**📘 Laravel Full Stack Development – Day 01 Notes**

**🧱 What is Laravel?**

Laravel is a **PHP-based full-stack web development framework** used to build modern, secure, and scalable web applications.

**Key Stack Components:**

* **Frontend** – HTML, CSS, JavaScript (managed via Laravel Mix and Blade templating)
* **Backend** – PHP (Laravel Framework)
* **Database** – MySQL (default, can be changed)

**✅ Advantages of Using Laravel**

1. **Large Community Support**  
   If you face issues, chances are someone already did—and shared the fix. Forums, GitHub, StackOverflow are full of Laravel discussions.
2. **Robust Error Handling**  
   Laravel's built-in error interface pinpoints **exact line and file** where an error occurs, making debugging straightforward.
3. **Strong Security Features**  
   Laravel uses **token-based authentication** (CSRF Tokens) that blocks unauthorized access, especially from external sources.
4. **Password Hashing**  
   Laravel stores passwords using **one-way hashing (bcrypt)**, meaning it’s encrypted and **cannot be reversed or decrypted**.

**🧰 Installation Requirements**

Before Laravel setup, confirm installation of the following:

| **Tool** | **Purpose** | **Download Link** |
| --- | --- | --- |
| **XAMPP** | PHP & MySQL server | [Download XAMPP](https://www.apachefriends.org/download.html) (Recommended: PHP 8.2.12) |
| **Composer** | PHP dependency manager | [Download Composer](https://getcomposer.org/download/) |
| **Node.js** | Laravel Mix, frontend tools | [Download Node.js](https://nodejs.org/en/download) |
| **VS Code** | Code editor | [Download VS Code](https://code.visualstudio.com/download) |

**🔧 XAMPP Setup (Important Configuration)**

1. Install XAMPP (choose version with PHP 8.2.12 or later).
2. Open XAMPP Control Panel.
3. Click **Config → php.ini** under Apache.
4. Use Ctrl+F to search and **uncomment (remove semicolon ;)** the following lines:
   * extension=zip
   * extension=sodium
   * extension=intl
   * extension=gd
5. Save the file and close the editor.
6. Start **Apache** and **MySQL** from the XAMPP Control Panel.
7. Click **MySQL Admin** – it will open phpMyAdmin to visually manage your database.

**⚙️ Composer Installation Guide**

1. During installation, **tick the following**:
   * ✔ Developer Mode
   * ✔ Add this PHP to your PATH?
2. Do **NOT tick**:
   * ✘ Use a proxy server to connect to internet
3. Leave other options as default.

**🚀 Laravel Installation Steps**

**Step 1: Install Laravel Installer**

Open **Command Prompt** and run:

composer global require laravel/installer

This adds laravel command to your global environment.

**Step 2: Create a New Laravel Project**

1. Navigate to the folder where you want your project.
2. **Right-click → Open Command Prompt/Terminal Here**, then run:

laravel new project\_name

1. Just **press Enter** if asked questions (don’t keep pressing Enter repeatedly unless needed).
2. Wait for it to finish downloading dependencies.

**🧠 Visual Studio Code (VS Code) Installation and Setup**

**✅ During VS Code Installation: Make Sure to Tick These Options**

When installing VS Code, **tick the following checkboxes** and leave all others at their default:

1. ✔ **Create a desktop icon**
2. ✔ **Add “Open with Code” action to Windows Explorer context menu**
3. ✔ **Add “Open with Code” action to Windows Explorer directory context menu**
4. ✔ **Register Code as an editor for supported file types**
5. ✔ **Add to PATH (requires shell restart)**

These options enable smoother access to VS Code via right-click and terminal, and allow system-wide use of code commands in terminal.

**📦 Post-Installation: Extension Setup in VS Code**

Install the following extensions (search them in Extensions panel Ctrl+Shift+X):

| **Extension Name** | **Author** | **Purpose** |
| --- | --- | --- |
| Laravel Extension Pack | Winnie Lin | Laravel helper tools |
| Laravel Pack | MatteDesign | More Laravel tools |
| PHP IntelliSense | Damjan Cvetko | PHP code intelligence |
| Material Icon Theme | Philipp Kief | Beautiful folder/file icons |

After installing Material Icon Theme, select the theme when prompted at the top.

**Terminal Setup in VS Code:**

* Open Terminal with: Ctrl + J
* If not showing command prompt:
  + Click dropdown ⬇️ in terminal
  + Choose **Select Default Profile → Command Prompt**

**📦 Node.js and NPM Setup**

Sometimes after project creation, Laravel may prompt for:

npm install

npm run build

Just **press Enter** to allow the commands to run automatically. This sets up frontend assets.

**🧪 Testing Your Laravel App (Serve Locally)**

1. Make sure **XAMPP's Apache and MySQL** are running.
2. Navigate to your Laravel project folder.
3. Open terminal in that folder and run:

php artisan serve

1. You’ll see something like:

Starting Laravel development server: http://127.0.0.1:8000

1. Open the URL in your browser – You now see the default Laravel welcome page.

**📚 Resources**

* Laravel Official Documentation: <https://laravel.com/docs/12.x>
* PHP Manual: <https://www.php.net/manual/en/>
* Composer Docs: <https://getcomposer.org/doc/>