

CORE JAVA Course Content



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J2SE:[Core Java]:

1. Introduction:

1. Java History
2. Differences between java and others
3. Java Features
4. Java Naming Conventions
5. Java Programming Format

2. First Java Application Development:

1. Java Installation
2. Editor
3. Java Application and Java File Saving.
4. Compile Java File
5. Execute Java Applications.

3. Language Fundamentals:

1. Tokens
 2. Identifiers
 3. Literals
 4. Key Words /Reserved Words
 5. Operators
2. Data Types and Type casting
 3. Java Statements
 4. Arrays

4. OOPS:

1. Types of Programming Languages
 1. Unstructured Programming Languages
 2. Structured Programming Languages
 3. Object Oriented Programming Languages
 4. Aspect Oriented Programming Languages
2. Object Oriented Features
 1. Class
 2. Object
 3. Encapsulation
 4. Abstraction
 5. Inheritance
 6. Polymorphism
 7. Message Passing
3. Object Based PL VS Object Oriented PL
4. Class syntax
5. Method Syntax
6. Var-arg method.
7. Accessor Methods VS Mutator Methods
8. Syntax to create an object
9. Immutable Objects VS Mutable Objects
10. Object Vs Instance
11. Constructors
 1. Default Con.
 2. User defined con.
 1. 0-arg-con.
 2. param-con.
12. Instance Context
 1. Instance variable
 2. Instance method
 3. Instance block.
13. This keywords
 1. To refer current class variable.
 2. To refer current class methods.
 3. To refer current class blocks.
 4. To return current class objects.
14. Static keyword
 1. Static variable
 2. Static method
 3. Static block
 4. Static import
15. Main () method
 1. Public static void main (String [] args)
 2. Why public?
 3. Why static?
 4. Why void?
 5. Why main

6. Why String [] as parameter?
7. Is it possible to overload main (-) method?
8. Is it possible to override main (--) method?
9. Is it possible to provide more than one main (--) method with in a single java appl?
10. Is it possible to execute any java application without using main method?

16. Factory Method
17. Singleton classes and Doubleton classes
18. Final Keyword

1. Final variable 3. Final class
2. Final method

19. Enum keyword
20. Relationships in JAVA
1. IS-A Vs HAS-A Vs USE-A

21. Associations in Java
1. one-one 3. many-one
2. one-many 4. many-many

22. Inheritance and Types of inheritances
1. Single 4. Hierarchical
2. Multiple 5. Hybrid.
3. Multilevel

23. Staic flow in inheritance
24. Instance flow in inheritance

25. Super keyword
26. Class level type casting
27. Poly Morphism

1. Static PM3. Dynamic PM
2. Method overloading

28. Method overriding
29. Abstract Methods Vs Concreate Methods
30. Abstract class Vs concrete Class
31. Class Vs Abstract class Vs interface
32. "Instance of" operator
33. What is Adapter class?
34. What is marker interface?

35. Object Cloning
1. Shallow Cloning
2. Deep Cloning
36. JAVA8 features in interfaces

5. Inner classes:

1. Member Inner class 3. Method local Inner class
2. Static Inner class 4. Anonymous Inner class

6. Wrapper classes:

Byte,Short,Integer,Long,Float,Double, Boolean, Character

7. Packages:

1. What is a package?
2. Adv. of packages
1. Modularity 4. Reusability
2. Abstraction 5. Sharability
3. Security

3. Types of packages

1. Predefined packages
2. User defined packages

4. Jar files preparation
5. Executable Jar files
6. Batch files preparation

8. String manipulations:

1. String 3. String Builder
2. String Buffer 4. String to kenizer

9. Exception Handling:

1. Error VS Exception
2. Exception Def.
3. Types of Exceptions
1. Predefined Exceptions
2. User defined Exceptions
4. Checked Exception VS Unchecked Exception
1. Pure Checked Exceptions
2. Partially Checked Exceptions
5. Throw Vs throws
6. try-catch-finally
7. Custom Exceptions
8. Java7 Features in Exception Handling
1. Automatic Resource management
2. Multi catch block.

