

A decorative background pattern on the left side of the slide consists of a vertical grid of blue lines forming a circuit board or tree-like structure, with small blue circles at the intersections.

FALL 2023
INTRODUCTION TO
SOFTWARE
DEVELOPMENT
FRAMEWORK

WEBD 5201 WEB DEVELOPMENT FRAMEWORKS

TOPICS

Introduction to Software development framework

Introduction to MVC - Model View Controller

Introduction to PHP - Laravel



SOFTWARE DEVELOPMENT FRAMEWORK

A framework will act as the structure on which you can build software.

Using a framework will saves time and reduce the risk of errors.

ADVANTAGES OF FRAMEWORKS

Clean and
easily
adaptable code

Increase in code
re-usage

Simple testing
and debugging

Reduced
Duplicate code

Documentation
support

FRAMEWORK TYPES



Web Framework



Mobile Framework



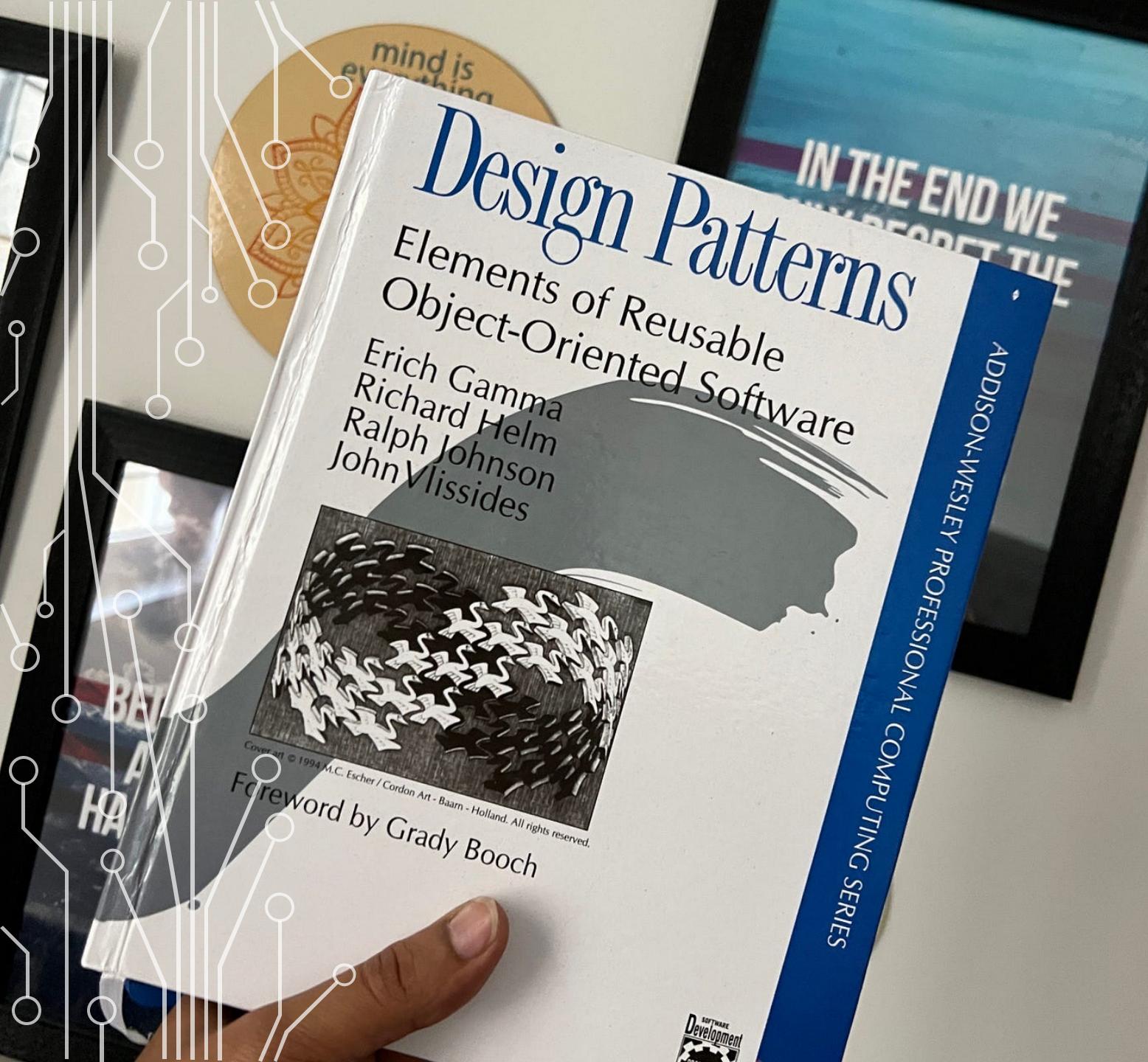
Database Framework



Testing Framework

DESIGN PATTERNS

- Design patterns are premade blueprints to solve design problems in the code.
- Design patterns define a common language that software development teams can use to communicate efficiently



