

JAVA+SQL



CURRICULUM

6 WEEKS

INTRODUCTION TO JAVA

- Understanding Requirement: Why Java
- Why Java is important to the Internet
- JAVA on LINUX Platform

INTRODUCTION TO JAVA VIRTUAL MACHINE

- Java Virtual Machine Architecture
- Class loading process by Classloaders
- Role of Just in Time Compiler (JIT)
- Execution Engine

AN OVERVIEW OF JAVA AND BUZZWORDS

- Data Types, Variables and Arrays
- Operators
- Control statements
- Object oriented Paradigms
- Abstraction
- The Three OOP Principles
(Encapsulation, Inheritance and Polymorphism)

JAVA CLASSES AND OOP IMPLEMENTATION

- Class Fundamentals
- Command Line Arguments
- Learning static initializer
- Declaration on of Objects
- Instance Variable Hiding
- Overloading and Overriding of Methods
- Understanding of Access Controls:
 - Private, Public and Protected
- Learning Nested and Inner Classes
- Dynamic method Dispatching
- Using Abstract Classes
- Using final to prevent Overriding & Inheritance
- Garbage Collection

PACKAGES AND INTERFACES

- Defining a Package
- Understanding CLASSPATH
- Access Protection
- Importing Packages
- Defining and implementing an Interface
- Abstract classes Vs Interfaces
- Generics
- Annotations
- Vargs
- For Each

INTRODUCTION TO ARRAY

- Single dimension array
- Multi dimension array

EXCEPTION HANDLING

- Fundamentals of exception on handling
- Types of exceptions
- Learning exception handlers
- Try and catch
- Multiple catch clauses
- Nested try statements
- Throw, throws and finally
- Custom Exception

STRING HANDLING

- Learning String Operations
- Learning Character Extraction
- Learning String Comparison
- Understanding of String Buffer Class & String Builder Class

MULTITHREADED PROGRAMMING

- The Java Thread Model
- Creating a Thread: Extending Thread, Implementing Runnable
- Creating Multiple Threads and Context Switching
- Synchronization: Methods and Statement
- Interthread Communication

MANAGING INPUT AND OUTPUT IN JAVA

- Introduction to I/O streams
- File Handling
- Binary Streams
- Character Streams
- Data Streams
- Serialization

NETWORKING

- Introduction to Networking
- URL, InetAddress
- Socket and Server Socket
- Datagram Socket

COLLECTION API

- Collection Overview
- The Collection Interfaces (List, Set, SortedSet)
- The Collection Classes (ArrayList, LinkedList, HashSet, TreeSet)
- Accessing a Collection via an Iterator
- Working with Maps

J2EE (JAVA 2 ENTERPRISE EDITION)

INTRODUCTION TO JAVA

- Introduction to J2EE Architecture
 - Tier Architecture
 - Single Tier
 - Two Tier
 - Three Tier
 - N Tier

J2EE COMPONENTS

- Web Components
- Business Components

J2EE CONTAINERS

- Container Types
- Container Services

JDBC

- Introduction to JDBC
- JDBC Drivers
- Statements
- Metadata
- Scrollable & Updatable ResultSet
- Batch Updates

JAVA SERVLET

- Introduction to Web
- Programming
- Advantages of Servlets
- Servlet Lifecycle
- Packing and Deployment
- Session Tracking
- Request Dispatching

PROJECT WORK

JAVA SERVER PAGES (JSP)

- JSP Architecture
- JSP Elements
- JSP Objects
- Custom Tags

Ajax

- XMLHttpRequest
- Ready State
- Onreadystatechange
- ResponseText
- ResponseXML
- Status

Jquery

- Jquery with Ajax
- Jquery Event
- Jquery Selectors
- JSON

RMI

- Distributed Applications
- RMI Architecture
- Implementation

JAVA Mail API

Utilities

- My Eclipse
- Net Beans

Web Server

- Apache Tomcat

Application Server

- Bea's Web logic

Introduction to Framework

- Spring
- Hibernate

INTRODUCTION TO SQL

Introduction to Oracle Database

- List the features of Oracle Database 12c
- Discuss the basic design of Database
- Categorize the different types of SQL statements
- Describe the data set used by the course
- Log on to the database using SQL Developer environment
- Save queries to files and use script files in SQL Developer

Retrieve Data using the SQL SELECT Statement

- List the capabilities of SQL SELECT statements
- Select Table Data With All Columns
- Select Table Data With Specific Columns
- Use Arithmetic Operators
- Use Concatenation Operators
- Learn the DESCRIBE command to display the table structure

Learn to Restrict and Sort Data

- Use WHERE clause to limit the output retrieved
- List the comparison operators and logical operators
- Describe the rules of precedence for comparison and logical operators
- Use character string literals in the WHERE clause
- Write queries that contain an ORDER BY clause to sort Data
- SQL Row Limiting Clause (Fetch First, Offset and With Ties)

Usage of Single-Row Functions to Customize Output

- Differences between single row and multiple row functions
- Manipulate strings with character function in the SELECT and WHERE clauses?
- Manipulate numbers with the ROUND, TRUNC, and MOD functions
- Perform arithmetic with date data
- Manipulate dates with the DATE functions

Invoke Conversion Functions and Conditional Expressions

- Describe implicit and explicit data type conversion
- Use the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
- Nest multiple functions
- Apply the NVL, NULLIF, and COALESCE functions to data
- Use conditional IF THEN ELSE logic in a SELECT statement

Aggregate Data Using the Group Functions

- Use the aggregation functions to produce meaningful reports
- Divide the retrieved data in groups by using the GROUP BY clause
- Exclude groups of data by using the HAVING clause

Display Data From Multiple Tables Using Joins

- Write SELECT statements to access data from more than one table?
- View data that does not meet join condition by using outer joins
- Join a table to itself by using a self-join

Use Sub-queries to Solve Queries

- Describe the types of problem that sub-queries can solve
- Define sub-queries
- List the types of sub-queries
- Write single-row and multiple-row sub-queries
- Co-related Subquery

The SET Operators

- Describe the SET operators
- UNION and UNION ALL to Combine Result of Multiple Queries
- Use of INTERSECT
- Use of MINUS
- Control the order of rows returned

Data Manipulation Statements

- Describe each DML statement
- Insert rows into a table
- Change rows in a table by the UPDATE statement
- Delete rows from a table with the DELETE statement
- Save and discard changes with the COMMIT and ROLLBACK statements
- Explain read consistency

Use of DDL Statements to Create and Manage Tables

- Create a simple table
- Alter and Truncate Table
- Drop Table and Concept of Recyclebin
- Stop Entry of Invalid Data Through CONSTRAINTS
- Primary Key , Foreign Key
- Not Null , Unique and Check Constraints

Other Schema Objects

- Create a simple and complex view
- Retrieve data from views
- Create, maintain, and use sequences
- Create and maintain indexes
- Create private and public synonyms

Load Data From External Source

- SQL Loader

Partners :



Java



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