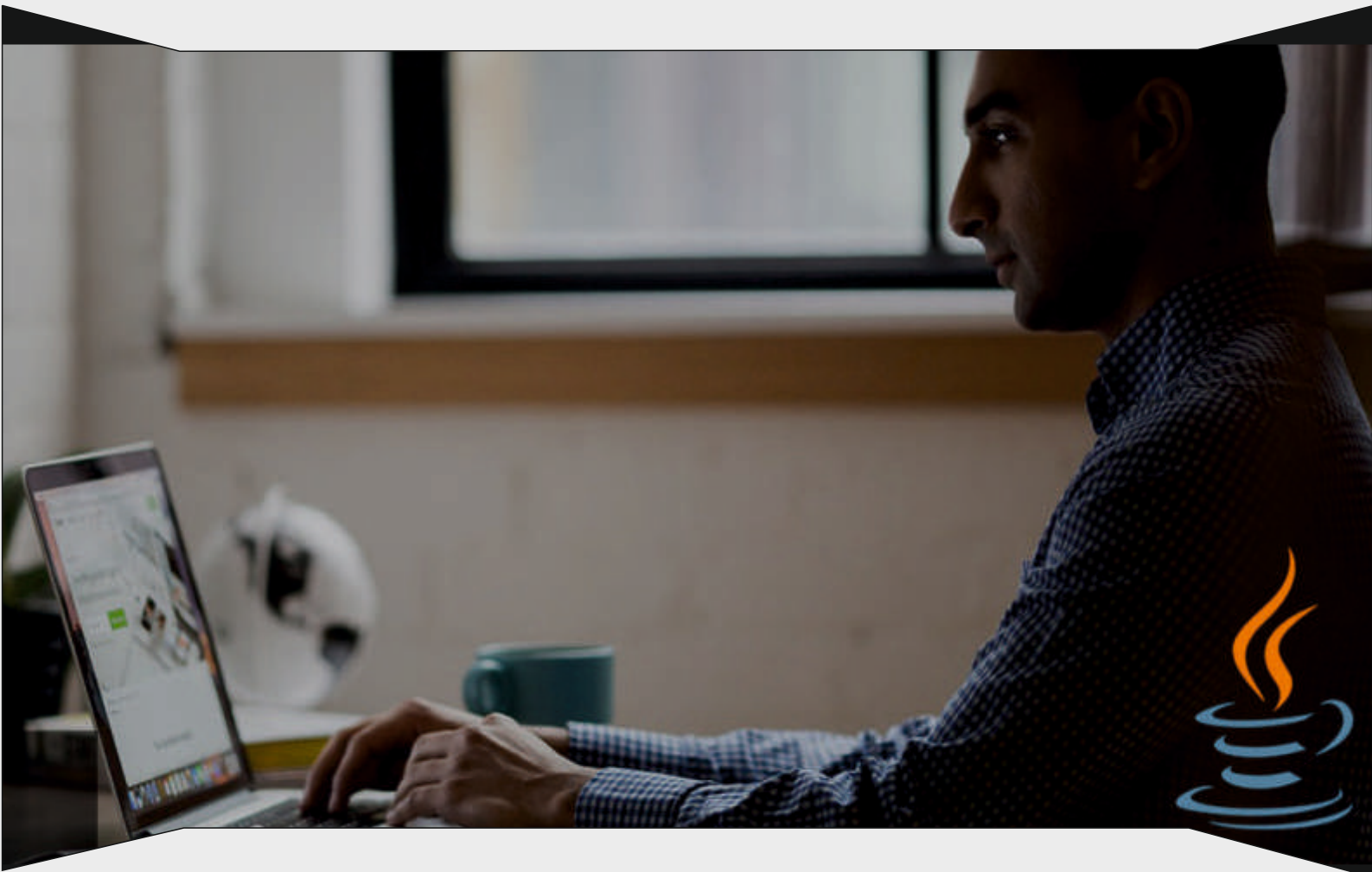


JAVA



1. Introduction of Java

- A. History of java
- B. What is java?
- C. What is JVM?
- D. Java Keywords
- E. Difference between JDK, JRE & JVM
- F. Technologies based on Java
- G. Features of java

2. Data types in Java

- A. Data types in java
- B. Primitive Data Types
- C. Non- Primitive Data Types

3. Operators In Java

- A. Arithmetic Operators
- B. Unary Operators
- C. Increment Operator (++)
- D. Decrement Operator (--)
- E. Assignment Operator (=)
- F. Relational Operators
- G. Boolean Operators
- H. Bitwise Operators
- I. Ternary Operator / Conditional Operator (? :)
- J. new Operator
- K. Cast Operator



4. Control Statements in java

- A. Control Statement
- B. if Statements
- C. If-else statements
- D. switch-case Statements
- E. Iteration Statements
- F. for Statements
- G. while Statements
- H. do-while Statements
- I. Transfer Statements break and continue

5. Arrays in Java

- A. What is array
- B. Types of array
- C. arrayname.length Property
- D. Command Line argumentss

