



DDT _ Data Dose Tech

Full Stack Content

📌 General Structure of the Educational Content

1 Introduction to Full Stack Development

- **What is Full Stack Development?**
 - **Difference between Frontend and Backend.**
 - **Overview of the technologies used (PHP, Laravel, React, MySQL, Git).**
 - **Essential development tools (VS Code, Docker, Postman, Composer, npm).**
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2 Web Development Basics (HTML, CSS, JavaScript)

📌 HTML5

- **Web page structure (Semantic HTML: <header>, <section>, <article>).**
- **Forms and data input.**
- **Multimedia (images, video, audio).**

📌 CSS3

- **Flexbox and Grid Layout.**
- **Animations and Transitions.**
- **Responsive Design (Media Queries, Mobile-First Approach).**
- **CSS Frameworks (Bootstrap, Tailwind CSS).**

JavaScript (ES6+)

- **Core concepts (Variables, Functions, Loops).**
 - **DOM Manipulation (dynamically modifying HTML elements).**
 - **Async Programming (Promises, Async/Await, Fetch API).**
 - **Modular JavaScript (ES6 Modules).**
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3 Backend Development with PHP & Laravel

Basic PHP

- **Syntax, variables, functions.**
- **Forms handling and \$_GET, \$_POST.**
- **Sessions and cookies management.**

Laravel Framework

- **MVC Architecture (Model, View, Controller).**
 - **Routing (request handling).**
 - **Blade templating (dynamic user interfaces).**
 - **Eloquent ORM (database interaction).**
 - **Authentication & Authorization (login, permissions).**
 - **API Development (RESTful APIs using Laravel).**
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4 Frontend Development with React.js

Basic React

- **Introduction to React and the Virtual DOM.**
- **Components (functions, classes, Hooks).**
- **State Management (useState, useEffect, useContext).**
- **React Router (SPA route handling).**
- **API Integration (connecting Frontend to Backend with Axios/Fetch).**

Advanced React

- **Redux or Zustand for state management.**
 - **Custom Hooks.**
 - **Performance Optimization (React.memo, useCallback).**
 - **Testing React Apps (Jest, React Testing Library).**
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5 Databases with MySQL

- **Database Design (Normalization, ER Diagrams).**
 - **SQL Queries (SELECT, JOIN, GROUP BY, Subqueries).**
 - **MySQL interaction from PHP/Laravel (Eloquent ORM, Raw Queries).**
 - **Performance optimization (Indexing, Query Optimization).**
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6 Version Control with Git & GitHub

- **Git Basics (init, commit, branch, merge, rebase).**
 - **Collaboration on GitHub (Pull Requests, Issues, Projects).**
 - **Git Workflows (Git Flow, Feature Branches).**
 - **Resolving conflicts (Merge Conflicts).**
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7 Application Deployment

- **Web Hosting (Shared Hosting, VPS, Cloud like AWS, DigitalOcean).**
 - **Deploying Laravel apps (Apache/Nginx, SSL, Domain setup).**
 - **Deploying React apps (Netlify, Vercel, AWS S3).**
 - **CI/CD using GitHub Actions or Laravel Forge.**
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8 Web Application Security

- **OWASP Top 10 (SQL Injection, XSS, CSRF).**
 - **Laravel protection mechanisms (CSRF, Validation, Hashing).**
 - **Advanced Authentication (JWT, OAuth2, Sanctum).**
 - **HTTPS and Secure Headers.**
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9 Project Management

- **Agile and Scrum (Sprints, Backlog, User Stories).**
 - **Task Management Tools (Trello, Jira, Notion).**
 - **Project Documentation (Markdown, Swagger for APIs).**
 - **Best practices for teamwork (Code Reviews, Git Collaboration).**
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10 Final Project (Full Stack App)

- **Build a complete application (e.g., Blog, Task Management System, E-commerce site).**
 - **Connect Frontend (React) with Backend (Laravel API).**
 - **Deploy the project online.**
 - **Document the project and publish it on GitHub.**
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Features of This Educational Content

- ✓ **Hands-on learning (examples, exercises, projects).**
 - ✓ **Advanced-level content for engineers (best practices).**
 - ✓ **Covers all aspects of Full Stack Development.**
 - ✓ **Focus on security and performance.**
 - ✓ **Project management and team collaboration with Git.**
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Resources

- **Books: *Eloquent JavaScript*, *PHP: The Right Way*, *Laravel Documentation* and *CS50 (Harvard)*.**