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Java Spring & AWS
Sep 7, 2021 - Oct 8, 2021
Monday to Friday
9:30 AM ET - 4:30 PM ET

COURSE DETAILS

COURSE CONTENT

SESSIONS

FEATURES

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Java Spring AWS Micro services Tra... Syllabus

Day 1 to Day 6

DAY 1: Introduction and Language fundamentals

- o Introduction to Programming
- o Platform Independence in Java
  - Compiler and JVM
  - Interpreter and JIT Compiler
  - JVM Architecture
- o Structure of Java Program
- o Primitive Data Types
- o Java Decision making
  - if, If-else and if...else if...else Statement
  - Nested if Statement and Switch Statement
  - ? : Operator
- o Java – Loops and Transfer Statements
  - while and do while Loop
  - for and for each loop
  - Loop Control Statements
    - Break Statement
    - Continue Statement

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- Enhanced for loop in Java

o Operators

- The Arithmetic and Relational Operators
- The Bitwise and Logical Operators
- The Assignment Operators
- Precedence of Operators

o Casts and Conversions

- Widening and Narrowing

o The String Class

- Creating Strings
- Immutability of String Object
- String, String Buffer & String Builder Classes
- String Length and String Methods

o The import Statement

o Arrays

- Creating and Processing Arrays
- Copying Arrays and Arrays of Objects

o Live Examples

DAY 2: Object Oriented Programming: Object, Class, Abstra

Inheritance & Polymorphism

o Introduction to Object Oriented Programming

o Objects and Classes in Java

o Scope, Instance and Static variables and methods in .

- Local Variables
- Instance and static Variables
- Instance methods and Class/static methods

o Create and import Java Packages

o Object class Methods

o Constructors

- Default and Parameterized constructor
- The this Reference

o Inheritance

- extends Keyword
- The super and this keyword

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- IS-A and HAS-A Relationship
- The instance of Keyword
- Types of Inheritance and Multiple Inheritance
  - Interfaces
    - Declaring, Extending and Implementing Interf
    - Extending Multiple Interfaces
    - default and static methods in Interfaces
    - Functional Interfaces and Lambda Expression
  - Abstraction
    - Abstract Class and Abstract Methods
    - Inheriting the Abstract Class
  - Modifiers in Java
    - Access Modifiers
      - Default and Public
      - Private and protected
    - Non-Access Modifiers
      - The static , final and abstract Modifier
      - synchronized, transient and volatile M
  - Encapsulation
    - Benefits of Encapsulation
  - Polymorphism
    - Static and Dynamic Polymorphism
    - Rules for Method Overriding
  - Live Examples

DAY 3: Exceptions and Introduction to SQL

  - Exceptions
    - Exception Hierarchy
      - Built-in Exceptions
      - Exceptions Methods
    - Try block and Catching Exceptions
    - Multiple Catch Blocks
    - Catching Multiple Type of Exceptions
    - The Throws/Throw Keywords
    - The Finally Block

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- The try-with-resources
- User-defined Exceptions and Common Except
- Introduction and MySQL concepts
  - Why to use Database?
  - MySQL Installation
  - What is ER (Entity-relationship) – Modeling?

- Data types
- Keys in SQL
- Database Constraints
- Sub Languages in MySQL
  - Data Definition Language (DDL)
    - Create, Alter, Drop
  - Data Manipulation Language (DML)
    - Insert,Update,Delete
  - Data Query Language (DQL)
    - Select,Show,Help
  - Data Control Language (DCL)
  - Grant and Revoke
- Basic SQL
  - Conditional Statements
    - Where Clause with AND,OR,IN,NOTIN
  - Sorting
  - Orderby
    - Desc and Asc
  - Group By Clause
  - Having Clause
- Normalization
  - 1NF
  - 2NF
  - 3NF
  - BCNF
- Operators
  - Logical Operators
  - Comparison Operators

- Types of Table Relationships
  - One-to-one relationships
  - One-to-many relationships

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- Many-to-many relationships
    - o Joins
        - Inner
        - Outer Join
        - Left join
        - Right join
        - Cross Join
    - o Live Examples

DAY 4: Introduction to Collection Framework

- o Arrays and Collection framework
    - Collection Framework Hierarchy
    - List
        - Array List vs Linked List
    - Sorting using Arrays Class
    - Cursors
        - For each and Enumeration
        - Iterator and List Iterator
    - Vector
    - Set
        - Set vs List and importance of equals()
        - Hash Set, Linked Hash Set ,Sorted set
        - Comparable and Comparator interface
    - Generics and Sorting Collections
- o Live Examples on Collection Framework
- o Project

DAY 5: Advanced Collections in Java and JDBC

- o Maps
    - Hash Map, Linked Hash Map
    - Sorted Map and Tree Map
    - Hash table and Hash Function
    - Hash Map vs Hash table vs Hash

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- The Collections Class: sorting and searching
- Java Database Connectivity (JDBC)
  - The steps in implementing a JDBC application
  - The JDBC mechanism-Connecting to a DB
  - Types of statements, Result Sets etc.
  - Statement & Prepared Statement Examples
- Real-time Examples

DAY 6: Evaluation

- Written test on Java and SQL

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