

# **CORE JAVA**

## **1) Introduction to java**

- What is java
- History of Java
- Features of Java
- Hello Java Program Internal
- Command Line Arg
- How to set path?
- JDK, JRE and JVM
- Internal Details of JVM
- Variable and Data Type

## **2) Control Statements**

- Java If-else
- Java Switch
- Java For Loop
- Java While Loop
- Java Do While Loop
- Java Break
- Java Continue

## **3) Java OOPs Concepts**

- Java OOPs Concepts
- Naming Convention
- Package
- Object and Class
- Constructor
- Access Modifiers
- Object class
- Object Cloning
- static keyword
- final keyword
- super keyword
- this keyword
- Garbage Collection
- Inheritance(IS-A)
- Aggregation(HAS-A)
- Method Overloading

- Method Overriding
- Runtime Polymorphism
- Dynamic and Compile time Binding
- instance of operator
- Abstract class
- Interface
- Abstract vs Interface
- Wrapper Class
- Java Array

#### 4) **Java String**

- What is string
- Immutable String
- String Comparison
- String Concatenation
- Substring
- Methods of String class
- StringBuffer class
- StringBuilder class
- String vs StringBuffer
- StringBuffer vs Builder
- Creating Immutable class
- toString method
- StringTokenizer class

#### 5) **Java Regex**

- Java Regex API
- Patter class
- Matcher class

## 6) **MException Handling**

- What is Exception
- try and catch block
- Multiple catch block
- Nested try
- finally block
- throw keyword
- Exception Propagation
- throws keyword
- Throw vs Throws
- Exception Handling with Method Overriding
- Custom Exception

## 7) **Java Inner Class**

- What is inner class
- Nested Interface
- Member Inner class
- Anonymous Inner class
- Local Inner class
- Static inner class

## 8) **Java Multithreading**

- Life Cycle of a Thread
- Creating Thread
- Thread Scheduler
- Sleeping a thread
- Start a thread twice
- Calling run() method
- Joining a thread
- Naming a thread
- Thread Priority
- Daemon Thread
- Thread Pool
- Synchronization
- Deadlock

## 9) Java Collections

- Java ArrayList
- Vector
- Java LinkedList
- ArrayList vs LinkedList
- Java List Interface
- Java Set Interface
- Java HashSet
- Java LinkedHashSet
- Java TreeSet
- Java Map Interface
- Java HashMap
- Java LinkedHashMap
- Java TreeMap
- Java Hashtable
- HashMap vs Hashtable
- Collections class
- Sorting Collections
- Comparable interface
- Comparator interface
- Comparable vs Comparator
- Generics

## 10) **Java JDBC**

- JDBC Introduction
- JDBC Driver
- DB Connectivity Steps
- Connectivity with MySQL
- DriverManager
- ConnectionStatement
- ResultSet
- PreparedStatement
- CallableStatement
- Transaction Management
- Batch Processing

## 11) **Java I/O and NIO**

- File Output Stream
- File Input Stream
- Buffered Output Stream
- Buffered Input Stream
- Data Output Stream
- Data Input Stream
- Console
- File Writer File Reader
- Java Filter output Stream
- Java Filter Input Stream
- Buffered Writer
- Buffered Reader
- String Writer
- String Reader

## 12) **Date and Time Apis**

- New java 8 date and time api

## 13) Implementation of JVM

## 14) Object class methods and Object Cloning (Deep copy And shallow copy)