

Java & React - Topics

Java (Days 1-22)

1. **Day 1:** Introduction to Java, setup IDE, project structure, Hello World project.
2. **Day 2:** Basic syntax and data types.
3. **Day 3:** Control structures - loops and conditionals.
4. **Day 4:** Methods and parameters.
5. **Day 5:** Object-oriented principles: Classes and Objects.
6. **Day 6:** Encapsulation and data hiding.
7. **Day 7:** Inheritance basics, single inheritance in a project context.
8. **Day 8:** Polymorphism with real-world examples.
9. **Day 9:** Interfaces and abstract classes.
10. **Day 10:** Collections framework overview.
11. **Day 11:** Working with Lists in Java.
12. **Day 12:** Sets, HashMap, and their uses.
13. **Day 13:** Java Streams and Lambda expressions.
14. **Day 14:** Exception handling basics and project integration.
15. **Day 15:** File I/O operations.
16. **Day 16:** Basic JDBC - connecting to a database.
17. **Day 17:** CRUD operations with JDBC.
18. **Day 18:** Introduction to Maven for project management.
19. **Day 19:** Building a small CLI-based project with Java.
20. **Day 20:** Introduction to Spring Boot - creating a REST API.
21. **Day 21:** CRUD operations using Spring Boot.
22. **Day 22:** Wrapping up Java basics with a mini-project.

React (Days 23-45)

23. **Day 23:** Introduction to React, setup environment, and create-react-app.
24. **Day 24:** JSX and basic component structure.
25. **Day 25:** Component props and state management basics.
26. **Day 26:** Handling events in React.
27. **Day 27:** Conditional rendering and lists.
28. **Day 28:** React Router for navigation.
29. **Day 29:** API integration with fetch and axios.
30. **Day 30:** Handling forms in React.
31. **Day 31:** Lifting state and context basics.
32. **Day 32:** Context API for global state management.
33. **Day 33:** Project setup: React front-end for Java backend.
34. **Day 34:** Setting up API calls to the backend.
35. **Day 35:** Displaying data from the backend in React.
36. **Day 36:** React Hooks (useState, useEffect).

- 37. **Day 37:** Advanced hooks (useReducer, useContext).
- 38. **Day 38:** Custom hooks.
- 39. **Day 39:** Integrating authentication flow (basic).
- 40. **Day 40:** Form validation and error handling.
- 41. **Day 41:** Testing components with Jest.
- 42. **Day 42:** Optimizing React app for performance.
- 43. **Day 43:** Deployment of React and Java project.
- 44. **Day 44:** Review of key concepts and troubleshooting.
- 45. **Day 45:** Final project wrap-up and presentation.