Laravel career path outline (2nd batch)

Module 1

- Live class

  - Introduction to PHP
    - What is PHP
    - Why and How PHP was Created
    - PHP: Programming Language or Server-Side Language
    - PHP: Past, Present, and Future
    - PHP Foundation
    - How to run PHP code
    - Intro to some basic PHP syntaxes
- Recorded classes

  - PHP basics
    - Episode 1: Data Types
    - Episode 2: Type Hinting
    - Episode 3: Type Casting
    - Episode 4: Intro to Variables
    - Episode 5: Intro to Arrays
    - Episode 6: Array Manipulation
    - Episode 7: Intro to Functions
    - Episode 8: Built-In Functions
    - Episode 10: Function Named Arguments
    - Episode 11: Intro to Closures
    - Episode 12: Intro to Loops
- Live class

  - Hands on logical problem solving with PHP

Assignments:

- Some basic problem solving tasks

Module 2

- Live class

- ○ How PHP works behind the scene
  - ■ Intro to PHP SAPI
  - ■ PHP CLI vs PHP FPM
  - ■ Intro to PHP Shells (Built-in shell and PsySh)
- ● Recorded class

  - ○ Autoloading and Dependency management
    - ■ Episode 1: Autoloading in PHP
    - ■ Episode 2: Introduction to Composer
    - ■ Episode 3: Autoloading using Composer
    - ■ Episode 4: Autoloading Files using Composer
    - ■ Episode 5: Managing Dependencies with Composer
    - ■ Episode 6: Utilising Packagist and Packages
    - ■ Episode 7: Advanced Dependency Management
    - ■ Episode 8: How Does Autoloading Using Composer Works?
  - ○ How to build PHP CLI applications
    - ■ Episode 1: Introduction to PHP CLI Applications
    - ■ Episode 2: Handling Command-Line Arguments
    - ■ Episode 3: Building the Application Structure
    - ■ Episode 4: Reading and Writing to the Console
    - ■ Episode 5: Interacting with Files and Directories
    - ■ Episode 6: Error Handling and Exception Management
    - ■ Episode 7: Let's build a 'report generation app' using Symfony Console
- ● Live Class

  - ○ Git intro
    - ■ Intro to Version Control
    - ■ Git Basic Commands
    - ■ GitHub basics

Assignments:

- ● Build an Money manager CLI app

Module 3

- ● Live class

  - ○ PHP as a server-side language
    - ■ How web servers execute PHP
    - ■ Intro to PHP built-in web server
    - ■ Building a simple web application using HTML, CSS, PHP, and Nginx

- Recorded classes

  - Web primer
    - Episode 1: Intro to the Web and Internet
    - Episode 2: Understand Client↔Server Architecture
    - Episode 3: HTTP Basics
    - Episode 4: Cookie, Session
    - Episode 5: Components of a web application
- Live class

  - Form handling in PHP
  - Super Globals in PHP
  - Let's build a simple login form

Assignments:

- Build an anonymous feedback app like HushUp: https://hushup.app/ (Use 'file' as storage)

Module 4

- Live class

  - Intro to OOP in PHP
- Recorded classes

  - Object-oriented PHP
    - Episode 1: What is the Programming paradigm
    - Episode 2: Programming paradigm in PHP
    - Episode 3: OOP basics
    - Episode 4: Principles of OOP
    - Episode 5: Abstract classes
    - Episode 6: Interfaces
    - Episode 7: Polymorphism
    - Episode 8: Constants and Enums
  - PHP Advanced topics
    - Episode 1: Namespaces
    - Episode 2: Composition vs Inheritance
    - Episode 3: OOP principle: Favour composition over inheritance
    - Episode 4: Dependency Injection
    - Episode 5: OOP principle: Program to an Interface
    - Episode 6: OOP principle: Encapsulate what varies
    - Episode 7: Traits

- - - ■ Episode 8: Magic Methods
  - Live class

    - SOLID design principles

Assignments:

- Build a simple Banking transaction manager web app (Use 'file' as storage)

Module 5

- Live class

  - Intro to Database
    - Why we need Database
    - Database Types and Other Data Storage Options
    - How to decide which database to choose
- Recorded class

