



Java Programming Index

Introduction to Java

- What is Java?
- History of Java
- Feature of Java
- C++ vs Java
- How to set Path
- JDK, JRE & JVM
- Writing First Program in Java
- Parameters used in First Java Program
- How many ways can we write a Java program
- Valid java main method signature

Input and Output in Java

- Output in Java (print() and println())
- Input in Java (Scanner, Reader & Writer)
- Escape Sequences in Java

Variables and Data Types

- Variables in Java
- Type Casting in Java
- Primitive & Non Primitive Types
- Unicode System
- Java Keywords & Use

Operators

1. Unary Operator,
2. Arithmetic Operator,
3. Shift Operator,



4. Relational Operator,
5. Bitwise Operator,
6. Logical Operator,
7. Ternary Operator and
8. Assignment Operator.

Control Statements

- if statement
- if-else statement
- if-else-if ladder
- Nested if statement
- Switch Statement

Loops in Java

- For Loop
 - Simple For Loop
 - For-each or Enhanced For Loop
 - Labeled For Loop
- While Loop
- Do-while Loop
- Nested Loops
- Break
- Continue
- Comments in Java
 - Single Line Comment
 - Multi Line Comment
 - Documentation Comment



String

- Strings in Java
- String Comparison
- String Concatenation
- Substring
- Method of String Class
- StringBuffer Class
- StringBuilder Class

Regex

- MatchResult interface
- Matcher class
- Pattern class
- PatternSyntaxException class

Array

- Single Dimensional Array
- Multidimensional Array
- Anonymous array
- Jagged Array

OOPs Implementation

- Java OOPs Concepts
- Naming Convention
- Objects & Class
- Method
 - Static Method
 - Instance Method
 - Accessor Method



- Mutator method
 - Abstract Method
 - Factory method
- Constructors
 - Default constructor (no-arg constructor)
 - Parameterized constructor
- Constructor Overloading
- Difference between Constructor and Method
- Static Keyword
- This Keyword

Inheritance

- Inheritance (IS-A)
 - Single
 - Multilevel
 - Hierarchical.
- Inheritance (HAS-A)
 - Aggregation

Polymorphism

- Method Overloading
 - By changing No. of Arguments
 - By changing Data Type
- Method Overriding
 - Covariant Return Type
- Super Keyword
- Instance Initializer Block
- Final keyword
- Runtime Polymorphism
- Dynamic Binding
- Instanceof Operator



Java Abstraction

- Abstract Class
- Interface (Multiple Inheritance)
- Abstract vs Interface

Java Encapsulation

- Package
- Access Modifiers
- Encapsulation

OOPs Misc

- Object class
- Object Cloning
- Math Class
- Wrapper class*
- Java Recursion
- Call By Value
- strictfp Keyword
- Javadoc Tool
- Object vs Class
- Overloading & Overriding

Exception Handling

- What is Exception
- What is Exception Handling
- Type of Java Exception
 - Checked Exception
 - Unchecked Exception
 - Error



- Java Try-Catch Block
- Java Multiple Catch Block
- Java Nested Try
- Java Finally Block
- Java Throw Keyword
- Java Exception Propagation
- Java Throws Keyword
- Java Throw vs Throws
- Java Final vs Finally vs Finalize
- Java Exception Handling with Method Overriding
- Java Custom Exceptions

Java Nested or Inner Class

- Non-static nested class (inner class)
 - Member inner class
 - Anonymous inner class
 - Local inner class
- Static nested class
- Nested Interface

MultiThreading

- What is MultiThreading?
- Life Cycle of a Thread
- Two ways to create a Thread
- How to perform multiple tasks by multiple threads
- Thread Scheduler
- Sleeping a thread
- Can we start a thread twice?
- What happens if we call the run() method instead of start() method?



- Joining a thread
- Naming a thread
- Priority of a thread
- Daemon Thread
- ShutdownHook
- Garbage collection
- Synchronization with synchronized method
- Synchronized block
- Static synchronization
- Deadlock
- Inter-thread communication

File Handling (I/O)

- FileOutputStream
- FileInputStream
- BufferedOutputStream
- BufferedInputStream
- SequenceInputStream
- SequenceOutputStream
- ByteArrayOutputStream
- ByteArrayInputStream
- DataOutputStream
- DataInputStream
- Java FilterOutputStream
- Java FilterInputStream
- Java ObjectStream
- Java ObjectStreamField
- Console
- FilePermission
- Writer



- Reader
- FileWriter
- FileReader
- BufferedWriter
- BufferedReader
- CharArrayReader
- CharArrayWriter
- PrintStream
- PrintWriter
- OutputStreamWriter
- InputStreamWriter
- PushbackInputStream
- PushbackReader
- StringWriter
- StringReader
- PipedWriter
- PipedReader
- FilterWriter
- FilterReader
- File
- FileDescriptor
- RandomAccessFile
- Java.util.Scanner

Java Serialization

- Java Serialization
- Java transient keyword



Swing

- Swing Introduction
- Executable Jar File
- Digital Watch
- Graphics in swing
- Displaying image
- Edit menu code for Notepad
- Java Swing App
 - Notepad
 - Calculator
 - Word counter
 - URL Source Finder
 - Folder Explorer
 - Puzzle Game
 - Pic Puzzle Game
 - Tic Tac Toe Game
- Layout Manager
 - BorderLayout
 - GridLayout
 - FlowLayout
 - BoxLayout
 - CardLayout
 - GridBagLayout
 - GroupLayout
 - SpringLayout
 - ScrollPanelLayout

Reflection

- Reflection API
- newInstance() method



- Understanding javap tool
- creating javap tool
- creating appletviewer tool
- Call private method from another class

Conversion

- What is conversion?

Collection Framework

- What is Collection in Java?
- Collection Framework
 - ArrayList class
 - LinkedList class
 - List interface
 - HashSet class
 - LinkedHashSet class
 - TreeSet class
 - PriorityQueue class
 - Map interface
 - HashMap class
 - LinkedHashMap class
 - TreeMap class
 - Hashtable class
 - Sorting
 - Comparable interface
 - Comparator interface
 - Properties class in Java
 - Java Vector
 - Java Stack



Date & Time API

- java.util.Date
- java.util.Calendar
- java.time.LocalDateTime
- java.time.LocalDate
- java.time.LocalDateTime

JDBC

- JDBC Introduction
- JDBC Drivers
- Steps to connect to the Database
- Connectivity with MySQL using JDBC
- Connectivity with Access without DSN
- DriverManager class
- Connection interface
- Statement interface
- PreparedStatement Interface
- ResultSetMetaData interface
- DatabaseMetaData interface
- CallableStatement
- Transaction Management using JDBC

Internationalization

- Internationalization & Localization
- ResourceBundle class
- I18N with Date
- I18N with Time
- I18N with Number
- I18N with Currency
- I18N with Measurements