

Core java

1. Java Fundamentals

- a. Class and Object
- b. Data types
- c. Variables and methods
- d. Static and instance members
- e. Access specifiers

2. Object Oriented Concepts

- a. Data hiding
- b. Abstraction
- c. Encapsulation
- d. Inheritance
- e. Polymorphism
- f. Abstract class
- g. interface

3. Java language package

- a. Object class and its members
- b. String class,StringBuffer,StringBuilder
- c. Wrapper classes

4. Collection

- a. Collection need and Hierarchy
- b. List interface and its implementation classes
- c. Set interface and its implementation classes
- d. Queue interface and its implementation classes
- e. Map interface and its implementation classes

5. JVM Architecture

- a. Class loaders
- b. Memory management
- c. Execution Engine
- d. Java Native Interface

6. Multithreading

- a. Need of Multithreading
- b. Multithreading vs Multitasking
- c. Different ways to create thread
- d. Thread vs Runnable
- e. Runnable vs Callable
- f. Inter thread communication
- g. Synchronized method and block
- h. Lock interface and its implementation classes
- i. Synchronized vs lock
- j. Executor framework
- k. Thread pool
- l. Concurrency package

m. Deadlock

7. Exception Handling

- a. Need of exception handling
- b. Try catch block
- c. Finally block
- d. Try with resources
- e. Multi Catch block
- f. Throw keyword
- g. Throws keyword

8. File Handling

- a. File
- b. FileWriter
- c. FileReader
- d. BufferedWriter
- e. BufferedReader
- f. PrintWriter
- g. InputStream and its classes

9. Serialization

JDBC

1. Database vs File
2. Statement
3. PreparedStatement
4. CallableStatement
5. Batch processing
6. Transaction management
7. Connection pool
8. Properties file usage
9. MySql/Oracle
10. Stored procedure and functions

Servlet

1. Web Application vs Standalone apps
2. Web server and Application Server
3. Servlet Introduction
4. Html to Servlet communication
5. Servlet to Servlet communication
6. Servlet to JSP communication
7. Servlet Config and Context object
8. Servlet Life cycle
9. Session management
10. Servlet action and Listeners
11. Servlet Filter

JSP

1. Servlet vs JSP
2. Scripting tags
3. Action tags
4. Directive tags
5. Custom tags
6. JSTL tags
7. Tag library

Web Service

1. Need of Web Service
2. Rest vs Soap
3. Introduction to Rest with Jersey library
4. RequestParam
5. PathParam
6. Consume
7. Produce
8. Path
9. JSON Parsing
10. Rest with Database

Hibernate

1. ORM Overview, Hibernate Architecture,
2. Developing Hibernate Application
3. CRUD Operations, Hibernate Query Language (HQL)
4. Hibernate Criteria
5. Restrictions with Criteria
6. Logical Expression in Criteria
7. Pagination using Criteria
8. Sorting in Criteria, Projections in Criteria
9. Hibernate Associations
10. Annotations in Hibernate
11. Hibernate Caching
12. Transaction Management

Spring

1. Need of Spring
2. Dependency Injection
3. Spring IOC
4. Autowiring
5. Spring MVC

6. DispatcherServlet
7. Controllers
8. Service layer
9. Dao Layer
10. Form backup support
11. Form to controller communication
12. SendRedirect and forward
13. Session management
14. JDBCTemplate
15. Spring DAO
16. Spring Data layer
17. Token system
18. Spring AOP
19. Spring Controller to Rest Controller communication
20. Spring MVC vs Spring Rest

Spring Boot with Micro services

1. Spring Boot vs Spring framework
2. Spring Boot Initializr
3. Actuator
4. Auto configuration
5. Spring Boot starter
6. Spring Boot MVC
7. Spring boot Security
8. Spring Boot Rest service
9. GET,POST,PUT methods
10. Implementing Validations for RESTful Services
11. Implementing HATEOAS for RESTful Services
12. Exception Handling
13. Advanced RESTful Service Features
14. Swagger Documentation Format
15. RESTful Web Services - Best Practices
16. Introduction to Microservices
17. Challenges with Microservices
18. Advantages of Microservices Architectures
19. Microservice Components - Standardizing Ports and URL

JPA

1. Introduction to JPA in 10 Steps
2. Object Relational Impedance Mismatch
3. World before JPA - JDBC, Spring JDBC
4. Introduction to JPA
5. Creating a JPA Project using Spring Initializr

6. Defining a JPA Entity - User
7. Defining a Service to manage the Entity - UserService and EntityManager
8. Using a Command Line Runner to save the User to database.
9. Magic of Spring Boot and In Memory Database H2
10. Introduction to Spring Data JPA
11. More JPA Repository : findById and findAll
12. Custom Query
13. One to one relation
14. One to many relation
15. Many to many relation

Web Technologies

1. HTML
2. CSS
3. XML
4. JavaScript
5. jQuery
6. Angular

Design Patterns

Creational Design Pattern

1. Factory Pattern
2. Abstract Factory Pattern
3. Singleton Pattern
4. Prototype Pattern
5. Builder Pattern.

Structural Design Pattern

1. Adapter Pattern
2. Bridge Pattern
3. Composite Pattern
4. Decorator Pattern
5. Facade Pattern
6. Flyweight Pattern
7. Proxy Pattern

Real time tools

- 1. Git/Bitbucket**
- 2. Maven**
- 3. Logger**