

JAVA ADVANCE

1. IOStreams:

1. What is a stream?
2. Types of Streams?
 1. Byte-oriented Stream
 1. Input Streams
 2. Output Streams
 2. Character-Oriented Streams
 1. Reader
 2. Writer
3. File Input Stream Vs File Output Stream
4. FileReader Vs File Writer
5. File Vs Random Access File
6. Serialization vs Deserialization
7. Externalization

2. Networking:

1. Standalone Appl. Vs Distributed Appl.
2. Client-Server Arch.
3. Socket Vs Server Socket
4. Network Appl. Arch.
5. Socket Programming.

3. Collection Framework:

1. Collection Arch.
2. List and its implementations
 1. Array List
 2. Vector
 3. Stack
 4. Linked List
3. Set and its implementations
 1. Hash Set
 2. Linked Hash Set
 3. Tree Set
4. Map and its implementations
 1. Hashmap
 2. Hash table
 3. Properties
 4. TreeSet
5. Queue and its implementations
 1. Priority Queue
 2. Blocking Queue
 3. Priority Blocking Queue
 4. Linked Blocking Queue
6. Iterators
 1. Iterator

2. List Iterator
3. Enumeration

4. AWT:

1. Text Field, Text Area, Button, Label, Check Box, List.

5. Swing:

1. J Text Field, J Password Field, J Check Box, J Radio Button, J Color Chooser.
2. Event Delegation Model

6. I18N:

1. Number Format
2. Date Format
3. Resource Bundle

7. Reflection API:

1. Class
2. Field
3. Method
4. Constructor

8. Annotations:

1. What is Annotation?
2. Adv of annotations
3. Comments Vs Annotations
4. Types Of annotations
 1. Built-in Annotations
 - @Override
 - @Inherited
 - @Deprecated
 - @Target
 - @SuppressWarnings
 - @Documented
 - @Retention
 2. User Defined Annotations

9. Remote Method Invocation[RMI]:

1. Introduction
2. RMI Architecture
3. Steps to Design RMI Application
4. Parameters in Remote methods

10. Regular Expressions:

1. Introduction
2. Pattern
3. Character
4. Quantifiers

11. Garbage Collection:

1. Introduction
2. Approaches to make an object for GC

- 3. Methods for requesting JVM to run GC
- 4. Finalization
- 12. JVM Arch.
 - 1. Class Loading Sub System
 - 2. Memory Management System
 - 3. Execution Engine
 - 4. Java Native Interface
 - 5. Java Native library
- 13. Generics:
 - 1. Introduction
 - 2. Generic Classes
 - 3. Generic Methods & Wildcard Character.
 - 4. Inter Communication with Non-Generic Code
- 14. Java 8 Features:
 - 1. Lambda Expressions
 - 2. Functional Interfaces
 - 3. Default Methods in Interfaces
 - 4. Process API Updates
 - 5. Predicate
 - 6. Function
 - 7. Consumer
 - 8. Method Reference & Constructor reference Double Colon (::: operator.)
 - 9. Stream API 10. Date & Time API (Joda API.)
- 15. JAVA 9 NEW FEATURES:
 - 1. The Java Shell (RPEL.)
 - 2. The Java Platform Module System(JPMS.)
 - 3. JLINK(JAVA LINKER.)
 - 4. Process API Updates
 - 5. Private Method in Interfaces.
 - 6. Factory Methods for Collections.
 - 7. Enhancements to Java 8 Stream API
 - 8. Try With Resources Enhancements.
 - 9. Diamond Operator 26. Basics of JDBC:
 - 1. Introduction.
 - 2. JDBC Drivers.
 - 3. Steps to prepare JDBC Applications
 - 4. JDBC Applications for CRUD Operations
 - 10. @SafeVarargs Annotation
 - 11. HTTP/2 Client
 - 12. G1 Garbage Collector
- 16. Java 10 Updatons:
 - 1. Local-Variable Type Inference
 - 2. Consolidate the JDK Forest into a Single Repository
 - 3. Garbage-Collector Interface

- 4. Parallel Full GC for G1
 - 5. Application Class-Data Sharing
 - 6. Thread-Local Handshakes
 - 7. Remove the Native-Header Generation Tool (javah)
 - 8. Additional Unicode Language-Tag Extensions
 - 9. Heap Allocation on Alternative Memory Devices
 - 10. Experimental Java-Based JIT Compiler
 - 11. Root Certificates
 - 12. Time-Based Release Versioning
17. Java 11 Version Updatons:
- 1. Running Java File with single command
 - 2. New utility methods in String class
 - 3. Local-Variable Syntax for Lambda Parameters
 - 4. Nested Based Access Control
 - 5. HTTP Client
 - 6. Reading/Writing Strings to and from the Files
 - 7. Flight Recorder
18. Java 12 Features:
- 1. Switch Expressions
 - 2. File mismatch() Method
 - 3. Compact Number Formatting
 - 4. Teeing Collectors in Stream API
 - 5. Java Strings New Methods – indent(), transform(), describeConstable(), and resolveConstantDesc().
 - 6. JVM Constants API
 - 7. Pattern Matching for instanceof
 - 8. Raw String Literals is Removed From JDK 12.
19. Java 13 Updatons:
- 1. Text Blocks
 - 2. New Methods in String Class for Text Blocks
 - 3. Switch Expressions Enhancements
 - 4. Reimplement the Legacy Socket API
 - 5. Dynamic CDS Archive
 - 6. ZGC: Uncommit Unused Memory
 - 7. FileSystems.newFileSystem() Method
20. JAVA 14 Updatons: Developers Required Features:
- 1. Switch Expressions (Standard)
 - 2. Pattern Matching for instanceof (Preview)
 - 3. Helpful NullPointerExceptions
 - 4. Records (Preview) 5. Text Blocks (Second Preview)

