
- `PUT /api/cars/{id}` (auth)
- `DELETE /api/cars/{id}` (auth)
- `GET /api/sales`
- `POST /api/sales` (auth)

Data Model

- `users` (ULID, role, password)
- `cars` (make, model, year, price, status)
- `sales` (car_id, customer_name, sale_price)
- Sanctum `personal_access_tokens`

Seeder & Credentials

- Admin user: `admin` / `Carlo`
- Sample cars: Supra, Mustang (available)
- Idempotent seeding prevents duplicate admin
- ULID morphs on tokens to avoid truncation

Setup – Local

```
cd code  
./run.sh
```

- composer install
- php artisan key:generate
- php artisan migrate --seed
- Serves <http://localhost:8000/api>

Evidence – run.sh (local stack)

Setup – Docker

```
cd code  
./setup.sh
```

- Builds PHP 8.4 image
- Starts MySQL + app containers
- Runs migrate --seed
- API at `http://localhost:8000/api`

Auth Flow (Sanctum)

1. `POST /api/auth/login` with username/password
2. Verify password hash
3. Issue Sanctum token
4. Bearer token required for POST/PUT/DELETE

Validation & Responses

- Laravel validation on create/update
- JSON-only responses
- Status codes: 200/201/400/401/403/404
- Deletes return `{deleted: true}` ; 404 on refetch

Scripts

- Local: `code/run.sh` (install, key:generate, migrate --seed, serve)
- Docker: `code/setup.sh` (build, start MySQL+app, migrate --seed)
- Tests: `code/tests/curl.sh` , `code/tests/tests.html`

Docker Stack

- `Dockerfile` (PHP 8.4-cli, composer, artisan setup)
- `docker-compose.yml` (app + MySQL 8)
- Exposes API on `localhost:8000`

Evidence – setup.sh

Evidence – cURL Flow

Evidence – Browser Tester

Hugo Docs

- Content under `presentation/content`
- Custom layouts (no external theme)
- Published via GitHub Actions → GitHub Pages

GitHub Actions (Pages)

- Workflow builds Hugo (`presentation/`) on push to main
- Deploys to `https://tofuszn.github.io/ASE_Project2/`
- Uses built-in `deploy-pages` action

Portfolio

- `/portfolio/` highlights Projects 1 and 2
- Includes screenshots and links to docs and Marp decks
- Live on GitHub Pages

Testing Strategy

- `curl.sh` covers login, CRUD cars, sale, delete
- `tests.html` for manual browser validation
- Seeded admin: `admin` / `Carlo`

Troubleshooting

- Token insert errors → ensure ULID morph on tokens
- DB connection issues → verify `.env` host/port and MySQL up
- Pages links broken → check `baseUrl` and rerun workflow
- Composer/PHP mismatch → Dockerfile set to PHP 8.4

Lessons Learned

- ULID + Sanctum needs `ulidMorphs`
- PHP version must match composer.lock
- Canonical URLs required for GitHub Pages subpath
- Idempotent seeds prevent duplicate admin errors

Next Steps

- Add pagination/filters to cars
- Add CI tests (PHPUnit) for controllers
- Add swagger/OpenAPI docs
- Publish OpenAPI and run tests in Actions