

- **Introduction to the Spring Framework**

- Understanding the Spring Framework and Its Ecosystem
 - * Introduction to the Spring framework
 - * History and evolution of Spring
 - * Core concepts: Inversion of Control (IoC) and Dependency Injection (DI)
- Configuring Spring with XML and Annotations
 - * Configuration options in Spring: XML-based and annotation-based
 - * Setting up a Spring project with XML configuration
 - * Utilizing annotations for component scanning and bean definitions
- Creating Spring Beans and Managing Their Lifecycle
 - * Defining and configuring Spring beans
 - * Bean scopes (singleton, prototype, request, session)
 - * Understanding the bean lifecycle: initialization and destruction methods
- Dependency Injection in Action
 - * Implementing dependency injection in Spring
 - * Constructor injection and setter injection
 - * Resolving bean dependencies
 - * Hands-on exercises on creating Spring applications

Week 3: Spring Data Access with JDBC

Day 1: JDBC Template and Data Source Configuration

Overview of JDBC Template in Spring Configuring data sources for database connectivity
Implementing data source properties

Day 2: Executing Queries and Managing Connections
Performing basic SQL queries with JDBC Handling prepared statements and result sets
Managing database connections and resources

Day 3: Handling Exceptions and Transactions
Dealing with exceptions in JDBC operations Understanding transaction management
Implementing programmatic and declarative transactions

Day 4: Developing a Simple JDBC-Based Application
Building a complete Java application with Spring JDBC CRUD operations with JDBC Best practices and error handling