Jeevi Academy

FullStack

SYLLABUS

Topics Covered

Introduction to Full-Stack Development

1. Overview of Full-Stack Development
2. Understanding the Role of a Full-Stack Developer
3. Development Workflow and Tools

Front-End Development

HTML5 & CSS3

1. Elements, Attributes, Forms
2. CSS3 Basics: Selectors, Box Model, Layout Techniques (Flexbox, Grid)
3. Responsive Design and Media Queries

JavaScript

1. JavaScript Fundamentals: Variables, Data Types, Operators
2. Functions and Scope
3. DOM Manipulation
4. Event Handling
5. Asynchronous JavaScript: Promises, Async/Await
6. Front-End Frameworks

React.js

1. Components, Props, and State
2. React Hooks and Lifecycle Methods
3. Introduction to Vue.js (Optional)
4. Component-Based Architecture
5. Version Control
6. Git Basics: Commits, Branching, Merging
7. Using GitHub for Collaboration

Back-End Development

Node.js

1. Introduction to Node.js
2. Building RESTful APIs with Express.js
3. Middleware and Routing
4. Error Handling and Debugging
5. Database Management

sql

1. Introduction to SQL and NoSQL Databases
2. CRUD Operations with MySQL/PostgreSQL
3. NoSQL Databases: MongoDB
4. Data Modeling and Schema Design
5. Authentication and Authorization
6. User Authentication (JWT, OAuth)
7. Role-Based Access Control
8. Server-Side Scripting
9. Building and Managing Servers
10. API Integration and Development

Full-Stack Integration

- **Connecting Front-End to Back-End**
  - API Consumption with Fetch/Axios
  - Handling Data Flow between Front-End and Back-End
- **Deployment and DevOps**
  - Introduction to Deployment: Heroku, AWS, or Azure
  - Continuous Integration and Deployment (CI/CD)
  - Docker Basics and Containerization

Advanced Topics

1. State Management
2. State Management with Redux (for React)
3. Testing
4. Unit Testing and Integration Testing
5. Using Tools like Jest and Mocha
6. Performance Optimization
7. Front-End and Back-End Performance Tuning
8. Caching Strategies
9. Security
10. Common Security Vulnerabilities (SQL Injection, XSS)
11. Implementing Security Best Practices

Project Work

1. Capstone Project
2. Planning and Designing a Full-Stack Application
3. Development and Implementation
4. Testing and Debugging
5. Deployment