**Introduction to Laravel**

Laravel is a **powerful tool** that helps us build websites **easily and faster**. It is like a **toolbox** for developers, just like how we use tools to build a house.

**Why Use Laravel?**

Imagine you are building a big house. Instead of making bricks one by one, you buy **ready-made** bricks. Laravel is like those ready-made bricks for web development—it gives us **ready-made** functions for:

✅ Making web pages  
✅ Connecting to a database  
✅ Managing users (login/logout)  
✅ Securing websites

## **Basics of Web Development**

Before learning Laravel, we must understand some basic web development concepts:

### ****What is a Website?****

A website is a collection of pages like a **book**. Each page has **text, images, and links**.

### ****How Websites Work?****

1. A user types a web address (like www.google.com) in a browser.
2. The browser sends a request to a **server**.
3. The **server** finds the webpage and sends it back.
4. The browser displays the page.

| **Technology** | **And its Purpose** |
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| **HTML** | Creates structure (headings, paragraphs, buttons) |

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| **CSS** | Makes pages look beautiful |

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| **JavaScript** | Adds interactivity (clicking buttons, animations) |

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| **PHP** | Handles the backend (logic, database, authentication) |

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| **MySQL** | Stores website data (users, products, posts) |

## **What is Laravel?**

Laravel is a **framework** for PHP. A **framework** is like a **recipe book** for web developers that tells us how to build things **quickly and correctly**.

🔹 Laravel is written in **PHP** (a programming language).  
🔹 It **follows a structure** called **MVC**.

## **Understanding MVC (Model-View-Controller)**

Imagine a **restaurant** :

**Customer** orders food (request) → Controller

**Kitchen** prepares food (fetches from database) → Model

**Waiter** serves food (shows the webpage) → View

|  |  |  |
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| **Part** | **What it does?** | **Example** |
| **Model** | Handles database | Stores and retrieves user details |
| **View** | Shows the webpage | Displays a form, button, or text |
| **Controller** | Handles logic | Decides what happens when you click a button |

### ****Step 1: Install PHP and Composer****

Composer is a **package manager** that helps install Laravel.

✅ Download and install PHP from <https://www.php.net/downloads>  
✅ Download and install Composer from <https://getcomposer.org/>

### ****Step 2: Install Laravel****

Open **Command Prompt (CMD)** and type:

composer create-project --prefer-dist laravel/laravel myproject

### ****Step 3: Run Laravel****

Navigate to your project folder:

cd myproject

php artisan serve

## **Laravel Folder Structure**

Laravel has different folders to keep the code **organized**.

📂 app/ → Stores **models and controllers**  
📂 resources/views/ → Stores **HTML templates** (Blade files)  
📂 routes/ → Stores **URLs of your website**  
📂 database/ → Stores **migrations and seeds**

## **Creating Routes (URLs)**

A **route** is a URL that tells Laravel **what to do**.

### ****Example 1: A Simple Route****

Open routes/web.php and add:

Route::get('/hello', function () {

return 'Hello, Laravel!';

});

## **Creating a Controller**

A **controller** handles what happens when a user visits a page.

### ****Step 1: Create a Controller****

Run this command:

php artisan make:controller StudentController

This creates a file StudentController.php in app/Http/Controllers/.

### ****Step 2: Add a Function****

Open StudentController.php and add:

class StudentController extends Controller {

public function show() {

return "Welcome to Laravel!";

}

}

### ****Step 3: Connect Controller to Route****

Open routes/web.php and add:

use App\Http\Controllers\StudentController;

Route::get('/student', [StudentController::class, 'show']);

## **Blade Templating (HTML Pages in Laravel)**

Laravel uses **Blade** to make HTML pages **dynamic**.

### ****Step 1: Create a Blade File****

Inside resources/views/, create a file welcome.blade.php:

html

Copy code

<!DOCTYPE html>

<html>

<head>

<title>Laravel Blade</title>

</head>

<body>

<h1>Welcome, {{ $name }}!</h1>

</body>

</html>

### ****Step 2: Modify Controller****

Edit StudentController.php:

class StudentController extends Controller {

public function show() {

return view('welcome', ['name' => 'John']);

}

}

## **Working with Databases**

Laravel allows **easy database management** using **Eloquent ORM**.

### ****Step 1: Configure Database****

Open .env file and update:

DB\_CONNECTION=mysql

DB\_HOST=127.0.0.1

DB\_PORT=3306

DB\_DATABASE=laravel\_db

DB\_USERNAME=root

DB\_PASSWORD=yourpassword

### ****Step 2: Create a Model****

php artisan make:model Student -m

this creates:

 **app/Models/Student.php** (Model)

 **database/migrations/xxxx\_create\_students\_table.php** (Migration)

### ****Step 3: Define Migration****

Open migration file and add:

Schema::create('students', function (Blueprint $table) {

$table->id();

$table->string('name');

$table->timestamps();

});

Then run this:

php artisan migrate

### ****Step 4: Insert Data****

Student::create(['name' => 'John Doe']);

### ****Step 5: Retrieve Data****

$students = Student::all();