

Java Core & Advance [J2EE]

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 ,
- ✓ Aggregation and Composition,
- ✓ Method Overriding,
- ✓ Covariant Return Type,
- ✓ super keyword,
- ✓ Instance Initializer block,
- ✓ final keyword,
- ✓ Runtime Polymorphism,
- ✓ static and Dynamic binding,
- ✓ Abstract class and Interface,
- ✓ Down casting with instance of operator,
- ✓ Package and Access Modifiers,
- ✓ Encapsulation,
- ✓ Object class ,
- ✓ Object Cloning,
- ✓ Java Array,
- ✓ Call By Value and Call By Reference,
- ✓ Creating API Document,

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
- ✓ Performing multiple task by multiple thread
- ✓ Garbage Collection, Run able class.

Synchronization

- ✓ Synchronization: What and Why?
- ✓ synchronized method
- ✓ synchronized block
- ✓ static synchronization
- ✓ Deadlock
- ✓ Inter-thread Communication
- ✓ Interrupting Thread

Generic & Collection

- ✓ Collection definition
- ✓ Hierarchy of collections
- ✓ Collection interface
- ✓ Collection class
- ✓ List interface
- ✓ Various class under collection
- ✓ Bulletin methods of all the above class
- ✓ Using collection framework for sorting
- ✓ i) Comparable interface
- ✓ ii) Comparator interface
- ✓ Advantages of comparator over comparable
- ✓ Overriding hashCode() and equal()
- ✓ Wrapper class
- ✓ Byte, Short, Integer, Long float, Double
- ✓ Character Boolean
- ✓ Auto unboxing and boxing
- ✓ Programming examples on collections

Advance Java

Input and output

- ✓ FileOutputStream & FileInputStream
- ✓ ByteArrayOutputStream
- ✓ SequenceInputStream
- ✓ BufferedOutputStream & BufferedInputStream
- ✓ File Writer & File Reader
- ✓ CharArrayWriter
- ✓ Input from keyboard by InputStreamReader
- ✓ Input from keyboard by Console
- ✓ Input from keyboard by Scanner
- ✓ Print Stream class
- ✓ Print Writer class
- ✓ Compressing and Uncompressing File
- ✓ Reading and Writing data simultaneously
- ✓ DataInputStream and DataOutputStream
- ✓ Stream Tokenizer class

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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
- ✓ Datagram Socket and Datagram Packet
- ✓ Two-way communication

AWT and Event Handling

- ✓ AWT Controls,
- ✓ Event Handling by 3 ways,
- ✓ Event classes and Listener Interfaces,
- ✓ Adapter classes,
- ✓ Creating Games and Applications,

Swing

- ✓ Basics of Swing , J Button class ,
- ✓ J Radio Button class , J Text Area class ,
- ✓ J Combo Box class , J Table class ,
- ✓ J Color Chooser class , J Progress Bar class ,
- ✓ J Slider class, Digital Watch,
- ✓ Graphics in swing , Displaying Image ,
- ✓ Edit Menu for Notepad, Open Dialog Box ,
- ✓ Creating Notepad ,
- ✓ Creating Games and applications,

Layout Managers

- ✓ Border Layout, Grid Layout,
- ✓ Flow Layout, Box Layout,
- ✓ Card Layout,

Applet

- ✓ Life Cycle of Applet, Graphics in Applet,
- ✓ Displaying image in Applet,
- ✓ Animation in Applet,
- ✓ Event Handling in Applet, J Applet class,
- ✓ Painting in Applet, Digital Clock in Applet,
- ✓ Analog Clock in Applet, Parameter in Applet,
- ✓ Applet Communication, Creating Games,

Web Scripting

- ✓ HTML
- ✓ Java Script, JQuery
- ✓ AJAX, JSON

JDBC

- ✓ JDB basics
- ✓ Steps for working with database
- ✓ Drivers and types
- ✓ SQL queries and execution
- ✓ Insert, Select, Delete, Update query
- ✓ Statements and prepared statement
- ✓ ResultSet
- ✓ DatabaseMetaData
- ✓ ResultSetMetaData
- ✓ Transaction and batch update
- ✓ Basic of servlets, Servlet API

SERVLETS

- ✓ Basic of servlets, Servlet api
- ✓ Generic servlets, HTTP servlets
- ✓ Servlets life cycle
- ✓ Init(), service(), destroy(), doGet(), doPost()
- ✓ Steps to create servlets in Tom cat
- ✓ Constant web/ static web
- ✓ Dynamic web
- ✓ Servlet config and context
- ✓ Session handling chaining Filtering and collaboration
- ✓ Request dispatcher
- ✓ Cookies, Send Redirect
- ✓ Login and registration example
- ✓ Programming examples on servlet

JSP

- ✓ Basics of JSP development
- ✓ JSP life cycle & architecture
- ✓ Action tags
- ✓ Comment, Declaration, Declarative and Scriptlet tag
- ✓ Page and include directive
- ✓ Jspinit() jspDestroy()

Java Mail API, Generating SMS Alert, Control Hardware Using Java Communication API