

INFOSOFT IT SOLUTIONS

Training | Projects | Placements

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LAMP STACK DEVELOPMENT TRAINING

1: Introduction to LAMP Stack

- Overview of LAMP components
- Setting up a development environment
 - Introduction to virtual machines (VMs) and containers
 - Installing Linux (Ubuntu)
 - Setting up a local development environment with XAMPP

2: Linux Basics

- Basic Linux commands and file system navigation
- User and permissions management
- Editing files with nano and vim
- Installing software packages

3: Apache HTTP Server

- Introduction to Apache
- Installing and configuring Apache
- Understanding the Apache directory structure
- Virtual Hosts: Configuring multiple sites
- Basic security practices for Apache

4: MySQL Database

- Introduction to relational databases
- Installing and configuring MySQL
- MySQL Workbench overview
- Basic SQL commands: CRUD operations
- Database design and normalization

5: PHP Programming Basics

- Introduction to PHP
- Installing and configuring PHP
- PHP syntax and basic constructs
- Working with variables, data types, and operators
- Control structures: Conditionals and loops

6: PHP Advanced Concepts

- Functions and scope
- Working with forms
- Session management and cookies
- File handling in PHP
- Error handling and debugging

7: Integrating PHP with MySQL

- Connecting to MySQL using PDO and MySQLi
- Executing SQL queries from PHP
- Prepared statements and preventing SQL injection
- Building a simple CRUD application

8: Building a Basic Web Application

- Project setup and planning
- Creating a user authentication system
- Role-based access control
- Using PHP sessions for user management

9: Advanced Web Application Development

- Introduction to MVC architecture
- Setting up a simple MVC framework
- Routing and controllers
- Views and templates

10: Security and Best Practices

- Common web security threats: XSS, CSRF, SQL Injection
- Input validation and sanitization
- HTTPS and SSL certificates
- Security best practices for PHP and MySQL
- Backup and recovery strategies

11: Deployment and Maintenance

- Preparing the application for production
- Deploying the application on a Linux server
- Setting up a domain name and configuring DNS
- Automating deployments with tools like Ansible.
- Monitoring and performance tuning

ADVANCE TOPICS:-

1: Advanced Linux Administration

- Shell scripting for automation
- System performance monitoring and optimization
- Advanced file system management
- Networking concepts and configurations
- Introduction to Docker and containerization

2: Advanced Apache Configuration

- Performance tuning and benchmarking (e.g., Apache Bench)
- Advanced directives and modules (mod_rewrite, mod_security)
- Configuring SSL/TLS for secure connections
- Load balancing with Apache
- Using .ht access for custom configurations

3: Advanced MySQL Techniques

- Advanced SQL queries and optimizations
- Indexing and query optimization
- Stored procedures, functions, and triggers
- Database replication and clustering

- Backup strategies and tools (mysqldump, Percona XtraBackup)

4: PHP OOP and Design Patterns

- Object-Oriented Programming (OOP) in PHP
- Key design patterns (Singleton, Factory, Observer, etc.)
- Namespaces and autoloading
- Dependency injection and inversion of control
- PHP Standards Recommendations (PSR)

5: Advanced PHP Techniques

- Working with Composer and managing dependencies
- Using frameworks (Laravel, Symfony, or CodeIgniter)
- Asynchronous PHP and working with APIs
- Advanced error handling and logging
- Writing and running unit tests (PHPUnit)

6: Building RESTful APIs

- RESTful API principles and best practices
- Creating a RESTful API with PHP
- Authentication and authorization (OAuth, JWT)
- Rate limiting and API versioning
- Documentation with tools like Swagger

7: Modern Frontend Integration

- Integrating with frontend frameworks (React, Vue.js, or Angular)
- Building SPAs (Single Page Applications) with a LAMP backend
- Using Webpack and other build tools
- Handling CORS in Apache
- API-driven development

8: Security Best Practices

- Deep dive into web security (XSS, CSRF, SQL Injection)
- Advanced input validation and sanitization
- Implementing secure authentication and session management
- Regular security audits and using security tools
- Setting up firewalls and intrusion detection systems

9: Performance Optimization

- Profiling and monitoring PHP applications
- Caching strategies (APC, Memcached, Redis)
- Database optimization techniques
- Load testing tools and techniques
- Optimizing Apache and MySQL configurations

10: Scalable Architecture

- Introduction to microservices architecture
- Implementing microservices with LAMP stack
- Container orchestration with Docker Swarm or Kubernetes
- Using message queues (RabbitMQ, Kafka)
- Horizontal and vertical scaling strategies

11: Deployment and Continuous Integration/Continuous Deployment (CI/CD)

- Setting up CI/CD pipelines (Jenkins, GitLab CI, GitHub Actions)
- Automated testing and deployment
- Environment configuration management
- Using version control best practices (GitFlow)
- Monitoring deployed applications (New Relic, Prometheus)