10. Multi-Threading:

1. Process Vs Processor Vs Procedure
2. Single Processing Mech. Vs Multi Processing Mech.
3. Single Thread model And Multi Thread Model
4. Thread Design
1. Extending Thread class
2. Implementing Runnable interface.
5. Thread lifecycle
1. New/Born 4. Blocked
2. Runnable 5. Dead
3. Running
6. Thread class library
1. Sleep () 3. Yield ()
2. Join () 4. Stop ()
7. Daemon Thread
8. Synchronization
9. Inter Thread communication
1. Wait () 3. Notify All()
2. Notify ()

10. Deadlocks

11. IOStreams:

1. What is 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. File Reader Vs File Writer

5. File Vs Random Access File

6. Serialization vs Deserialization

7. Externalization

12. Networking:

1. Standalone Appl. Vs Distributed Appl.

2. Client-Server Arch.

4. Network Appl. Arch.

3. Socket Vs Server Socket

5. Socket Programming.

13. Collection Framework:

1. Collection Arch.

2. List and its implementations

1. Array List

3. Stack

2. Vector

4. Linked List

3. Set and its implementations

1. Hash Set

3. Tree Set

2. Linked Hash Set

4. Map and its implementations

1. Hash Map

3. Properties

2. Hash table

4. TreeSet

5. Queue and its implementations

1. Priority Queue

3. Priority Blocking Queue

2. Blocking Queue

4. Linked Blocking Queue

6. Iterators

1. Iterator

2. List Iterator

3. Enumeration

14. AWT:

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

15. Swing:

1. J Text Field, J Password Field, J Check Box, J Radio Button, J Color Chooser.

2. Event Delegation Model

16. I18N:

1. Number Format

3. Resource Bundle

2. Date Format

17. Reflection API:

1. Class

3. Method

2. Field

4. Constructor

18. 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

19. Remote Method Invocation[RMI]:

1. Introduction

2. RMI Architecture

3. Steps to Design RMI Application

4. Parameters in Remote methods

20. Regular Expressions:

1. Introduction

3. Character

2. Pattern

4. Quantifiers

21. Garbage Collection:

1. Introduction

4. Finalization

2. Approaches to make an object for GC

3. Methods for requesting JVM to run GC

22. JVM Arch.

1. Class Loading Sub System

4. Java Native Interface

2. Memory Management System

3. Execution Engine

5. Java Native library

23. Generics:

1. Introduction

2. Generic Classes

3. Generic Methods & Wild Card Character.

4. Inter Communication with Non-Generic Code

24. Java 8 Features:

1. Lambda Expressions

5. Predicate

2. Functional Interfaces

6. Function

3. Default Methods in Interfaces

7. Consumer

4. Static Methods in Interfaces

9. Stream API

8. Method Reference & Constructor reference Double Colon (::: operator.)

10. Date & Time API (Joda API.)

25. JAVA 9 NEW FEATURES:

1. The Java Shell (RPEL.)

10. SafeVargs Annotation

2. The Java Platform Module System(JPMS.)

3. JLINK(JAVA LINKER.)

11. HTTP/2 Client

4. Process API Updates

12. G1 Garbage Collector

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

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

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

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.

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

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)

ADV. JAVA Course Content



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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 Application.
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 Updations

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 Updations

11. Connection Pooling

12. BLOB and CLOB

13. RowSets

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

9. 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 | 6. Session |
| 2. Request | 7. Exception |
| 3. Response | 8. Page |
| 4. Config | 9. Page Context |
| 5. Application | |

8. JSP Scopes

- | | |
|------------------|----------------------|
| 1. Page Scope | 3. Application Scope |
| 2. Request 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. Nestedtags

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.

