- **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