  - Database basics
    - Episode 1: Database, table, schema
    - Episode 2: Database Modeling
    - Episode 3: Intro to ER Diagram
    - Episode 4: Intro to MySQL
    - Episode 5: DDL vs DML
    - Episode 6: Data types
    - Episode 7: Query in Database
    - Episode 8: Mutation (insert, update, delete) in Database
  - Database drivers and how to connect PHP with database
    - Episode 1: Introduction to PDO (PHP Data Objects)
    - Episode 2: Introduction to MySQLi
    - Episode 3: Establishing a Database Connection
    - Episode 4: Executing Queries
    - Episode 5: Handling Transactions
    - Episode 6: Error Handling and Debugging
- Live class

  - More about requirement analysis and database design
  - Primary key, foreign key and indexing basics
  - Relationships

Assignments:

- Use Database for storage in previous week's assignment

Module 6

- Live class

  - PHP clean code practices
  - PHP FIG and PSR guidelines
- Recorded classes

  - Intro to Framework
    - Episode 1: What is a Framework?
    - Episode 2: Why Do We Need a Framework?
    - Episode 3: Library vs. Framework
    - Episode 4: Micro-framework vs regular framework
    - Episode 5: Framework vs. CMS (Content Management System)
  - How to Build an MVC Framework
    - Episode 1: Introduction to MVC (Model-View-Controller)
    - Episode 2: Initial Setup & Autoload Classes
    - Episode 3: Application Entry Point & Routing
    - Episode 4: Working With Views and Helpers
    - Episode 5: Model Usage and Configuration
    - Episode 6: Refactor and Future Extensions
- Live class

  - Errors and Exceptions in PHP
  - php.ini and other relevant configs

Assignments:

- Build your own MVC framework and implement the previous weeks project with it

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Module 7

- Live class

  - What's new in PHP 7 and PHP 8
- Live class

  - Q/A and Recap class for all the previously discussed topics

Note: No recorded class or assignment for this week

Module 8

- Live class

  - Intro to Laravel
    - What is Laravel? Why is Laravel So Popular?
    - Where to Find Laravel Codes (Framework, core and other components)
    - Intro to Laravel Ecosystem
    - Symfony Components in Laravel
    - A brief about Laravel directory Structure
- Recorded classes

  - Let's start
    - Episode 1: Laravel installation basics
    - Episode 2: Understanding laravel directory structure
    - Episode 3: Intro to Laravel sail
    - Episode 4: Intro to Routing
    - Episode 5: Intro to Controllers
    - Episode 6: Views in Laravel
    - Episode 7: Kernels
  - Development Environment Setup
    - Episode 1: Setup Your Code Editor (VS Code)
    - Episode 2: Recommended VSCode Extensions & Utilities
    - Episode 3: Other Options for Development Environments (online platforms etc.)
- Live class

  - How Laravel works
    - MVC in Laravel
    - Explaining Request-Response Lifecycle in Laravel
    - Intro to config and env

Assignments:

- Build your static portfolio site using Laravel (Use JSON file as storage)

Module 9

- Live class

  - Intro to Basic Authentication in Laravel
  - Intro to DB migration and seeding
  - Database migration best practices
- Recorded classes

  - Intro to Database Management in Laravel
    - Episode 1: Database Migration 101
    - Episode 2: Database Seeding Insights
    - Episode 3: Seeding From External Data Source
    - Episode 4: Multiple Database Connections
    - Episode 5: Intro to DB Query Builder
  - Mastering View in Laravel
    - Episode 1: Intro to Blade Templating Engine
    - Episode 2: Layouts Using Blade Template Inheritance
    - Episode 3: Convert an HTML Template to Laravel Project Using Blade Template Inheritance
    - Episode 4: View Composers
    - Episode 5: Custom Blade Directives
    - Episode 6: Sessions
    - Episode 7: URL Generation
- Live class

  - How blade template works
  - Database schema analysis for this week's assignment

Assignments:

- Build the foundation of Barta (a social networking) app (UI template will be provided)
  - Note:
    - Use DB Query builder

Module 10

- Live class

  - How to handle forms in Laravel
    - CSRF protection
    - Method spoofing
    - Handling form data
    - Form validation