SPRING Course Content

1. Introduction:

1. Enterprise Appl
2. Enterprise Application Layers
 1. Presentation Layer
 2. Business Layer
 3. Data Access Layer
3. System Architectures
 1. 1-Tier Arch.
 2. 2-Tier Arch.
 3. n-Tier Arch
4. Types of Enterprise Applications.
 1. Web Applications
 2. Distributed Applications
5. Modeled Arch.
 1. Model-I Arch.
 2. Model-II Arch.
6. MVC
7. Requirement to user Frameworks
8. Types of Frameworks
 1. Web Frameworks
 2. Application Frameworks
9. Differences between Spring and Struts, JSF
10. Spring History
11. Spring Modules.
 1. Spring1.x Modules
 2. Spring2.x Modules
 3. Spring3.x Modules
 4. Spring4.x Modules
 5. Spring5.x Modules

2. Steps To Prepare Spring Application

[Core Module Application]:

1. Download Spring Framework from Internet.
2. Provide Spring Setup in Eclipse IDE
3. Prepare Bean Class
4. Prepare Bean Configuration File
5. Prepare Test / Client Appl.

3. Core Module

1. Introduction
2. IOC Containers
 1. BeanFactory
 1. XmlBeanFactory
 2. Resources
 1. ByteArrayResource
 2. FileSystemResource
 3. ClassPathResource
 4. InputStreamResource
 5. UrlResource
 6. ServletContextResource
 7. PortletContextResource



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2. ApplicationContext
 1. ClassPathXmlApplicationContext
 2. FileSystemXmlApplicationContext
 3. WebXmlApplicationContext
3. Beans in Spring Framework
 1. Beans Definition
 2. Beans Configuration
 1. XML Based Configuration
 2. Annotation Based Configuration
 3. Java Based Configuration
3. Bean Scopes
 1. singleton Scope
 2. prototype Scope
 3. request Scope
 4. session Scope
 5. globalSession Scope
 6. application Scope
 7. webSocket scope
 8. Custom Scopes in Spring Framework.
4. Bean Lifecycle
 1. Bean Loading
 2. Bean Instantiation
 1. By Constructor
 2. By Static Factory Method
 3. By Instance Factory Method
 3. Bean Initialization and Destruction
 1. By Custom initialization and destruction methods.
 2. By InitializingBean and DesposableBean callback interfaces.
 3. By @PostConstruct and @PreDestroy Annotations

5. Beans Inheritance
6. Nested Beans
7. BeanPostProcessor
4. Inversion Of Control[IOC]
 1. Dependency Lookup
 1. Dependency Pull
 2. Contextualized Dependency Lookup
 2. Dependency Injection
 1. Constructor Dependency Injection
 2. Setter Method Dependency Injection
 3. Different Types of Elements Injection
 1. User defined data types elements injection.
 2. List types injection
 3. Set types injection
 4. Map Types Injection
 5. Properties types Injection
 4. Circular Dependency Injection
5. Name Spaces
 1. P-Name space
 2. C-Name Space
6. Beans Autowiring or Beans Collaboration
 1. Autowiring and its Modes
 1. no
 2. byName
 3. byType
 4. constructor
 2. Annotation Based Wiring
 3. Autodiscovery or Stereo Types
 4. Java based Autowiring[Java Based Configuration]
7. Method Injection
 1. Lookup Method Injection
 2. Arbitrary Method Replacement
8. Event Handling
 1. ContextRefreshedEvent
 2. ContextStartedEvent
 3. ContextStoppedEvent
 4. ContextClosedEvent
 5. RequestHandledEvent
 6. Custom Events In Spring Framework
9. Bean Validations in Spring Framework
10. Internationalization in Spring Framework
11. Bean Manipulations and Bean Wrappers
12. Property Editors

1. ByteArrayPropertyEditor	9. PatternEditor
2. ClassEditor	10. PropertiesEditor
3. CustomBooleanEditor	11. StringTrimmerEditor
4. CustomCollectionEditor	12. URLEditor
5. CustomNumberEditor	13. Custom Property Editors
6. FileEditor	[User defined]
7. InputStreamEditor	
8. LocaleEditor	

