Ojet & Angular JS, Node JS and Knockout JS(5 days)

By Dr. Vishwanath Rao

1. Node.js Fundamentals:
    - Introduction to Node.js and its event-driven architecture.
    - Understanding the Node.js runtime environment and event loop.
    - Working with modules and the Node.js ecosystem.
    - Asynchronous programming with callbacks, promises, and async/await.
2. Building RESTful APIs with Node.js:
    - Designing and developing RESTful APIs using Node.js and Express.
    - Implementing CRUD operations and handling HTTP requests and responses.
    - Middleware and routing in Express.
    - Validating and handling API requests.
3. Database Integration with MongoDB:
    - Introduction to MongoDB and its NoSQL approach.
    - Using MongoDB with Node.js applications.
    - Performing CRUD operations with MongoDB and Mongoose.
    - Indexing, aggregation, and scaling MongoDB deployments.
4. Angular 14 Fundamentals:
    - Overview of Angular and its key features.
    - Understanding the Angular component-based architecture.
    - Working with TypeScript and Angular templates.
    - Data binding, directives, and pipes in Angular.
5. Angular Routing and Services:
    - Implementing routing and navigation in Angular applications.
    - Using dependency injection and managing state with services.
    - Consuming RESTful APIs in Angular.
    - Authentication and authorization in Angular apps.
6. Components and Templates:
    - Deep dive into Angular components and their lifecycle.
    - Using data binding and interpolation in templates.
    - Understanding input and output properties.
    - Implementing component communication and interaction.
7. Directives and Pipes:
    - Exploring built-in and custom directives in Angular.
    - Creating structural, attribute, and custom structural directives.
    - Working with pipes for data transformation and formatting.

    - Creating custom pipes for specific data manipulation needs.
8. Routing and Navigation:
    - Implementing routing and navigation in Angular applications.
    - Understanding the router outlet and router link.
    - Using route parameters and query parameters.
    - Implementing lazy loading and route guards.
9. Forms and Validation:
    - Handling form inputs and form validation in Angular.
    - Using template-driven and reactive forms.
    - Understanding form control states and validation messages.
    - Implementing custom validation rules.
10. Services and Dependency Injection:
    - Exploring the role of services in Angular.
    - Understanding dependency injection and its benefits.
    - Creating and injecting services into components.
    - Managing shared data and logic with services.
11. HTTP and API Integration:
    - Making HTTP requests and handling responses in Angular.
    - Using the HttpClient module for API integration.
    - Implementing error handling and retry mechanisms.
    - Consuming RESTful APIs and working with JSON data.
12. State Management:
    - Understanding state management in Angular applications.
    - Using the built-in @angular/core/state management solution.
    - Implementing store, actions, and selectors.
    - Managing complex state and data flow in large applications.
13. Knockout.js for Dynamic Data Binding:
    - Introduction to Knockout.js and its data binding capabilities.
    - Understanding observables, computed observables, and bindings.
    - Integrating Knockout.js with HTML and JavaScript.
    - Updating and synchronizing data with Knockout.js.
14. Advanced Angular Topics:
    - Utilizing Angular directives and custom pipes.
    - Form handling and validation in Angular.
    - Internationalization and localization in Angular applications.
    - Performance optimization and lazy loading.
15. Node.js Advanced Topics:
    - Working with WebSockets and real-time communication.
    - Handling file uploads and serving static files.
    - Security considerations and authentication strategies in Node.js.
    - Monitoring, debugging, and profiling Node.js applications.
16. Integration and Deployment:
    - Integrating Node.js and Angular in a full-stack application.

    - Using build tools like npm scripts, Webpack, or Parcel.
    - Deploying Node.js applications to cloud platforms (e.g., AWS, Heroku).
    - Continuous integration and deployment practices.
17. Best Practices and Design Patterns:
    - Exploring design patterns in Node.js and Angular, such as MVC, MVVM, and Flux.
    - Understanding scalability and performance optimization techniques.
    - Applying security best practices and handling common vulnerabilities.
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18. Introduction to Oracle JET:
    - Understanding the need for modern web application development frameworks.
    - Overview of Oracle JET, its features, and benefits.
19. Oracle JET Fundamentals:
    - JavaScript and HTML5 fundamentals for Oracle JET development.
    - Understanding the Oracle JET architecture and its core components.
20. Setting up the development environment and tools.
21. Building Blocks of Oracle JET:
22. Working with Oracle JET templates and layout options.
23. Using Oracle JET components such as buttons, inputs, lists, tables, and charts.
24. Data binding and data visualization with Oracle JET.
25. Working with Oracle JET Data:
26. Understanding the Oracle JET data model and data binding concepts.
27. Using Oracle JET data providers and data adapters.
28. Implementing filtering, sorting, and pagination with Oracle JET data.
29. Oracle JET UI Development:
30. Creating responsive and adaptive user interfaces with Oracle JET.
31. Using CSS and styling options in Oracle JET applications.
32. Implementing navigation and routing in Oracle JET apps.
33. Advanced Oracle JET Features:
34. Utilizing Oracle JET's support for internationalization and localization.
35. Integrating with RESTful web services and consuming APIs.
36. Implementing security and authentication in Oracle JET applications.
37. Oracle JET Performance Optimization:
38. Techniques for optimizing Oracle JET application performance.
39. Understanding and using Oracle JET's caching mechanisms.
40. Profiling and debugging Oracle JET applications.
41. Integrating with Oracle Technologies:
42. Integrating Oracle JET applications with Oracle Database and Oracle Fusion Middleware.
43. Using Oracle JET with Oracle Cloud Infrastructure and Oracle Cloud Platform services.

44. Deployment and Maintenance:
45. Options for deploying Oracle JET applications, including web servers and cloud platforms.
46. Strategies for maintaining and updating Oracle JET applications post-deployment.
47. Best Practices and Case Studies:
48. Exploring best practices for Oracle JET development based on real-world case studies.
49. Reviewing sample applications and code examples to reinforce learned concepts.