- Recorded classes

  - Validation in Laravel
    - Episode 1: Introduction to Validation (Why and How)
    - Episode 2: Displaying Validation Errors in View
    - Episode 3: Form Request Validation
    - Episode 4: Custom Validators
    - Episode 5: Retrieve Old Form Data on Validation Error
    - Episode 6: Laravel Blade Directives for 'checked' and 'selected' Attributes
    - Episode 7: Custom Validation Rules
    - Episode 8: Custom Error Messages
    - Episode 9: Advanced Validation
  - Useful Laravel Helpers
    - Episode 1: Understanding Laravel Helpers and Their Utility Functions
    - Episode 2: Exploring Common Helpers like Str, Arr, and More
    - Episode 3: Creating Custom Helpers in Laravel
    - Episode 4: Intro to Laravel Collections
    - Episode 5: Commonly Used Collection Methods
  - Deep dive in Query builder
    - Episode 1: Intro to query builder and common db operations
    - Episode 2: Raw queries
    - Episode 3: Join operations
    - Episode 4: Mastering 'WHERE'
    - Episode 5: Ordering, grouping, limit, offset
    - Episode 6: Insert, update, delete
    - Episode 7: Chunking and Lazy Loading
- Live class

  - Building CRUD: the right way

Assignments:

- Build basic features of Barta app
  - Create, edit, delete post
  - Show posts on home feed

Module 11

- Live class

  - Understanding Auth mechanisms
- Recorded classes

- ○ Auth scaffolding
    - ■ Episode 1: Introduction to Starter Kits (Breeze, Jetstream, etc.)
    - ■ Episode 2: Fortify, Sanctum, Passport
    - ■ Episode 3: Guards and User providers
    - ■ Episode 4: Social auth
- ○ Best practices and recommendations
    - ■ Episode 1: PSR and coding conventions
    - ■ Episode 2: Intro to Coding Standard Tools
    - ■ Episode 3: Laravel Pint 101
    - ■ Episode 4: The Art of Semantic Versioning
- ○ Error handling, Logging, and Debugging
    - ■ Episode 1: Exception Handler
    - ■ Episode 2: Rendering exceptions
    - ■ Episode 3: Reporting exceptions
    - ■ Episode 4: Custom HTTP Error Pages
    - ■ Episode 5: Logging
    - ■ Episode 6: Debugging tools and techniques (dd, var dump server, debugbar, ray, telescope, etc.)
- Live class

    - ○ Understanding Middleware

Assignments:

- Add more features to Barta app
    - ○ Description:
        - ■ Use Laravel Breeze to implement complete auth in the 'Barta' app.
        - ■ Implement 'comment' feature.
        - ■ View other user's profile with their posts

Module 12

- Live class

    - ○ Laravel models in-depth
    - ○ N+1 query problem and eager loading
    - ○ Accessor and Mutators
    - ○ Model query scopes
- Recorded classes

    - ○ Eloquent ORM
        - ■ Episode 1: Intro to Eloquent ORM
        - ■ Episode 2: Active record vs. Data Mapper pattern

- - - ■ Episode 3: More about Eloquent
      - ■ Episode 4: Eloquent vs. Query builder
      - ■ Episode 5: Eloquent Relationships
      - ■ Episode 6: Route model binding
      - ■ Episode 7: Model factories
    - ○ File storage
      - ■ Episode 1: Explaining file storage mechanism, disks, and drivers
      - ■ Episode 2: File store and retrieval
      - ■ Episode 3: Restricting file access (public files vs. auth-protected files)
      - ■ Episode 4: Scaling issue for file
      - ■ Episode 5: Intro to Laravel media library package
    - ○ Facades
      - ■ Episode 1: Demystifying facades
  - ● Live class

    - ○ Thin controller, fat model, service pattern, Repository pattern etc.

Assignments:

- ● Implement the Eloquent Model and a few new features in 'Barta' app
  - ○ Description:
    - ■ Instead of DB query builder, use the Eloquent model.
    - ■ Users should be able to post images in the post (only one image per post).
    - ■ Users should be able to add profile pictures.
    - ■ Implement search functionality with user nick name, user full name or email

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Module 13

- ● Live class

  - ○ Laravel naming conventions and best practices
- ● Recorded classes

  - ○ Laravel Architecture concepts
    - ■ Episode 1: Reflections in PHP
    - ■ Episode 2: Service Container in Laravel
    - ■ Episode 3: Service Providers in Laravel
    - ■ Episode 4: Service container and service provider practical example
  - ○ Access Control
    - ■ Episode 1: Guard vs. Gate vs. Policy
    - ■ Episode 2: Role, permission management