13. Profiling
14. Spring Expression Language[SpEL]

1. SpEL Expressions	4. SpEL Medthod Invocations
2. SpEL Operators	5. SpEL Collections
3. SpEL Variables	

4. Spring JDBC/DAO Module:

1. Introduction
2. DAO Definition
3. Advantages of DAOs
4. Drawbacks with DAOs
5. Guidelines to prepare DAOs
6. Pain JDBC Vs Spring JDBC
7. JdbcTemplate
8. NamedParameterJdbcTemplate
 1. Parameter values through Map
 2. Parameter Values through SqlParameterSource
 1. MapSqlParameterSource
 2. BeanPropertySqlParameterSource
9. SimpleJdbcTemplate
10. DAO Support Classes
 1. JdbcDaoSupport
 2. NamedParameterJdbcDaoSupport
 3. SimpleJdbcDaoSupport
11. Spring Batch Updations or Batch Processing
12. Stored Procedure and Functions in Spring JDBC
 1. Procedures and Functions without CURSOR Types
 2. Procedures and Functions with CURSOR Types
13. Blob and Clob processing in Spring JDBC
 1. AbstractLobCreatingPreparedStatementCallback
 2. AbstractLobStreamingResultSetExtractor
 3. LobCreator
 4. LobHolder
14. Connection Pooling in Spring JDBC
 1. Default Connection Pooling Mech.
 2. Third Party Connection Pooling Mechanisms

1. Apache DBCP	3. Proxool
2. C3PO	
 3. Application Servers provided Connection Pooling Mechanism
 1. Weblogic12c provided Connection Pooling Mechanism.

5. Spring ORM

1. Introduction
2. Hibernate Integration with Spring
 1. Hibernate Introduction
 2. Hibernate Application Development
 3. Spring with Hibernate Integration.
3. JPA Integration with Spring
 1. JPA Introduction.
 2. JPA Application development
 3. Spring with JPA Integration.

4. iBatis integration with Spring

1. iBatis Introduction.
2. iBatis Application Development.
3. Spring with iBatis Integration.

6. Aspect Oriented Programming [AOP]

1. Introduction

2. AOP Terminology

- | | |
|-----------------|------------|
| 1. Aspect | 6. Target |
| 2. Advice | 7. Proxy |
| 3. JoinPoint | 8. Weaving |
| 4. Pointcut | 9. Advisor |
| 5. Introduction | |

3. Types of AOPs

1. Proxy Based AOP
2. Declarative Based AOP
3. Annotation Based AOP

4. Advices

- | | |
|---------------------------|--------------------------|
| 1. Before Advice | 4. Around Advice |
| 2. After Advice | 5. After-Throwing Advice |
| 3. After-Returning Advice | |

5. Pointcuts

1. Static Pointcut
2. Dynamic Pointcut.

7. Spring Transactions

1. Introduction

2. Transaction Attributes

3. Isolation Levels

4. Programmatic Based Transactions

5. Declarative Based Transactions.

6. Annotation Based Transactions

8. Spring web MVC Module

1. Introduction

2. Spring MVC Flow

3. Controllers

1. Abstract Controller
2. ParameterizableViewController
3. MultiActionController
4. Command Controllers
 1. AbstractCommandController
 2. AbstractFormController
 3. SimpleFormController
 4. AbstractWizardFormController

4. Handler Mappings

1. BeanNameUrlHandlerMapping
2. SimpleUrlHandlerMapping

5. HandlerInterceptor

6. ViewResolvers

1. AbstractCachingViewResolver
2. XmlViewResolver
3. ResourceBundleViewResolver
4. UrlBasedViewResolver
5. InternalResourceViewResolver
6. VelocityViewResolver / FreeMarkerViewResolver

