

## Intro

- Intro to backend
- Server hardware types
- Server software types (web - file - mail - database ...)
- Web servers (what are they and how do they work?)
- Hosting
- HTTP protocol
- IP addresses - domain names - DNS
- Backend programming technologies
- Xampp (what is - installation)
- Intro to php

## PHP

- Php files
- Variables
- Data types (integer - float - string - null - array) (will be explained later: resources - objects)
- Numbers: commonly used functions - operators (arithmetic - assignment - increment/decrement - comparison)
- Strings: commonly used functions - operators (concatenation)
- Arrays: commonly used functions - operators (array)
- Type juggling - Type casting
- Constants
- Conditions (if - switch - match) - operators (logical - conditional assignment)
- Loops (for - while - do while - foreach)
- Dynamic HTML content
- Functions (arguments - return - type hinting - named arguments - default values - global keyword - static keyword)
- Anonymous functions - callbacks
- Error handling - exceptions
- Requests (\$\_GET - \$\_POST - \$\_REQUEST)
- Validation - sanitizing
- File upload (\$\_FILES)
- Server information (\$\_SERVER)
- File includes

- Sessions (\$\_SESSION)
- Cookies (\$\_COOKIE)
- Date & time
- File system (resource data type - read - write - append)
- PHP with JSON

## **OOP**

- Intro to OOP
- Classes - objects
- Properties - methods - this keyword
- Magic methods (construct - destruct)
- Inheritance
- Access modifiers
- Abstract classes - interfaces
- Oop principles
- Traits
- Static
- Method chaining
- Namespaces
- SOLID principles
- Composer (install packages - autoloading)
- Design Patterns
  - Intro
    - Singleton
    - Factory
    - Registry
    - Dependency Injection
    - >>>

## **Database**

- Intro to database
- Types (SQL vs. NoSQL)
- DDL vs. DML
- ERD (entities - relationships)
- Schema design - tables - field data types
- Constraints - attributes
- Keys (primary - foreign)
- Insert - update - delete
- Select

- Where conditions (comparison - logical - is - in - between - like)
- Ordering
- Limiting
- Aggregate functions
- Grouping
- Column math operations
- Commonly used functions (strings, numbers, date & time)
- subqueries
- unions
- Joins (inner - right - left - full)
- Indexes
- Triggers
- Stored procedures

## **PHP & MySQL**

- Connect php to mysql (mysqli - pdo)
- Security (prepared statements - xss protection - ...)
- APIs (intro - types - REST API)
- Retrieving data from database (html pages - json)
- CRUD
- Authentication (intro - session based - token based)

## **MVC**

- Intro to MVC
- Routing
- Controllers
- Views
- Models

## **Laravel**

- Intro to laravel
- Folder structure
- Artisan commands
- Migrations
- Models - Eloquent ORM
- Routes
- Controllers
- Request & Response

- Views - Blade template engine
- CRUD
- Pagination
- CSRF protection
- Validation - rules
- File storage
- Sessions
- Model relationships
- Seeders - factories
- Laravel with AJAX
- Authentication (session based)
- Email verification - password reset
- Middlewares
- Authorization (roles - permissions)
- localization
- Laravel APIs
- Resources
- Token based authentication
- JWT
- Packages (sanctum)
- Mail
- Jobs - Queues
- Cache
- Events - Listeners
- Pusher real time

## **Deployment**

- Cpanel

## **Product Management**

- SDLC