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Introduction to Laravel

Laravel is a popular open-source PHP web framework designed for developing web applications following the Model-View-Controller (MVC) architectural pattern. It provides an elegant syntax and robust features that help developers build scalable and maintainable applications with ease.

Created by **Taylor Otwell** in 2011, Laravel has grown into one of the most widely used PHP frameworks due to its simplicity, performance, and the vast ecosystem of tools and libraries that come with it.

Here's an overview of key concepts and features that make Laravel a great choice for building modern web applications.

1. MVC Architecture

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Laravel follows the MVC (Model-View-Controller) design pattern, which separates the logic of the application into three main components:

- **Model**: Represents the data and business logic.
- **View**: The front-end or the user interface (UI).
- **Controller**: Acts as an intermediary between Model and View, handling the requests and processing them.

2. Routing

Laravel has a simple and expressive routing system. Routes are defined in the `routes/web.php` file. You can define routes for HTTP requests and map them to controllers, closures, or views.

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

3. Eloquent ORM (Object-Relational Mapping)

Eloquent is Laravel's built-in ORM for interacting with databases. It allows developers to work with databases in an object-oriented way, making database operations simple and intuitive.

Example of a basic Eloquent query:

$user = User::find(1); echo $user->name;

4. Blade Templating Engine

Laravel uses Blade as its templating engine. Blade allows you to define views with simple, clean syntax and helps with layout inheritance, conditional rendering, and loops.

Example of a Blade view:

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

5. Database Migrations

Migrations are a type of version control for your database schema. Laravel's migration system allows you to define your database structure using PHP code, making it easy to share and collaborate on database changes.

Example migration:

```
Schema::create('posts', function (Blueprint $table) {
$table->id(); $table->string('title'); $table->text('body');
$table->timestamps(); });
```

6.Authentication & Authorization

Laravel provides built-in authentication and authorization features, making it easy to implement user login, registration, password resets, and role-based access control.

You can quickly set up authentication with Artisan:

```
php artisan make:auth
```

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Advantages of Using Laravel

1. **Elegant Syntax**: Laravel is known for its clean and readable syntax, which makes development faster and more enjoyable.
2. **Rapid Development**: Laravel's pre-built features like authentication, routing, and Eloquent ORM speed up development time significantly.
3. **Security**: Laravel includes features like password hashing, protection against SQL injection, and CSRF protection out of the box.
4. **Scalability**: With tools like queues, job scheduling, and efficient caching, Laravel is scalable and can be used for both small and large applications.
5. **Large Community**: Laravel has a huge community, which means you have access to a wealth of tutorials, documentation, and third-party packages.

History and Version

- **First Release on June 2011**
- **Current Version 11.0**
- **Developer Name : Taylor Otwell**
- **Written IN php**

Why use Laravel

- **Strong Command Line Support / CMD COMMAND**
- **Large Community / doc**
- **Regular Updates**
- **Fast and simple**

Requirement
- **PHP - 8.1 version of xampp or greater than**
- **Composer**

1) Xampp:

X cross platform
A apache
M mysql
P perl
P php

First check your **xampp** version
its required 8.0> upgrade version so instal

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2)
First Download **Composer** in website

getcomposer.org

2 method

1) **use Manually Windows Installer**
2) **By cmd Command-line installation**

https://getcomposer.org/download/

Than instal on **xampp/php/php.exe**

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2) By cmd Command-line installation

```
php -r
"copy('https://getcomposer.org/installer'
, 'composer-setup.php');"

php -r "if (hash_file('sha384',
'composer-setup.php') ===
'55ce33d7678c5a611085589f1f3ddf8b3c52d662
cd01d4ba75c0ee0459970c2200a51f492d557530c
```

```
71c15d8dba01eae') { echo 'Installer
verified'; } else { echo 'Installer
corrupt'; unlink('composer-setup.php'); }
echo PHP_EOL;"

php composer-setup.php

php -r "unlink('composer-setup.php');"
```

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Than go CMD & check version
Enter==>composer -v // ok

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  Installation of Laravel 11

There are two TYPE

        Laravel Installer

Composer Create-ProjectJust Only Run one time in your pc

composer global require laravel/installer   note: one time only
Then you can create project by belove command every time

laravel new project_name

Now open CMD & GO xampp
cd xampp/htdocs/ourfoldername

```
composer create-project laravel/laravel
laravel_project
```

After Installation Run Project and default start in browser (localhost:8000)

Enter==> htdocs-> laravel_test- >php artisan serve

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Output : welcome

view page : resource/view/welcome.blade.php

url set: routes/web/ set route

==

 now check INDEX PAGE OF LARAVEL 2 way

     a) open in xampp/project_name/public/   //open your index page
     b) localhost:8000   //default create port for laravel

If want to first change in Laravel

1)Project/rourtes/web.php set our routes   // create routes
2)Project/resources/view/mypage.blade.php   // create view page

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Folder Structure of Laravel

App

It is the application folder and includes the entire source code of the project. It contains events, exceptions and middleware declarations, models and in http it contains controllers also. The app folder comprises various sub folders as explained below −

App/model   ==== model.php page banana
App/http/controller/   controller.php page banana
App/http/Middleware/   Routes ke middleware set karne hote he

Conclusion

Laravel is a comprehensive and developer-friendly PHP framework that allows you to build powerful and maintainable web applications with ease. With its elegant syntax, powerful tools, and rich ecosystem, Laravel is

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ideal for developers who want to quickly prototype or build robust, production-ready applications. Whether you're building a small app or a large enterprise system, Laravel provides the necessary tools and flexibility to handle the job.

```
php artisan route:cache
php artisan cache:clear
php artisan config:clear
```