7. Spring Exception Handling

8. File Uploading and File Downloading

9. Internationalization

10. Spring MVC with Tiles

9. Spring Web :

1. Introduction

2. Spring Integration with Struts.

3. Spring Integration with JSF.

10. Spring Security

1. Spring Security Introduction

2. Spring Security Features

3. Spring Security XML Based Example

4. Spring Security Java Based Example

11. Spring Boot

1. Introduction

2. Spring Boot Features/ Advantages.

1. Spring Boot Starters.
2. Spring boot Auto configurations
3. Spring Boot Embedded Containers
4. Spring Boot Actuators
5. Spring boot Test

3. Spring boot Core Applications [Core Module].

4. Spring boot JDBC Applications [JDBC Module].

5. Spring boot Hibernate Application [ORM Module]

6. Spring Boot JPA Application [ORM module]

7. Spring Boot Data-JPA Application [ORM Module]

8. Spring Boot Transaction Application [Transaction module]

9. Spring boot Web MVC Application[Web MVC Module]

HIBERNATE Course Content

1. Introduction

1. Enterprise
2. Enterprise Application
3. Enterprise Application Layer
 1. User Interface Layer
 2. Business Processing Layer
 3. Data Storage and Access Layer
4. Data Persistency
5. Data Persistency through Serialization and Deserialization
6. Data Persistency through JDBC
7. Data Persistency through ORM
 1. Paradigm Mismatches
 1. Granularity Mismatch
 2. Sub Types Mismatch
 3. Associations Mismatch
 4. Identity Mismatch
 2. EJBs Vs Hibernate
 3. JPA Vs Hibernate
8. Hibernate History
9. Hibernate Features
10. Hibernate Arch.

2. Steps to Prepare Hibernate Application

1. Persistence Class / POJO class
2. Mapping File
3. Hibernate Configuration File
4. Client Application

3. Hibernate Applications

1. Hibernate Application with Main Class as Client.
2. Hibernate Application with GUI Application as Client.
3. Hibernate Application with Servlet as Client.
4. Hibernate Application with JSP Page as Client.
5. Hibernate Application with Struts Application as Client.
6. Hibernate Application with MYSQL DB
7. Hibernate Application with Multiple DBs [Oracle DB and MySQL DB]
8. Hibernate Basic Annotations [Without Mapping File]
9. Hibernate Application without Configuration File
10. Hibernate Application with Composite Keys.



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4. Hibernate Persistence Object Lifecycle

1. Transient State
2. Persistent State
3. Detached State
4. Removed State

5. Hibernate Tools

1. Schema Export
2. Schema Update
3. Code Generation

6. Primary Key Generation Algorithms [XMI and Annotations]

- | | |
|--------------|------------|
| 1. Assign | 7. Native |
| 2. Increment | 8. UUID |
| 3. Sequence | 9. Foreign |
| 4. Identity | 10. GUID |
| 5. Hilo | 11. Select |
| 6. Seq-Hilo | |

7. Transaction Management

1. ACID Properties

1. Automicity
2. Consistnacy
3. Isolation
4. Durability

2. Transaction Management in JDBC

1. Automicity Achievement in JDBC
2. Isolation Problems

3. Transaction Management in Hibernate

8. Hibernate Query Language [HQL]

1. HQL Elements

1. Clauses

- | | |
|--------------------|----------------------|
| 1. 'From' Clause | 4. 'Order by' Clause |
| 2. 'Select' Clause | 5. 'Group by' Clause |
| 3. 'Where' Clause | 6. 'Having' Clause |

2. Aggregate Functions

- | | |
|-------------|-----------|
| 1. count(-) | 4. max(-) |
| 2. sum(-) | 5. avg(-) |
| 3. min(-) | |

3. Generic Expressions

1. Arithmetic Operators in Generic Expressions
2. Comparison Operations in Generic Expressions
3. Scalar Functions in Generic Expressions
 1. In
 2. Between
 3. Like
 4. is null
 5. is not null
4. Associations and Joins
5. Parameters
 1. Positional parameters
 2. Names Parameters
6. Subqueries
 1. Pagination
 2. HQL with Updatons

