Welcome to Bikkad IT

Java Development 01

Syllabus

1) Core Java

Language Fundamentals

Declarations and Access Control

Interfaces

Operators

Flow Control

Exception Handling

Assertions

Garbage Collections

OOPs

Multi-Threading

java.lang Package: String,StringBuffer,StringBuilder,Wrapper Classes,Object,Autoboxing

java.io package

Serialization

Collections Framework

Generics

Inner Classes

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2 Advance Java

 1) Hibernate

1. Advantages of Hibernate compared to JDBC

2. Introduction.

3. ORM (Object Relational Mapping)

4. Configuration xml file and Mapping xml file along with dtds.

5. Hibernate architecture

6. Installation and Directory Structure

7. Hibernate Data Types.

8. First Application using Hibernate.

9. Hibernate API

10. CRUD operations

11. Primary key Generators

12. Hibernate Query Language (HQL)

13. Native SQL

14. Criteria API

15. Inheritance in Hibernate

16. Relations

(one to one, one to many, many to one, many to many)

17. Caching

18. Connecting with Multiple Databases

19. Integrating Hibernate with Servlets and Struts

20. Hibernate Annotations

2) MySql

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3 Springboot And microservices

Part-1
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Spring Core

- IOC

- Dependency Injection

- AutoWiring

- BeanLifeCycle

Spring Boot

- Spring vs SpringBoot

- Spring Boot Advantages

- Spring Boot Starter Poms

- Spring Boot Application creation

- Initializer website

- IDE

- @SpringBootApplication

- @ComponentScanning

- AutoConfiguration

- SpringAppllication.run( ) method

- Banner in Spring Boot

- Runners in Spring Boot

- Application Runner

- CommandLine Runners

Part-2) Spring Data JPA

Persistence Layer

Best Practises for Persistence Layer

Differences between Hibernate & Data JPA

Spring Data JPA repositories

- CrudRepository

- JpaRepository

Entity class (with Annotations)

Curd Operations using Data JPA

Pagination & Sorting

Generators

Custom Generators

application.properties file & application.yml

Profiles in SpringBoot

Oracle DB Integration

MySql DB Integration

Embedded DB (h2) Integration

Monog DB Integration

Part-3) Spring Web MVC

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MVC Introduction

Spring MVC Introduction

Spring MVC Architecture

DispatcherServlet (Front Controller)

HandlerMappers

Controllers

View Resolvers

RequestMappings

Spring Form Tag Library

Form Based applications

Form app with JSP front End

Form app with Thymeleaf Front End

Form validations

Model

ModelAttribute

@RequestBody

@ResponseBody

Interceptors in Spring MVC

Spring Boot Actuators

Exception Handling using Spring AOP

Part-4) Restful Services

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Distributed Applications

Distributed Technologies

SOAP vs REST

Rest Introduction

Rest Architecture

Rest Principles

Rest Application Development using Spring With REST

Internals of REST Application

HTTP Protocol

       - Http Request Structure

       - Http Response Structure

Http Status Codes

Http Status Messages

GET

POST

PUT

DELETE

JSON with Jackson

XML with JAX-B

Swagger

Swagger UI

POSTMAN

Exception Handling REST API

Rest Client Introduction

java.net client

apache http client

RestTemplate

WebClient (reactive programming- Spring 5.x)

Mono Objects

Flux Objects

Asynchronus Communications

Part-5 : Microservices

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Monolith Architecture

Drawbacks of Monolith

Load Balancers

Load Balancer Algos

      - Sticky session

      - IP Hashing

      - Round Robbin etc..

Microservices Introduction

Microservices challenges

Microservices Advantages

Microservices Architecture

Service Registry (Eureka Server)

API Gateway with Zuul proxy

Config Server

2 Microservices Development

Interservice Communication (FeginClient)

Angular 10 Integration

Cloud Platforms

PCF cloud

PCF account creation

PCF CLI

Microservice Deployment to Cloud

Scaling

      - Horizontal Scaling

      - Verticle Scaling

      - AutoScaling

SpringBoot Admin & Client

Circuit Breaker (Hystrix)

Distributed Log Tracing(Sleuth & Zipkin)

Security (oAuth2.0 & JWT)

Unit Testing (Junit & Mocking)

Apache kafka

Redis Cache

Docker

Jenkins

SonarQube

4) Java Realtime Project (Full Stack Development)

Course Content:

Part-1 : Software Industry & Software Projects

Part-2 : Realtime Tools

Maven

Gradle

SVN

Git

BitBucket

Agile with JIRA

JUnit

Mocking

Jacocco

Log4J

Log Monitoring tools (Putty, WinScp, Splunk)

JMETER

Sonar Qube

Docker

MAT

Jenkins

Apache POI

iText PDF

Swagger

SOAP UI

POSTMAN

Part-3 : Mini Projects

All mini projects we will develop using spring boot & microservices

01 - Mini Project

02 - Mini Project

03 - Mini Project

Part-4 : Major Project

This major project you can keep in your resume also for attending interviews

Part-5: Interview Guide

Multi-Threading Realtime use case

Reflection API realtime use case

Custom Class Loaders

Exception Handling Scenarios in Project

Garbage Collection

Garbage Collectors

Memory Management

Apache Kafka

Redis Cache

Interview Questions & Answers

Resume Preparation

Naukri profile creation

Day to day workschedule

First Day and Last Day process in company