KOLATECH CODING ACADEMY(KCA)

BEST JAVA CONTENTS TO BECOME A JAVA DEVELOPER

JAVA FUNDAMENTALS:

1. Inro to Java
2. Main method
3. Statically typed vs dynamically typed
4. Variables and datatypes
5. Type casting and truncation
6. Identifiers and naming convention
7. Operators
8. Increment and decrement
9. Conditional statement
10. Loops
11. Scanner class (console user input)

Object Oriented Programming (OOP):

1. Classes and object
2. JVM and data areas
3. Instance variable vs local variable
4. Method overloading
5. Wrapper classes
6. Encapsulation
7. This keyword
8. Constructor
9. Static keyword intro
10. Class loading
11. Inheritance
12. Package and access modifiers
13. Polymorphism
14. Abstraction and abstract keyword
15. Final keyword

Array:

1. Why an array
2. Creating an array
3. Different ways to create an array
4. 2D regular array
5. 2D jagged array
6. Enhanced for loop
7. Anonymous array
8. ArrayOutOfBoundException
9. Disadvantages of array

Strings:

1. String intro
2. Types of string
3. Immutable string and memory map
4. Ways to compare
5. String concatenation
6. Inbuilt methods in string class
7. Intro to mutable string
8. Final vs immutability
9. More on mutable string
10. StringBuffer vs StringBuilder

Interface and Lambda Expression:

1. What is an interface
2. Interface implementation
3. Need of interface with example
4. Important key points of interface
5. Abstract vs interface
6. Java 8 features
7. Functional interface
8. Inner class
9. Anonymous inner class
10. Lambda Expression

Exception Handling:

1. Different types of errors
2. What is an exception
3. Try catch
4. Multiple catch block
5. Handling vs ducking an exception
6. Throw, throws and finally
7. Custom exception
8. Hierarchy of an exception class

Multithreading:

1. Thread
2. Need of multiple threads
3. Main thread in java
4. How to create threads
5. Thread vs Runnable
6. States of thread

7. Join and IsAlive methods
8. Interrupt method
9. Synchronization in java
10. Producer-consumer problem

Collections:

1. Why Collection
2. Collection Hierarchy
3. ArrayList
4. LinkedList
5. ArrayDeque
6. TreeSet
7. PriorityQueue
8. TreeSet
9. HashSet
10. LinkedHashset
11. Iterator, List Iterator
12. Legacy classes and Enumeration
13. Map in Java
14. Map Hierarchy
15. HashMap

File Handling:

1. Input Stream
2. Output Stream
3. File Operation
4. Serialization
5. Deserialization

JDBC:

1. Working with JDBC
2. DTO

Spring core and Spring Boot:

1. What is spring framework
2. What is Spring Boot
3. Differences between spring and spring boot.
4. IOC container
5. Dependency Injection
6. Stereotype Annotations
7. Spring Boot Overview
8. Creating spring boot application

Spring Data JPA:

1. Spring Data JPA Introduction
2. Differences btw Spring ORM and spring data JPA
3. Working with jpaRepository

Spring Web MVC:

1. Spring web MVC intro
2. Spring MVC architecture
3. Web app development using spring boot, HTML, Thymleaf and bootsrap.
4. Sending data from UI to Controller
5. Sending data from Controller to UI
6. Form based app dev using spring boot

Spring REST:

1. Spring Rest
2. Using JSON in Rest
3. Spring Rest and its annotations
4. Using Postman to test API
5. Using RestTemplate and RestClient
6. Using RequestParam and PathVariable
7. Spring Security.

Microservices:

1. Using Monolithic vs Microservices architecture
2. Microservice Architecture
3. Challenges of Microservices
4. Working with Service Registry and service discovery(Eureka Server and Eureka client)
5. Working with FeignClient(OpenFeign) for effective communication btw multiple microservices.
6. Integration of multiple microservices
7. Spring cloud configuration, HystrictCircuit Breaker

8. Working with API gateway
9. Load balancer at client side using RibbonClient
10. Distributed logging using sluth and zipkin server
11. working with RedisCache
12. Spring Boot Message Broker(Apache Kafka).