- - - ■ Episode 3: Authorization practical example
    - ○ Working with Date & Time
      - ■ Episode 1: Working with Date & Time in PHP
      - ■ Episode 2: Introduction to Carbon
      - ■ Episode 3: Exploring Carbon's Features and Functionalities
      - ■ Episode 4: Available Methods for Date and Time Manipulation
      - ■ Episode 5: Date, DateTime, and timestamp fields in DB
      - ■ Episode 6: Explaining created_at, updated_at and deleted_at
- Live class

  - ○ Intro to TailwindCSS and AlpineJS

Assignments:

- Implement 'Admin dashboard' for 'Barta' app

Module 14

- Live class

  - ○ Intro to REST
    - ■ Naming
    - ■ Proper use of HTTP methods and status codes
    - ■ Authentication
    - ■ API Versioning
    - ■ API Rate Limiting
    - ■ API Documentation
    - ■ Introduction to Fractal (Package by PHP League)
- Recorded classes

  - ○ RESTful API development
    - ■ Episode 1: Intro RESTful API
    - ■ Episode 2: Intro API clients
    - ■ Episode 3: RESTful API development in Laravel
    - ■ Episode 4: API development best practices
    - ■ Episode 5: Eloquent API resources
    - ■ Episode 6: Error handling in API
    - ■ Episode 7: API Authentication
- Live class

  - ○ Caching
    - ■ What is caching and why do we need it?
    - ■ Caching Patterns and Techniques

- ■ Cache drivers
- ■ Cache usages
- ■ Cache tags
- ■ How to manage Cache keys effectively

Assignments:

- ● Assignment 12: Build a RESTful API for a URL shortener service

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Module 15

- ● Live class

  - ○ Console commands
  - ○ How to create your own console command
  - ○ Some use cases for console commands
  - ○ Laravel zero
  - ○ Laravel Prompt
- ● Recorded classes

  - ○ Asset bundling
    - ■ Episode 1: Asset Bundling using Vite
    - ■ Episode 2: Asset Bundling using Mix
  - ○ Full-stack app development without front-end JS frameworks
    - ■ Episode 1: Introduction and Project Overview
    - ■ Episode 2: Project Requirements Discussion
    - ■ Episode 3: Setting Up The Project
    - ■ Episode 4: Configuring Models, Migrations, and Factories & Seeders
    - ■ Episode 5: Setting Up Routes, Views, and Controllers
    - ■ Episode 6: Completing the Frontend User Interface
    - ■ Episode 7: Admin Dashboard: Implementing Job CRUD Operations
  - ○ Brushing up Front-end skills
    - ■ Episode 1: Intro to VueJS
    - ■ Episode 2: VueJS 101
    - ■ Episode 3: Let's Play With VueJS
  - ○ Full-stack app development with front-end JS frameworks
    - ■ Episode 1: Intro to InertiaJs
    - ■ Episode 2: Project Overview in a Nutshell
    - ■ Episode 3: Initiating the Project Setup Ritual
    - ■ Episode 4: Interactive Homepage Design and Functionality
    - ■ Episode 5: Brushing Up The Job Details Page
    - ■ Episode 6: Polishing the Jobs Listing Page
    - ■ Episode 7: Mastering Single Job Display in the Dashboard

- - ■ Episode 8: Dashboard Magic: Creating New Job Entries
    - ■ Episode 9: Crafting Perfection: Editing Jobs and Wrapping Up
  - Live class

    - ○ Intro to Livewire
    - ○ How to choose the front-end, back-end stack in Laravel

Assignments:

- Use Vue or Livewire to implement the Home feed of 'Barta' app along with the 'show more' feature.

Module 16

- Live class

  - ○ Events
    - ■ Intro to Events
    - ■ Default events provided by Laravel
    - ■ Event and Listeners - how to use them
- Recorded classes

  - ○ Mail
    - ■ Episode 1: Mailing Basics
    - ■ Episode 2: Mail Drivers
    - ■ Episode 3: Email and Local Development
    - ■ Episode 4: Email Sending
    - ■ Episode 5: Marketing email
  - ○ Notifications
    - ■ Episode 1: Intro to notifications
    - ■ Episode 2: Creating and Sending Notifications
    - ■ Episode 3: Quick note about notifications
    - ■ Episode 4: Real life example
- Live class

  - ○ Broadcasting in Laravel
    - ■ Intro to WebSockets
    - ■ Intro to Laravel Reverb
    - ■ Understanding the Concept of Broadcasting in Laravel
    - ■ Configuring Laravel's Broadcasting Drivers and Settings

Assignments:

- Implement real-time notification and email feature for the 'Barta' app

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Module 17

Live class:

- Intro to FilamentPHP

Live class:

- Q/A and recap of previous classes

Note:

- No recorded class or assignment will be given this week.