9. Native SQL

1. Scalar SQL Queries
2. Stored Procedures and Functions

10. Criteria API

11. Hibernate Filters

12. Hibernate Mappings

1. Basic 'OR' Mapping
2. Component Mapping
3. Inheritance Mapping
 1. Table per Class Hierarchy
 2. Table per Sub-Class
 3. Table per Concreate Class
4. Associations Mapping
 1. One-To-One Association
 2. One-To-Many Association
 3. Many-To-One Association
 4. Many-To-Many Association

13. Connection Pooling

1. Inbuilt Connection Pooling Support in Hibernate.
2. Third Party Connection Pooling Mechanisms C3PO, Proxool, DBCP.....
3. Connection Pooling through Weblogic Server JNDI.

14. Cache Mechanisms

1. I level Cache
2. II Level Cache

ORACLE 19c Course Content

- By Real Time Expert

Chapter 1 - Demo

1. Introduction to prerequisites
2. File and File System
3. Disadvantages of file
4. Introduction to Database
5. Introduction to Database Management systems
6. Introduction to Database Models

Chapter 2

1. Database Models
 - Hierarichal Model
 - Network Model
 - Relational Model
2. Features of RDBMS
3. Client-Server Technology

Chapter 3

1. Oracle Versions
2. Oracle Corporation Products
3. About SQL & SQL*PLUS
4. Sub Languages in SQL

Chapter 4

1. Oracle Data Types
2. DDL Commands
 - Create
 - Alter-add, modify, drop column
 - Drop

Chapter 5

1. DML Commands
2. Insert Statement
3. Oracle Operators
4. Where Clause
5. Update, Delete Statements

Chapter 6

1. DQL – SELECT stmt
2. Examples on Select
3. Using Where clause
4. Special Operators
 - IN, BETWEE, LIKE, IS NULL

Chapter 7

1. DQL – SELECT stmt
2. Examples on Select
3. Using Where clause
4. Special Operators
 - IN, BETWEE, LIKE, IS NULL

Chapter 8

1. Select with Arthematic Expressions & Alias
2. Names, Distinct clause
3. Built in Functions
4. Arthematic Functions
5. Abs, sqrt, power, sign, round, trunc, ceil, floor, sin, cos, tan, exp, ln, log
6. Character Functions
7. Inticap, lower, upper, reverse, length, ascii, chr,
8. lpad, rpad, soundex

Chapter 9

1. Built in Functions
2. Character Functions
 - Ltrim, rtrim,trim, concat, replace, translate, substr, instr
3. Date Functions
 - Sysdate, Add_months, months_between, last_Chapter, next_Chapter

Chapter 10

1. Date Conversions
2. To_char, to_date
3. Group Functions
4. Count, sum,min, max, avg, stddev, variance
5. General Functions
6. Least, greatest

Chapter 11

1. General Functions
2. NVL, Decode, to_number
3. Select Clauses
4. Group by Having, Order by clauses

Chapter 12

1. Joins
 - Equi Join, Non Equi Join, Outer Joins & Self Join

Chapter 13

1. Set Operators
 - Union all, Union, Intersect, Minus
2. Making a copy of Table
3. Data control Language (DCL)
4. Sharing Tables and Columns
 - Grant, Revoke
5. PUBLIC, WITH GRANT OPTION Keywords

Chapter 14

1. Creating New Users
2. Transaction control Language (TCL)
 - Commit, Rollback, Savepoint
3. Truncate, Rename commands
4. Rename Column & Constraints

Chapter 15

1. Sub Queries
 - Introduction & Examples
2. Sub Queries with Delete and Update

Chapter 16

1. Special operators in sub queries
 - Exists, Any, Some, All
 - Correlated sub queries
2. Locks – Row Level, Table Level Locks