6. String Class in Java

- A. Creating Strings
- B. String Class methods
- C. Immutability of String

7. StringBuffer and StringBuilder

- A. String Buffer class
- B. String Buffer class methods
- C. String Builder class
- D. String Builder class method

8. Introduction to OOP

- A. Class / Object
- B. Encapsulation
- C. Abstraction
- D. Inheritance
- E. Polymorphism



9. Classes & Object

- A. Understanding Methods
- B. Static Variables, Methods and Block
- C. 'this' Keyword
- D. Instance Methods
- E. Passing Primitive data types, Objects & Arrays to Methods

10. Inheritance

- A. 'super' Keyword
- B. Types of Inheritance
- C. Access Specifiers

11. Polymorphism

- A. Polymorphism with Variables
- B. Polymorphism using Methods
- C. Static Polymorphism
- D. Dynamic Polymorphism
- E. Polymorphism with Static Methods
- F. Polymorphism with Private Methods
- G. Polymorphism with final Methods
- H. 'final' class

12. Type Casting

- A. Casting with Primitive Data Types
- B. Casting with User Defined Data Types
- C. Generalization and Specialization
- D. Object Class
- E. Cloning the class Objects

13. Abstract Classes & Interfaces

- A. Abstract Method & Abstract Classes
- B. Multiple Inheritance using Interfaces
- C. Interface within Interface
- D. Abstract classes V/s Interfaces



14. Packages

- A. Types of Packages
- B. Interfaces in Package
- C. Creating Sub Package In Package

15. Exception Handling

- A. What are Exceptions?
- B. Types of Exceptions
- C. Handling Exception
- D. 'try' , 'catch'
- E. Handling Multiple Exception
- F. 'finally' , 'throw', 'throws'

16. Wrapper Classes

- A. Character class
- B. Byte class
- C. Short class
- D. Integer class
- E. Long class
- F. Float class
- G. Double class
- H. Boolean class
- I. Math class

17. Threads

- A. What is Multithreading?
- B. Ways to create multithreading
- C. Thread Scheduler
- D. Thread class method
- E. Runnable interface
- F. Demon Thread
- G. Thread class methods
- H. Difference between yield and sleep method.
- I. Thread priority
- J. Serialization
- K. Inter Thread Communication



18.IO Streams & Files

- A. File Handling
- B. Byte Oriented Streams
- C. Character Oriented Streams

19.Generics

- A. Introduction Generics
- B. Using Built-in Generics Collections
- C. Writing Simple Generic Class
- D. Bounded Generics e. Wild Card Generics

20.Collection & MAP

- A. Collection Interface
- B. List
- C. Set
- D. cursors
- E. Comparable
- F. Comparator
- G. Map
- H. Arrays class
- I. Collections class
- J. String Tokenizer
- K. Calendar & Date Class

21.Swing

- A. What is swing?
- B. Swing class object creation approach.
- C. Advantages of Swing
- D. Different form designs in Swing
- E. Swing class components
- F. Integrating Multi-frame model in Swing



22. Java 8 Features

- A. String Joiner Class was introduced in java 8.
- B. Java Lambda Expression
- C. Java 8 Date Time API Examples
- D. Predicates
- E. Default and static methods in interface
- F. Method References
- G. Stream API

23. Java Database Connectivity (JDBC)

- A. Overview of RDBMS
- B. Introduction Call Level Interface (CLI)
- C. Introduction JDBC
- D. JDBC Architecture
- E. Types of JDBC Drivers
- F. Establishing a JDBC Connection
- G. Using Statement
- H. Using PreparedStatement
- I. Using CallableStatement
- J. Scrollable and Updatable ResultSet
- K. Inserting & Fetching from BLOB Columns
- L. Managing Transactions in JDBC
- M. New Features introduced in JDBC 3.0
- N. AutoIncrement Columns

24. eXtensible Markup Language (XML)

- A. Introduction tXML
- B. Document Object Model (DOM) using JAXP
- C. Understanding DOM
- D. Using DOM in Java
- E. StAX in Java
- F. Understanding StAX
- G. Programming with StAX



25. Common Gateway Interface

- A. Introduction tCGI
- B. Understanding Environment Variables
- C. Disadvantages and Limitations of CGI

26. Java Servlets

- A. Servlet as J2EE Web Component
- B. Servlet as an improved CGI
- C. Servlet Fundamentals / API
- D. What is a Web-Container
- E. Servlet Life Cycle / Architecture
- F. HTTP GET and POST Request Methods
- G. Processing Html Forms
- H. What is Name-Value pair
- I. Content Types and MIME
- J. Configuration of Web Application

27. Understanding the Deployment Descriptor (DD) / web.xml

- A. Specifying the Welcome file list
- B. Servlet URL Pattern Mapping
- C. Init Parameters
- D. State Management

28. Using HTTP Session

- A. Using Cookies
- B. Using Application
- C. JavaServer Pages (JSP)
- D. JSP Architecture
- E. JSP Standard / Implicit Objects
- F. request
- G. response
- H. out
- I. config
- J. application