Module 18

- Live class

  - Processes
    - Intro to Processes
    - Example and use cases of Processes
  - Task Scheduling in Laravel
    - Introduction to Laravel's Task Scheduling Feature
    - Scheduling and Executing Tasks at Specific Intervals
    - Configuring and Managing Scheduled Task
- Recorded classes

  - Queue
    - Episode 1: Intro to Queue and Job
    - Episode 2: How to manage async jobs using Queue
    - Episode 3: Handling failed jobs
    - Episode 4: Intro to Laravel Horizon
  - Localization
    - Episode 1: Intro to localization
    - Episode 2: Configuring Language Files and Language Switching
    - Episode 3: How to manage localization in Front-end frameworks (Vue/React)
- Live class

- Laravel Queue best practices and real-life examples

Assignments:

- Build a Vaccine registration system

Module 19

- Live class

  - Working with external services
    - HTTP Client in Laravel
    - Consuming External Services (Third-party API Integration) using HTTP Client
- Recorded Class

  - Intro to Saloon
  - Webhook
    - Episode1: What is Webhook
    - Episode 2: How to Implement a Webhook in Laravel
    - Episode 3: How to Consume a Webhook in Laravel
- Live class

  - Deployment
    - Understanding the Deployment Process
    - Preparing the Application for Production Deployment
    - Deploying a Laravel Application to Hosting
    - Local vs. Staging vs. Production Environment

Assignments:

- Build a Google form + Zapier + Laravel integration by implementing webhook.

Module 20

- Live class

  - Testing basics
  - Different types of tests
  - Intro to TDD

- Recorded class

    - Episode 1: Intro to PHPUnit
    - Episode2: Data providers
    - Episode 3: Mocking
    - Episode 4: Testing in Laravel
    - Episode 5: HTTP Tests
    - Episode 6: Browser tests
- Live class

    - Testing in Laravel Using PEST

Assignments:

- Write tests for 'Vaccine registration system'

Module 21

- Live class

    - Securing a Laravel App
        - Hashing and Encryption in Laravel
        - Password rehashing
        - Other Security Concerns
- Recorded class

    - Scaling a Laravel app
        - Episode 1: Laravel Application Scaling Techniques
        - Episode 2: Strategies for Scaling a Laravel Application
        - Episode 3: Configuring and Utilizing Technologies Like Redis and Memcached
- Live class

    - Intro to System design

Assignments:

- Propose how you would design the vaccine registration system for the entire country
    - Submit your system design diagram

Module 21

- Live class

    - Laravel ecosystem products and tools
- Recorded class

    - How to build a multi-tenant Laravel App
        - Introduction to Multi-tenancy in Laravel
        - Understanding the Concept of Multi-Tenancy and Its Use Cases
        - Handling Tenant Isolation
        - Database Separation
        - Tenant-Specific Customization in Laravel
- Live class

    - Soft skills for software engineers

Assignments:

- Convert a single-tenant app to a multi-tenant app

Module 22

- Live class

    - GitHub and how to collaborate in a team
- Recorded class

    - How to build your own composer package and publish in Packagist
        - Episode 1: Introduction to Composer Packages
        - Episode 2: Setting Up Your Package Structure
        - Episode 3: Documenting Your Package
        - Episode 4: Versioning and Releasing Your Package
        - Episode 5: Maintaining and Updating Your Package
- Live class

    - Intro to some popular 3rd party Laravel Packages
        - Packages from Spatie, Tightenco, Beyondcode
        - Other popular "Open Source Community-Driven Packages" to make the development easier.

Assignments:

- Build a Laravel package

Module 23

- Live class

  - Modular Laravel
  - Intro to 'Laravel Actions'
- Live class

  - Case study analysis of different project requirements and scenarios
  - Assign Team projects

Next

- Team projects, Mock interviews, Job placement preparation, etc.