CLASSIFICATION OF DESIGN PATTERNS

Creational Pattern - Design pattern based on object creation

Structural Pattern – Design pattern-based assembly of object and class structures

Behavioral Pattern – Design pattern that identifies common communication patterns among objects

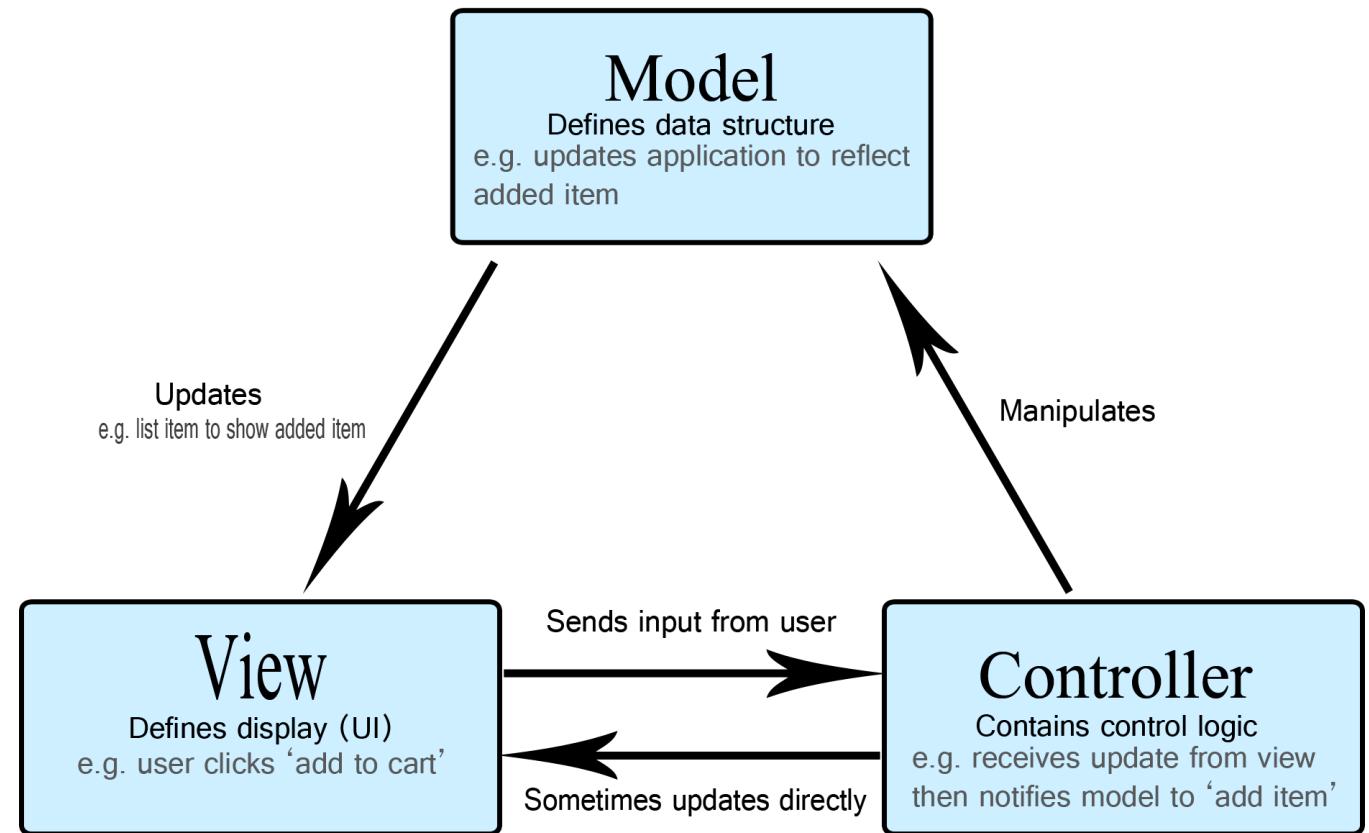
A dark blue background featuring a complex network of glowing, multi-colored lines (yellow, red, green, blue) forming a grid-like structure. Superimposed on this are several white, circular nodes connected by white lines, resembling a circuit board or a neural network. The overall effect is futuristic and technological.

