

React & Java Spring Boot

Introduction to Java

Object Oriented Programming Fundamentals
Structure of a Java Program

Data Types

Primitive data types
Reference Data Types
Keywords, Identifiers, Expressions

Operators

Arithmetic Operators
Assignment Operators
Logical Operators
Relational Operators
Bitwise Operators

Variables

Declaration, Definition, Types

Methods

Syntax, Types

Object

Object Creation, Reference, Reference Variables

Constructors

Pass by Value and Pass by Reference
Access Specifiers
Access Levels
Decision Making and Control Structures

Strings

String, String Buffer, String Builder

Java Beans

Arrays

Declaring and defining arrays

Primitive Arrays

Object Arrays

Inheritance

Is-A Relationship

Has-A Relationship

Inheritance using extends keyword

Inheritance using implements Keyword

Abstraction

Abstraction using abstract classes

Abstraction using interfaces

Encapsulation

Interfaces

Interfaces Vs Classes

Nested Interfaces

Interface as a type

Polymorphism

Overloading

Constructor overloading

Overloading between classes

Overriding

Exception Handling

Exception

Categories of Exception, Exception hierarchy

Throw and throws keywords

Try catch and finally keywords

Collection Framework

Core Interfaces

Core Classes

Iterator

Comparable & Comparator

Generics

Auto boxing

Unboxing

Casting

Primitive Casting

Reference Casting

Up casting and down casting
File Handling
File Handling in Java
Files, Streams, Types of Streams
Serialization
Threads
Thread Life Cycle
Thread States
Creating Threads
Threads Priorities
Thread Groups
Synchronization
Inner Classes
Nested Classes
Anonymous Classes

J2EE

Overview of J2EE and WWW
The HTTP Protocol and Web Application Introduction
Environment Setup
HTML
Servlets
What is a Servlet?
Servlet Lifecycle, Configuring a Servlet, Types of Servlet
Servlet Context
Servlet Config

Deployment descriptor
Session Management
Java Server Pages (JSP)
JSP Lifecycle
Servlets vs JSP
Scriptlets
Directives
Declaration
Sessions
Mixing Scriptlets and HTML
Tag Libraries
Beans and Forms Processing
MVC Architecture

- JDBC
 - Database Setup (MySQL)
 - Overview
 - JDBC Driver Types
 - How JDBC Works
 - Steps Involved
 - JDBC Process details
 - Queries
 - Prepared Statements
 - Callable Statements

- MVC Architecture
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FRAMEWORKS OVERVIEW

Spring and Spring Boot Framework

- Spring: Introduction
 - What is Spring
 - Advantages of the Spring Framework
 - Spring Framework Architecture and Spring Modules
 - Java and Spring Configuration
- Spring: Core Container
 - Components of Spring Core
 - Object Coupling – Tight and Loose Coupling

Dependency Injection (DI)

- Types of DI
- Concepts and Implementation of Inversion of Controls (IoC)
- Spring Bean – Properties, Scope, Method, Bean Lifecycle
- DI with Bean
- Spring BeanFactory
- Wiring Beans
- AutoWiring Beans

Understanding the Default AutoWiring
AutoWiring by Name and AutoWiring by Constructors
Annotations in Spring
Dependency Injection using Annotations
Wiring Bean with Annotations

Spring: Data Access and Integration
Data Access with Spring using JDBC
JDBC Templates
Data Access Object Patterns (DAO) and Bean
Querying Database and Binding the Variables
Handling Database Exceptions
Executing Update and Delete Statements
Batch Update data
Database Transactions
Transactions Management with Spring
Spring: Web Layer
Spring Model View Controller (MVC) Architecture
Components of MVC
Setting Up a Spring MVC Application
The Purpose of Dispatcher Servlets
Spring Controllers
Spring View Resolvers
Adding Data using Spring Data Models
Creating and Managing Forms in Spring
Managing File Uploads

Spring: Aspect Oriented Programming (AOP)

Limitations of Object Oriented Programming
Introduction to Aspect Oriented Programming
Advantages of AOP
Terminologies Associated with AOP

Aspects

“Advice” to Aspects
Types of Advice – Before, After, Around, Others
Creating Annotations based Aspects
Point Cut Expressions – “Within”, “This”, “Target”
Point Cut Designators
AspectJ

Spring: Security

Securing Applications with Spring Security

Spring Security Filters
Configuring Authentications
Spring Authorizations
“Remember Me” Functionality

Spring: Boot

Introduction to Spring Boot
Features of Spring Boot
The Spring Boot Project Structure
The Spring Boot Initializr
Spring Boot Actuator
Configuring the Spring Boot Server
Spring Boot Application Properties
Spring Vs Spring Boot

Introduction to Spring

Introduction to Spring
Introduction to IoC & Dependency Injection
Configuring spring and full demo
Introduction to Hibernate
Introduction to Hibernate, ORM Overview, Hibernate Environment
Hibernate Architecture & API
Hibernate Configuration
Hibernate Sessions
Persistent Class and Mapping Files

Building Hibernate Application, Hibernate Query Language (HQL)
Hibernate O/R Mappings – Collection & Association Mappings

HTML CSS JAVASCRIPT

HTML Tags
CSS Props
JavaScript and OOPS

ReactJS

React Overview
Introduction
What are SPA apps
What is React
How react works internally
What are the alternatives
What problem does it solve
When to use React
Component based architecture

JSX

Introduction

Write your first jsx code

How to compile jsx to Javascript

Write class based components with jsx

Renderig jsx to DOM using react DOM

Dom manipulation

Introduction

Select elements using ref

Other ways to select elements

Props vs States

Introduction

What are Props

What are states

Proptypes validation

Lifecycle Methods in React

Introduction

How componentWillMount works

How componentDidMount works

How componentWillReceiveProps works

How shouldComponentUpdate works

How componentWillUpdate works

How componentDidUpdate works

How componentWillUnmount works

Understanding When to use which life cycle method

Forms & validations

Introduction

How to get input from users using Forms

Form validations

Style React Components

Introduction

Using css in react

Inline styles

Impoting external styles

Event Handling in React

- Introduction
- How events work in react world
- What are synthetic events
- Mouse events
- Keyboard events

Redux and State management

- Introduction
- What is state management
- Flux architecture
- Redux Introduction
- How to manage state in large applications with redux

Routing

- Introduction
- Navigating between components
- React Router
- Creating and managing routes
- Integrating redux with react router

Project with React & Java Spring Boot

React & Java Spring Boot



<https://youtu.be/srwUTD6UjHo?si=Apibr1sZWa0Y2ccZ>