JDBC:

- 1. Storage Areas

1. Temporary Storage Areas
2. Permanent Storage Areas
2. Query Processing System
 1. Query Tokenization
 2. Query Processing
 3. Query Optimization
 4. Query Execution
3. Driver and Driver Types
 1. Type 1 Driver
 2. Type 2 Driver
 3. Type 3 Driver
 4. Type 4 Driver
4. Steps to design JDBC Applications
 1. Load and register the Driver
 2. Establish the connection between Java Applications.
 3. Prepare either Statement or prepared Statement or Callable Statement Objects.
 4. Write and execute SQL Queries.
 5. Close the connection.
5. ResultSet and ResultSet Types
 1. Read only ResultSet
 2. Updatable ResultSet
 3. Forward only ResultSet
 4. Scrollable ResultSets
 1. Scroll Sensitive ResultSet
 2. Scroll Insensitive ResultSet
6. Prepared Statement
 1. PreparedStatement with insert sql query
 2. PreparedStatement with update sql query
 3. PreparedStatement with select sql query
 4. PreparedStatement with Dates Handling
 5. PreparedStatement with Batch Updatations
7. Callable Statement
 1. CallableStatement with procedure
 2. CallableStatement with function
 3. CallableStatement with CURSOR Type Procedure
 4. CallableStatement with CURSOR type function
8. Transaction Management
 1. Atomicity
 2. Consistency
 3. Isolation
 4. Durability
9. Savepoint
10. Batch Updatations
11. Connection Pooling

12. BLOB and CLOB

13. RowSets

UI Technologies:

- 1. HTML5**
- 2. CSS3**
- 3. Java Script**
- 4. JQuery**
- 5. Bootstrap**

SERVLETS:

- 1. Introduction**
 - 1. Standalone Applications**
 - a. CUI Applications**
 - b. GUI Applications**
 - 2. Enterprise Applications**
 - a. Web Applications**
 - b. Distributed Applications**
- 2. Client-Server Arch**
 - 1. Client**
 - 2. Protocol**
 - 3. Server**
- 3. Servlets Design**
 - 1. Servlet interface**
 - 2. Generic Servlet**
 - 3. Http Servlet**
- 4. Servlet Lifecycle**
- 5. User Interface**
 - 1. Static Form Generation**
 - 2. Dynamic Form Generation**
- 6. Servlet Config**
- 7. Servlet Context**
- 8. Servlet Communication**
 - 1. Browser-servlet**
 - a. SendRedirect Mechanism**
 - 2. Web-component**
 - a. Include Mechanism**
 - b. Forward mechanism**
 - 3. Applet-Servlet**
- 9. Session Tracking Mechanisms**
 - 1. HttpSession Session Tracking Mechanism**
 - 2. Cookies Session Tracking Mechanism**
 - 3. URL-Rewriting Session Tracking Mechanism**

- 4. Hidden Form Fields Session Tracking Mechanism
- 10. Servlets Filters
- 11. Servlets Wrappers
 - a. ServletRequest Wrapper \
 - b. HttpServletRequest Wrapper
 - c. ServletResponse Wrapper
 - d. HttpServletResponse Wrapper
- 12. Servlets Listeners
 - a. Request Listeners
 - b. Context Listeners
 - c. Session Listeners
- 13. Web Security
 - a. Programmatic Approach
 - b. Declarative Approach

JAVA SERVER PAGES

- 1. Introduction
- 2. JSP Deployment
- 3. JSP Life Cycle
- 4. JSP Elements
 - 1. JSP Directives
 - 2. Scripting Elements
 - 3. JSP Actions
- 5. JSP Directives
 - 1. Page Directive
 - 2. Include Directive
 - 3. Taglib Directive
- 6. JSP Scripting Elements
 - 1. Declarations \
 - 2. Scriptlets
 - 3. Expressions
- 7. JSP implicit objects
 - 1. Out
 - 2. Request
 - 3. Response
 - 4. Config
 - 5. Application
 - 6. Session
 - 7. Exception
 - 8. Page
 - 9. Page Context
- 8. JSP Scopes

1. Page Scope
2. Request Scope
3. Application Scope
4. Session Scope

9. JSP Standard Actions

1. `jsp:useBean`
2. `<jsp:setProperty>`
3. `<jsp:getProperty>`
4. `<jsp:include>`
5. `<jsp:forward>`
6. `<jsp:param>`
7. `<jsp:plugin>`
8. `<jsp:fallback>`
9. `<jsp:params>`
10. `<jsp:declaration>`
11. `<jsp:scriptlet>`
12. `<jsp:expression>`

10. JSP Custom Actions

1. Tag
2. IterationTag
3. BodyTags
4. TagSupport
5. BodyTagSupport
6. SimpleTag
7. SimpleTagSupport
8. Nested Tags

11. JSTL

1. Core Tags
2. XML Tags
3. Internationalization or I18N Tags (Formatted tags)
4. SQL Tags
5. Functions tags

12. Expression Language

1. EL operators
2. EL implicit objects.
3. EL functions.