

Core java

Basics of Java

Java - What, Where and Why?

History and Features of Java

Understanding Java run time system

Compiler

Jvm

Jre

Jdk

FirstProgram

Variable and Data Type

Naming Convention

conditional constructs

if

else

if else if

switch

loops

for

while

dowhile

foreach

Java Array

OOPS Concepts

Advantage of OOPs

Object and Class

Object Initialisation

Methods

Constructors

Method Overloading

static variable, method and block

Inheritance (IS-A)

Aggregation and Composition(HAS-A)

Method Overriding

Covariant Return Type

this keyword

super keyword

final keyword

Runtime Polymorphism

static and Dynamic binding

Abstract class and Interface

Downcasting with instanceof operator

Package and Access Modifiers

Encapsulation

Object class

Object Cloning

String Handling

String : What and Why?

Immutable String

String Comparison
String Concatenation
Substring
Methods of String class
StringBuffer class
StringBuilder class
Creating Immutable class
toString method
StringTokenizer class

Exception Handling

Exception Handling : What and Why?
try and catch block
Multiple catch block
Nested try
finally block
throw keyword
Exception Propagation
throws keyword
Exception Handling with Method Overriding
Custom Exception

Nested Classes

Nested Class : What and Why?
Member Inner class
Anonymous Inner class
Local Inner class
static nested class
Nested Interface

Multithreading

Multithreading : What and Why?
Life Cycle of a Thread
Creating Thread
Thread Scheduler
Sleeping a thread
Joining a thread
Thread Priority
Daemon Thread
Thread Pooling
Thread Group
ShutdownHook
Performing multiple task by multiple thread
Garbage Collection
Runnable class

Synchronization

Synchronization : What and Why?
synchronized method
synchronized block
static synchronization

Deadlock
Inter-thread Communication
Interrupting Thread

Input and output

FileOutputStream & FileInputStream
BufferedOutputStream & BufferedInputStream
FileWriter & FileReader

Serialization

Serialization & Deserialization
Serialization with IS-A and Has-A
transient keyword

Swing

Basics of Swing
JButton class
JRadioButton class
JTextArea class
JComboBox class
JTable class
JColorChooser class
JProgressBar class
JSlider class
LayoutManagers
BorderLayout
GridLayout
FlowLayout
BoxLayout
CardLayout

Collection

Collection Framework
ArrayList class
LinkedList class
ListIterator interface
HashSet class
LinkedHashSet class
TreeSet class
PriorityQueue class
ArrayDeque class
Map interface
HashMap class
LinkedHashMap class
TreeMap class
Hashtable class
Comparable and Comparator
Properties class

JDBC

JDBC Drivers
Steps to connect to the database
Connectivity with Oracle
Connectivity with MySQL
Connectivity with Access without DSN
DriverManager
Connection interface
Statement interface
ResultSet interface
PreparedStatement
ResultSetMetaData
DatabaseMetaData
Storing image
Retrieving image
Storing file
Retrieving file
Stored procedures and functions
Transaction Management
Batch Processing

Java New Features

Assertion
For-each loop
Varargs
Static Import
Autoboxing and Unboxing
Enum Type
Annotation

Advanced java

Advanced Java
HTML, CSS & Javascript Overview:
HTML Basics
HTML Elements
Introduction to MVC
MVC Architecture
Advantages of MVC
Building pages with MVC
What is a web application?
Servlets:
What is a Servlet?
Advantages of Servlet
Servlet Class
Servlet Lifecycle
ServletConfig interface
ServletContext Interface
Session management
Session Tracking Techniques
Cookies
Hidden field
URL Rewriting
HTTPSession
Building the first Servlet
Deploying the Servlet

Servlet Examples
Project on servlets
JSP:
Introduction of JSP
JSP Architecture
JSP Processing
JSP Tag library

Core Tags
JSP Standard Tags
JSP Page Life Cycle
Creating the first Dynamic web page using JSP

Project on jsp

Html css javascript

basics html
HTML Tags and Attributes?
Unordered Lists
Ordered Lists
hyperlinks
forms
tables
css
styles
javascript
javascript functions
java script object

Spring

Introduction to Spring
Spring Platform Advantage
Spring Framework Modules

Spring Core
First Program in Spring Core
Spring CFramework Architecture
Steps to use Spring Framework in applications
Understanding IOC and Dependency Injection
Spring bean Wiring
Dependency Injection
Dependency Injection through setter method
Dependency Injection through constructor
Understanding the bean life-cycle
Auto wiring and bean scopes
Annotation-based dependency injection

Spring MVC
Create Spring MVC Project
FrontController Design Pattern
Creating Views in Spring MVC
Spring MVC Form Handling

SPring Expression Language

SpEL Examples
Operators in SpEL
variable in SpEL

Spring Orm
Introducing data access with Spring – JDBC through spring
Transactions in a Spring environment
Getting started with Hibernate in a Spring environment
Data Access Object (DAO)

AOP
Adding behavior to an application using aspects – AOP
Creating and applying aspects

SpringSecurity
authentication
authorization
plugin security for specific urls

Spring Boot
Spring Boot and RestAPI
Spring Boot and Spring Data
Enabling Swagger2 in Spring boot

Hibernate

Introduction to SQL
creating tables
constrains
where clause
operators
Retrieving Data
Updating Data
Inserting Data
Deleting Data

What is the problem with JDBC - paradigm mismatch
What is ORM?
Understanding different components of Hibernate
How to persist objects using Hibernate
How to use mapping files, configuration files and SessionFactory object
Instance states
How to generate ID
Transactions in Hibernate
Querying with HQL (Hibernate Query Language)
How to implement Inheritance in Hibernate
Working with relationship between entities
Named and native queries
Working with Criteria Interface
Query by example -
Caching and fetching

1: Introduction to Hibernate

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

2: Hibernate Configuration

- Required JAR Files
- Hibernate configuration File
- Dialects

3: Hibernate Concepts

- Id and Primary Key mapping
- Id Generation Methods
- SessionFactory
- Session
- Transaction
- Developing CRUD Application

4: Hibernate O-R Mapping

- Mapping Declarations
- Modeling Composition with Relationship
- Modeling Composition with Components
- One-to-One Association
- One-to-Many Association
- Many-to-Many Association
- Uni and Bidirectional Associations
- Hibernate Value Types
- Custom Types

5: Manipulating and Querying

- Persistent Objects
- Object Loading
- Executing Queries
- Iterating Results
- Scalar Results
- Bind Parameters
- Pagination

6: Hibernate Query Language

- Select clause
- From clause
- Where clause
- Aggregate functions
- Expressions
- Sorting
- Grouping
- Sub queries

7: Criteria Queries

- Creating Criteria
- Narrowing the Result
- Ordering the Result

8: Native SQL

- Using SQL Query
- Named SQL Query
- Using Stored Procedure for Querying
- Creating Custom SQL for CRUD