

Laravel 12 Learning Pack

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(2) Project Ideas

BEGINNER LEVEL

1. Task Management App (CRUD + Auth)
2. Inventory Tracker

INTERMEDIATE LEVEL

3. Vehicle Maintenance Monitoring System (AI-Driven)
4. Web-based Booking System
5. Mini CMS (Admin + Blog)

ADVANCED LEVEL

6. SaaS Billing System
7. Full REST API System
8. Modular Enterprise System (HR, Payroll, Timekeeping)

(3) Laravel 12 Cheat Sheet

Basic Commands:

- laravel new project
- php artisan serve
- php artisan migrate
- php artisan make:model Car -m
- php artisan make:controller CarController --resource
- php artisan make:request StoreCarRequest
- php artisan make:middleware CheckRole
- php artisan make:factory CarFactory
- php artisan make:seeder CarSeeder

Routing:

```
Route::resource('cars', CarController::class);  
Route::get('/cars/{car}', fn (Car $car) => $car);
```

Controller Sample:

```
public function store(StoreCarRequest $request) {  
    Car::create($request->validated());  
}
```

Eloquent:

```
Car::all();  
Car::create([...]);
```

Relationships:

```
hasMany(), belongsTo(), belongsToMany()
```

Blade:

```
@extends('layout')  
@section('content')  
{{ $car->brand }}  
@endsection
```

Validation:

```
$request->validate([  
    'brand' => 'required',  
    'year' => 'required|integer|min:1990',  
]);
```

API Resource:

```
class CarResource extends JsonResource {  
    public function toArray($request) {  
        return [  
            'id' => $this->id,  
            'brand' => $this->brand  
        ];  
    }  
}
```

Common Artisan:

```
php artisan route:list  
php artisan optimize
```

```
php artisan migrate:fresh --seed
```

(4) Step-by-Step Laravel CRUD Tutorial

1. Install Laravel:

```
laravel new vehicle_manager
```

2. Create Model + Migration:

```
php artisan make:model Vehicle -m
```

3. Migration Fields:

brand, model, year

4. Create Controller:

```
php artisan make:controller VehicleController --resource
```

5. Routes:

```
Route::resource('vehicles', VehicleController::class);
```

6. Views:

index.blade.php, create.blade.php, edit.blade.php

7. CRUD Logic:

```
Vehicle::create($request->validated());
```

```
$vehicle->update($request->all());
```

```
$vehicle->delete();
```