



LAKSHYA INSTITUTE OF TECHNOLOGY

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Java Microservice Framework

Java 8 Recap

- Overview of Java 8 features
- Evolution from previous Java versions
- Importance of Java 8 in modern development

Lambdas

- Lambda Basics
- Syntax and Structure
- Functional Interfaces
- Lambda Use Cases and Examples

Streams

- Streams API
- Stream Creation
- Intermediate and Terminal Operations
- Stream Collectors

Thread Pool Frameworks

- Concurrency in Java
- Thread Basics
- Runnable and Callable Interface
- Future
- Future Task
- Executor Framework
- ThreadPoolExecutor





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Java Microservice Framework

Servlet, Servlet Context

- Servlet Fundamentals
- Servlet Lifecycle
- Handling HTTP Requests and Responses
- Servlet Context and Initialization Parameters

RequestDispatcher & SC Listener

- Advanced Servlet Concepts
- RequestDispatcher for Forwarding and Including
- Servlet Context Listeners

Introduction to View using JSP

- JavaServer Pages (JSP)
- JSP Basics
- JSP Tags and Directives
- Expression Language (EL)

Maven

- Introduction to Maven
- Maven Project Structure
- Dependency Management
- Maven Build Lifecycle

Spring Boot Introduction

- Getting Started with Spring Boot
- Spring Boot Overview
- Project Setup
- Spring Boot Starters
- Types of Controller and usage of Service components





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Java Microservice Framework

Validation

- Data Validation in Java
- Custom Validation

Spring Data JPA

- Introduction to Spring Data JPA
- Entity Mapping
- Repositories and Query Methods
- Spring Data JPA Features

Spring Crud

- Building CRUD Operations with Spring
- Creating Entities and Repositories
- Implementing CRUD Operations
- Testing CRUD Operations

Scheduling and Concurrency

- Scheduling Tasks with Spring
- Spring Scheduler
- Task Execution and Scheduling
- Concurrency in Spring

Spring Exception

- Handling Exceptions in Spring
- ExceptionHandler
- Global Exception Handling
- Custom Exception Handling

Spring Boot AOP

- Aspect-Oriented Programming (AOP) with Spring Boot
- AOP Concepts
- Creating Aspects
- AOP in Spring Boot





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Java Microservice Framework

Filter vs Interceptor & Session

- Servlet Filters and Interceptors
- Request and Response Filters
- Interceptor Use Cases
- Session Management in Web Applications

Microservice Communication

- Microservices Communication
- Synchronous and Asynchronous Communication
- Synchronous Communication using Rest Template and Feign Client
- Synchronous Communication using Kafka
- Introduction to Asynchronous Communication

Spring Cloud Stream

- Event-Driven Microservices with Spring Cloud Stream
- Message Bindings
- Event Processing
- Kafka Integration with Spring Cloud Stream

ThymeLeaf

- Thymeleaf Templating Engine
- Thymeleaf Syntax
- Integrating Thymeleaf with Spring Boot

Spring Batch

- Batch Processing with Spring Batch
- Job, Step, and Chunk Concepts
- Reading and Writing Data
- Error Handling and Retry





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Java Microservice Framework

Git

- Version Control with Git
- Basic Git Commands
- Branching and Merging
- Collaborative Development

SQL

- Database Fundamentals
- SQL Basics
- Relational Database Concepts
- Advanced SQL Queries

Dockerization

- Containerization with Docker
- Docker Basics
- Building Docker Images

Interview Question Discussion

- Common Java Interview Questions
- Behavioral and Technical Interview Tips

Project

- Capstone Project
- Applying Learned Concepts
- Full-Stack Application Development
- Code Review and Best Practices