- H. Calling Functions from EL
- I. JSP Standard Tag Library (JSTL)
- J. General Purpose Actions
- K. Conditional Actions
- L. Iterator Actions
- M. Filters in Web Application
- N. Filter Basics
- O. Filter Lifecycle
- P. Filter Chaining
- Q. Filter Example

29. Web Application Security

- A. Introduction
- B. Declarative Security
- C. Programmatic Security
- D. Roles
- E. Authentication
- F. Basic Authentication
- G. Digest Authentication
- H. Form Based Authentication
- I. Standard Login Form

30. Security Constraints

- A. Web Resource Collection
- B. Authorization Constraint

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- K. session
- L. page
- M. pageContext
- N. exception
- O. JSP Page Implementation Class
- P. JSP Basics & Syntax
- Q. JSP Directive Tags
- R. Page Directive
- S. Include Directive
- T. Taglib Directive
- U. JSP Action Tags

32. Forward Action Tag

- A. Include Action Tag
- B. JSP Script related Tags
- C. Scriptlet Tag
- D. Expression Tag
- E. Declaration Tag
- F. Using Java Beans from JSP
- G. UseBean Tag
- H. setProperty Tag
- I. getProperty Tag
- J. JSP Custom Tag Library
- K. JSP 2.0 Tag Files
- L. JSP 2.0 Simple Tag
- M. Empty Tag
- N. Tag with Body Content
- O. (JSP Fragment)

33. JavaBeans

- A. JavaBean Architecture
- B. JavaBean Characteristics
- C. Providing Properties & Methods
- D. JSP Expression Language (EL)
- E. Syntax
- F. Operators
- G. Using different scope objects



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- B. Authorization Constraint

43. Spring Basics

- A. What is Spring Framework
- B. Inversion of Control (IoC)
- C. Dependency Injection (DI)
- D. Bean Factory
- E. Developing First Spring Application

44. Spring Container

- A. Built-in Bean Factories
- B. Application Context
- C. Wiring Beans
- D. Bean Life cycle in Container
- E. Spring Events



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- N. exception
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- A. JavaBean Architecture
- B. JavaBean Characteristics
- C. Providing Properties & Methods
- D. JSP Expression Language (EL)
- E. Syntax
- F. Operators
- G. Using different scope objects
- H. Calling Functions from EL
- I. JSP Standard Tag Library (JSTL)
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- M. Filters in Web Application
- N. Filter Basics
- O. Filter Lifecycle
- P. Filter Chaining
- Q. Filter Example



46. Spring AOP

- A. Introduction AOP
- B. Role of AOP in Spring
- C. AOP Advice
- D. AOP Pointcuts
- E. Spring AOP Introductions
- F. ProxyFactoryBean

47. Spring Data Access

- A. JDBC Abstraction Layer
- B. Data Access Exceptions
- C. DA Support

48. Spring O-R /mapping

- A. What is O-R Mapping
- B. O-R Mapping support in Spring
- C. Hibernate Support / Mapping

49. Spring Web MVC Framework

- A. What is Spring Framework
- B. Inversion of Control (IoC)
- C. Dependency Injection (DI)
- D. Bean Factory
- E. Developing First Spring Application

50. Role of DispatcherServlet

- A. Controller
- B. Handler
- C. View Resolving
- D. Data Binding
- E. File Upload Support



51. Introduction Hibernate

- A. Drawbacks of direct JDBC
- B. Plain Old Java Object (POJO)
- C. What is O-R Mapping
- D. Simple Database Application

52. Hibernate Configuration

- A. Required JAR Files
- B. Hibernate configuration File
- C. Hibernate properties File
- D. Hibernate XML File
- E. SQL Dialects

53. Hibernate Concepts

- A. Id and Primary Key
- B. Id Generation Methods
- C. Session Factory
- D. Session
- E. Transaction
- F. Developing CRUD Application

54. Hibernate O-R Mapping

- A. Mapping Declarations
- B. Modeling Composition with
- C. Relationship
- D. Modeling Composition with
- E. Components
- F. One-to-One Association
- G. One-to-Many Association
- H. Many-to-Many Association
- I. Hibernate Value Types
- J. Custom Types



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- A. Drawbacks of direct JDBC
- B. Plain Old Java Object (POJO)
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56. Manipulating and Querying

- A. Persistent Objects
- B. Object Loading
- C. Executing Queries
- D. Iterating Results
- E. Scalar Results
- F. Bind Parameters Pagination

57. Hibernate Query Language

- A. Select clause
- B. From clause
- C. Where clause
- D. Aggregate functions
- E. Expressions
- F. Sorting
- G. Grouping
- H. Sub queries

58. Criteria Queries

- A. Creating Criteria
- B. Narrowing the Result
- C. Ordering the Result
- D. Native SQL
- E. Using SQL Query
- F. Named SQL Query
- G. Using Stored Procedure for Querying
- H. Creating Custom SQL for CRUD



- I. Creating and Managing Tables
- J. Applying Constraints
- K. Working with Views
- L. Working with Index
- M. Other Database Objects
- N. Controlling User Access
- O. SQL DCL
- P. Using SET Operators
- Q. Working with Mysql workbench
- R. Working with functions
- S. Use cases and project work

Assignments: 60+

