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**JAVA COURSE
BROCHURE**

COURSE CONTENTS (Core JAVA)

Basics of Java

- ❖ Java - What, Where and Why?
- ❖ History and 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
- ❖ Runtime Polymorphism
- ❖ static and Dynamic binding
- ❖ 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

COURSE CONTENTS (Core JAVA)

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

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- ❖ 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

COURSE CONTENTS (Core JAVA)

- ❖ 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