

SYLLABUS OF JAVA

Basics of Java

- ✓ Java - What, Where and Why?
- ✓ Features of Java
- ✓ Internals of Java Program
- ✓ Difference between JDK, JRE and JVM
- ✓ Internal Details of JVM
- ✓ Variable and Data Type
- ✓ Unicode System
- ✓ Naming Convention

OOPS Concepts

- ✓ Advantage of OOPs
- ✓ Object and Class
- ✓ Method Overloading
- ✓ Constructor
- ✓ static variable, method and block
- ✓ this keyword
- ✓ Inheritance (IS-A)
- ✓ Aggregation and Composition(HAS-A)
- ✓ Method Overriding
- ✓ Covariant Return Type
- ✓ super keyword
- ✓ Instance Initializer block
- ✓ final keyword
- ✓ Polymorphism
- ✓ Abstract class and Interface
- ✓ Downcasting with instanceof operator
- ✓ Package and Access Modifiers
- ✓ Encapsulation
- ✓ Object class
- ✓ Object Cloning
- ✓ Java Array
- ✓ Call By Value and Call By Reference
- ✓ strictfp keyword
- ✓ Creating API Document

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
- ✓ ByteArrayOutputStream
- ✓ SequenceInputStream
- ✓ BufferedOutputStream & BufferedInputStream
- ✓ FileWriter & FileReader
- ✓ CharArrayWriter
- ✓ Input from keyboard by InputStreamReader
- ✓ Input from keyboard by Console
- ✓ Input from keyboard by Scanner
- ✓ PrintStream class
- ✓ PrintWriter class
- ✓ Compressing and Uncompressing File
- ✓ Reading and Writing data simultaneously
- ✓ DataInputStream and DataOutputStream
- ✓ StreamTokenizer class

Serialization

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

Networking

- ✓ Socket Programming
- ✓ URL class
- ✓ Displaying data of a web page
- ✓ InetAddress class
- ✓ DatagramSocket and DatagramPacket
- ✓ Two way communication

AWT and EventHandling

- ✓ AWT Controls
- ✓ Event Handling by 3 ways
- ✓ Event classes and Listener Interfaces

- ✓ Adapter classes
- ✓ Creating Games and Applications

Swing

- ✓ Basics of Swing
- ✓ JButton class
- ✓ JRadioButton class
- ✓ JTextArea class
- ✓ JComboBox class
- ✓ JTable class
- ✓ JColorChooser class
- ✓ JProgressBar class
- ✓ JSlider class
- ✓ Digital Watch
- ✓ Graphics in swing
- ✓ Displaying Image
- ✓ Edit Menu for Notepad
- ✓ Open Dialog Box
- ✓ Creating Notepad
- ✓ Creating Games and applications

LayoutManagers

- ✓ BorderLayout
- ✓ GridLayout
- ✓ FlowLayout
- ✓ BoxLayout
- ✓ CardLayout

Applet

- ✓ Life Cycle of Applet
- ✓ Graphics in Applet
- ✓ Displaying image in Applet
- ✓ Animation in Applet
- ✓ EventHandling in Applet
- ✓ JApplet class
- ✓ Painting in Applet
- ✓ Digital Clock in Applet
- ✓ Analog Clock in Applet
- ✓ Parameter in Applet
- ✓ Applet Communication
- ✓ Creating Games

Reflection API

- ✓ Reflection API
- ✓ newInstance() & Determining the class object

- ✓ javap tool
- ✓ creating javap tool
- ✓ creating appletviewer
- ✓ Accessing private method from outside the class

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
- ✓ JDBC New Features
- ✓ Mini Project

Java New Features

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

Internationalization

- ✓ Internationalization
- ✓ ResourceBundle class
- ✓ I18N with Date
- ✓ I18N with Time
- ✓ I18N with Number
- ✓ I18N with Currency