



LARAGON, LARAVEL & VS CODE SETUP

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Study Guide

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Introduction

Modern PHP development commonly uses Laravel framework together with development tools such as Laragon and Visual Studio Code.

Laragon provides a complete local development environment.

Laravel is a modern PHP framework used for web application development.

VS Code is a lightweight and powerful code editor widely used by developers.

What is Laragon

Laragon is a lightweight local development environment for PHP applications.

It provides Apache, Nginx, PHP, MySQL, Node.js, Composer, and other tools in a single package.

Laragon is faster and simpler compared to traditional tools like XAMPP.

It is widely used for Laravel and PHP development.

Features of Laragon

1. Fast and lightweight.
2. Easy PHP version switching.
3. Automatic virtual hosts.
4. Portable installation support.
5. Built-in Composer and Node.js support.
6. Easy Laravel project setup.

Installing Laragon

Download Laragon from the official website.

Install Laragon using the setup wizard.

Start Apache and MySQL services.

Laragon automatically creates local domains for projects.

Example:

C:\laragon\www\academy

URL:

<http://academy.test>

Understanding Laravel

Laravel is a modern PHP framework used to build web applications.

It follows the MVC (Model-View-Controller) architecture.

Laravel provides routing, authentication, database handling, APIs, validation, and security features.

Laravel improves development speed and code organization.

Features of Laravel

1. MVC Architecture
2. Blade Template Engine
3. Eloquent ORM
4. Authentication System
5. Routing System
6. Database Migration
7. API Development Support
8. Queue and Scheduler Support

Installing Composer

Composer is a dependency management tool for PHP.

Laravel uses Composer to install packages and libraries.

Composer must be installed before creating Laravel projects.

```
composer --version
```

Creating a Laravel Project

Laravel projects can be created using Composer.

The command downloads all Laravel framework files automatically.

```
composer create-project laravel/laravel academy-project
```

Understanding Laravel Folder Structure

Laravel projects contain several important folders.

app folder contains application logic.

routes folder stores routing files.

resources folder contains blade views and frontend files.

public folder is the web root directory.

database folder stores migrations and seeders.

Running Laravel Project

Laravel projects can be started using Artisan commands.

The built-in Laravel development server is useful during development.

```
php artisan serve
```

Introduction to VS Code

Visual Studio Code is one of the most popular code editors.

It supports PHP, Laravel, JavaScript, HTML, CSS, and many other technologies.

VS Code provides extensions, Git integration, terminal support, debugging, and IntelliSense.

Installing VS Code Extensions

Extensions improve Laravel and PHP development experience.

Recommended extensions include:

1. PHP Intelephense
2. Laravel Blade Snippets
3. Laravel Extra Intellisense
4. Prettier
5. GitLens
6. Bootstrap IntelliSense

Opening Laravel Project in VS Code

Laravel projects can be opened directly in VS Code.

Use File → Open Folder option.

Developers can edit routes, controllers, blade files, and models easily.

Using VS Code Terminal

VS Code includes an integrated terminal.

Developers can execute Composer, Artisan, Git, and npm commands directly inside VS Code.

```
php artisan migrate
```

```
php artisan serve
```

```
git status
```

Laravel Routing Basics

Routes define webpage URLs and application endpoints.

Laravel routes are usually stored in web.php file.

```
Route::get('/', function () {  
    return view('welcome');  
});
```

Blade Templates

Blade is Laravel's template engine.

Blade simplifies HTML page development.

Blade supports layouts, components, loops, and conditions.

```
<h1>{{ $title }}</h1>
```

Connecting Database in Laravel

Laravel database settings are stored inside the .env file.

MySQL connection details must be configured correctly.

```
DB_CONNECTION=mysql
DB_HOST=127.0.0.1
DB_PORT=3306
DB_DATABASE=academy
DB_USERNAME=root
DB_PASSWORD=
```

Artisan Commands

Artisan is Laravel's command-line tool.

Artisan commands help automate development tasks.

```
php artisan make:controller StudentController
```

```
php artisan make:model Student
```

```
php artisan migrate
```


Best Practices

Use proper folder structure.

Keep environment variables inside .env file.

Use version control such as Git.

Write reusable and clean code.

Use Laravel migrations instead of manual SQL changes.

Install only required extensions in VS Code.

Summary

Laragon provides a powerful local development environment for Laravel applications.

Laravel simplifies modern PHP application development using MVC architecture.

VS Code improves developer productivity using extensions and integrated tools.

Learning Laragon, Laravel, and VS Code together provides a strong foundation for modern PHP development.