Syllabus java

Course code – R10604

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 Conecpts

✔ 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
✔ Annonymous Inner class
✔ Local Inner class
✔ static nested class
✔ Nested Interface

Multithreading

✔ Multithreading : What and Why?
✔ Life Cycle of a Thread
✔ Creating Thread
✔ Thread Schedular
✔ 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