Chapter 17

1. Integrity Constraints
2. Column level syntax
3. On delete cascade, Cascade constraints

Chapter 18

1. Integrity Constraints
2. Column, Table Constraint syntax

Chapter 19

1. Database Objects in Oracle
2. Views
 - Simple views, Read only view

Chapter 20

1. Join Views
2. Materialized views
3. Synonyms – Private & Public Synonyms
- Sequence – Create and Alter

Chapter 21

1. Index – Normal, Composite, Unique, Function
2. Based Indexes
3. Pseudo Columns
 - Rownum, Rowid, Level with Examples
 - Top-N Analysis – Examples

PL/SQL

Chapter 22

1. PL/SQL
2. Introduction to PL/Sql
3. Features, Block structure,
4. Data types, Executable Stmts
5. Simple Examples

Chapter 23

1. Conditional Statements
2. If, Case ,
3. Iteration control Statements
4. Simple Loop, While Loop, Numeric For loop

Chapter 24

1. Cursors
 - Introduction, Types of cursors
 - Explicit cursors – Declaring Cursor
 - Cursor Operations, Cursor Attributes
 - Examples using Cursors

Chapter 25

1. Cursors with Parameters
2. Where current of Clause
3. Implicit Cursors – Examples
4. Exceptions
 - Pre-defined & User defined Exceptions
 - Non predefined Exception
5. Examples

Chapter 26

1. Composite Data Types
2. PL/SQL Records
3. PL/SQL Tables
4. Nested Records
5. Using Record in Table
6. Examples

Chapter 27

1. Database Triggers
2. Introduction Types of Triggers
3. Row Triggers
4. Examples

Chapter 28

1. Database Triggers – contd
2. Statement Triggers
3. Instead of Triggers – Views
4. Examples

Chapter 29

1. Sub Programs – Features
 - Procedures, Functions
2. Examples

Chapter 30

1. Sub Programs... contd
2. Parameter Modes –IN, OUT, INOUT
3. Packages
4. Examples

Chapter 31

1. Packages – contd
2. Overloading of functions in Packages
3. Local subprograms in Packages
4. Examples

Chapter 32

1. Object Technology
2. Objects, Using in Tables, Nested Objects

Chapter 33

1. Objects with Methods
2. Collections
 - Nested Tables
 - Varying Arrays
3. Diff between Nested tables and Varrays

Chapter 34

1. File Input & Output
2. UTL_FILE built in package
3. Oracle Utilities
4. Export, Import

Chapter 35

1. Using LONG and raw datatypes
2. Using LOBS
 - LOB Types –CLOB, NCLOB BLOB, BFILE
3. Working with LOB Tables

Chapter 36

1. Returning into Clause
2. Bulk Collect construct
 - Using it in select, Update, Delete & Fetch
3. Temporary Tables
4. Group by with ROLLUP & CUBE Operators

Chapter 37

1. NORMALIZATION
2. Normal Forms with Example

Chapter 38

1. Partition Tables
 - Alter partitions – add, drop, merge
 - Partition Indexes

Chapter 39

1. New Date Functions
 - Sysimestamp, Current_time Stamp,
 - Localtimestamp, DBTIMEZONE,
 - SESSIONTIMEZONE, EXTRACT
 - Timestamp Datatype

Chapter 40

1. New General Functions
 - Coalesce, Nullif, NVL2
2. Analytical functions
3. Rank, Dense_Rank, Lag, Lead, First, Last
4. Multiple Inserts
5. Conditional Insert
6. Merge Statement

UI Technologies Course Content

1. HTML

2. CSS

3. JAVA SCRIPT

4. JQUERY

5. BOOTSRAP

6. DOM



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DATABASE

1. Oracle
2. MySQL
3. Mongo DB

SERVER

1. Tomcat
2. Weblogic
3. JBOSS and Wildfly
4. Glassfish

ID's

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4. Netbeans

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