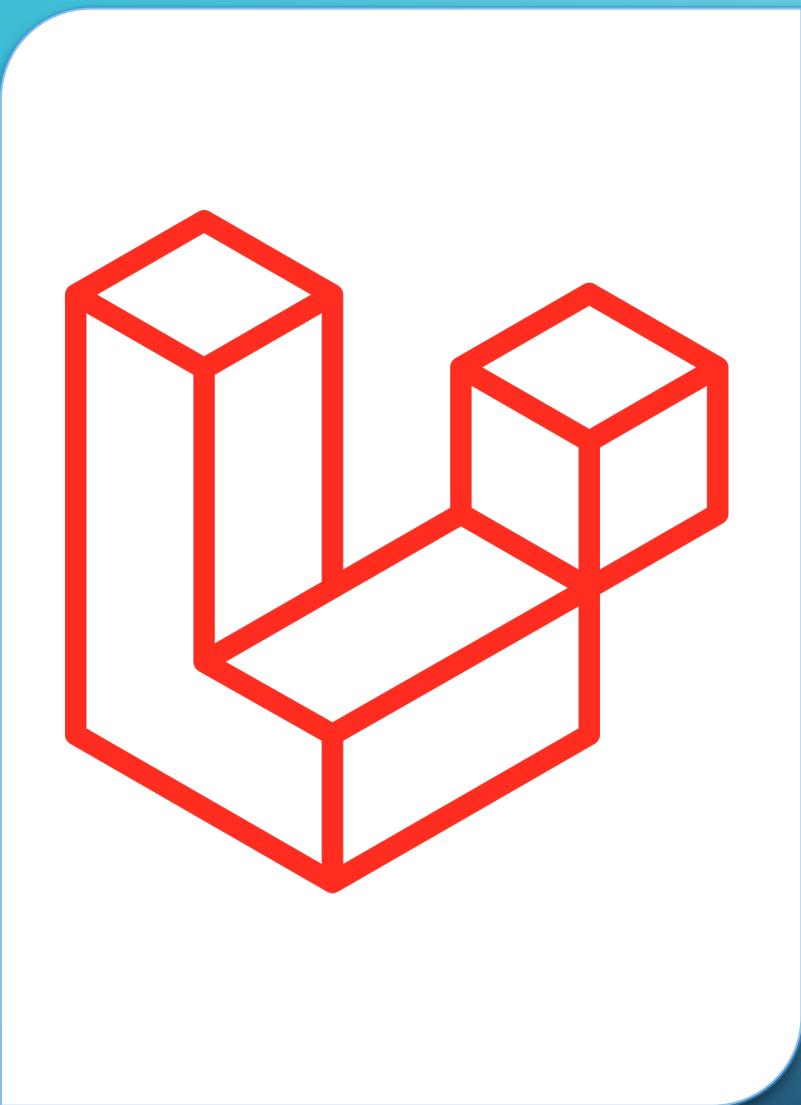
ARCHITECTURAL DESIGN PATTERN

- The architectural design pattern defines the high-level structure and organization of a software system.
- The architectural design pattern guide decision in system scalability, performance and maintainability of the system.
- MVC – MODEL VIEW CONTROLLER, MICROSERVICE PATTERN, SERVICE ORIENTER ARCHITECTURE (SOA), MONOLITHIC ARCHITECTURE ETC

MVC – MODEL VIEW CONTROLLER

- Architectural design pattern that will separates an application into three main logical components Model, View and Controller. Clear separation of Business logic, UI logic and Input logic.
- Model – Model represent the application data and the business rules
 - View – Presentation logic
 - Controller – Controller will intercept the user request from the view and passes to the model





LARAVEL FRAMEWORK

- MVC PHP framework
- Scalable Web Application
- Component Reuse
- Composer – Includes all the dependencies and libraries required for the project
- Artisan – Built-in CLI

FEATURES

- Routing – Flexible approach for user to define routes in the web application
- Query Builder and ORM Support
- Template Engine – Blade Template Engine
- Authentication
- Email Support
- Event Bus

LAB 1: INSTALL LARAVEL LOCALLY & DEMO

- [Laracasts](#) to watch and work through Lessons 1 through 16 tutorials
- This lab will require configuring your laptop to run Apache and PHP with a MySQL server. This environment will be used to load Composer, which then will be used to load Laravel.
- Assignment 1 Deadline: 22nd September, 2023.

LAB 2: ADVANCED LARAVEL WEB APPLICATION

- You are to go to the [Laracasts](#) to watch and work through Lessons 17 through 32 tutorials (inclusive) in the *Laravel 5.4 From Scratch* series.
NOTE: do not mistakenly work thought the `Laravel 4 From Scratch` or the `Laravel 5.2 From Scratch` series.
- Assignment 2 Deadline: Oct 6th, 2023

SUBMISSION

Method 1: Provide a demo on your laptop and a zip file of your project

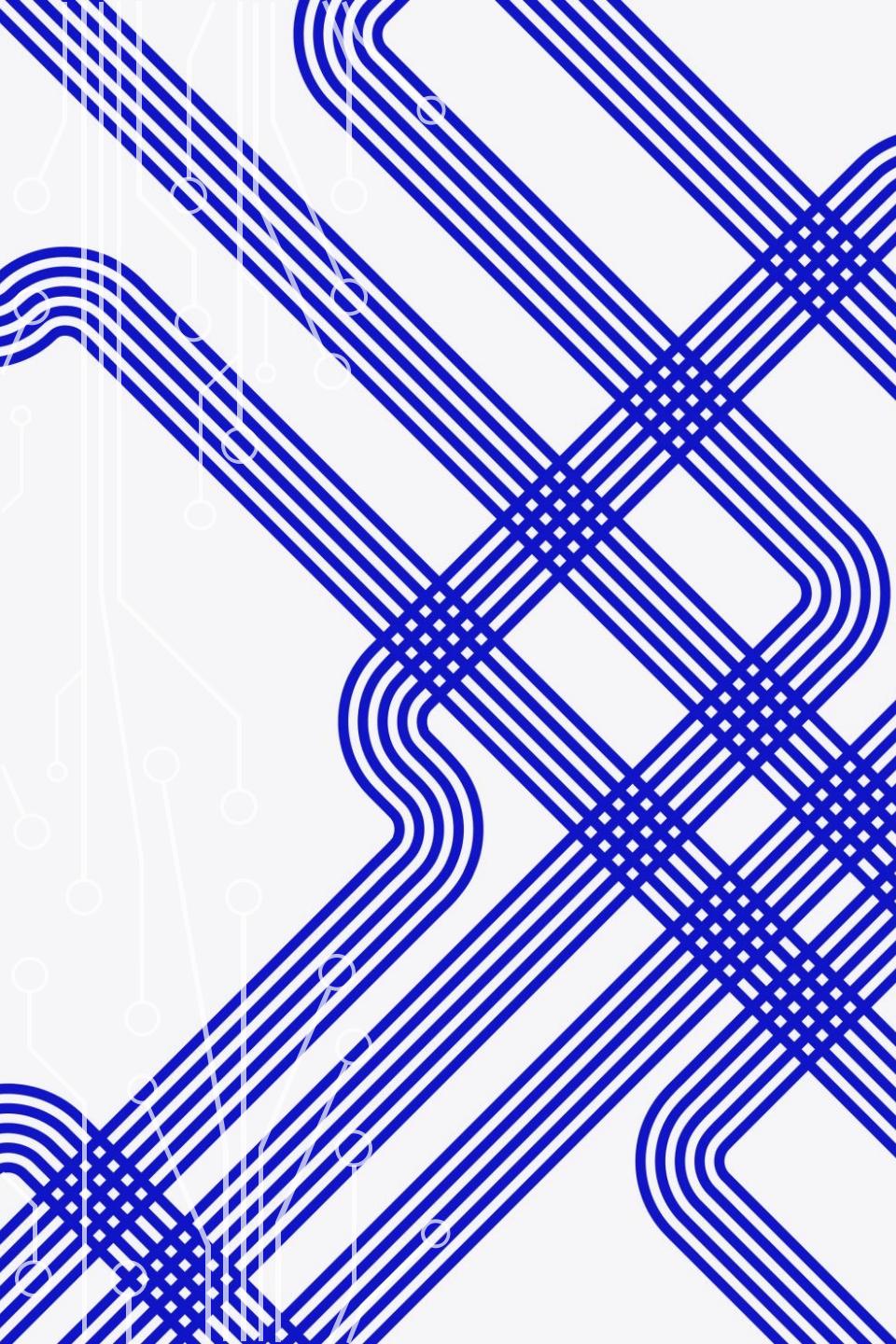
Method 2: Provide a video of your project, a single-page document with your project's steps and a zip file.

Zip files could be sent directly in teams to me.



TEST

- Test – PHP Laravel
- 50 Points - Short Answers and multiple-choice questions
- Oct 10th, 2023

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REFERENCE

- <https://developer.mozilla.org/en-US/docs/Glossary/MVC>
- <https://www.turing.com/blog/software-architecture-patterns-types/>
- <https://refactoring.guru/design-patterns>

ACTIVITY

INSTALL LARAVEL WITH THE COMPOSER

[HTTPS://LARACASTS.COM/SERIES/LARAVEL-FROM-SCRATCH-2017](https://laracasts.com/series/laravel-from-scratch-2017)