

Core Java Overview:

UNIT:1

- Installing Java SDK and setting CLASSPATH AND PATH variables
- Introduction to programming environment – Eclipse IDE
- Shortcuts
- Java Perspective
- Debug Perspective
- Project and Directory structures
- How to use Help
- Running your first java program in Java and Debug perspectives

UNIT:2

- Java Language Features
- Java Types
- Java Operators
- Classification of Java keywords
- Java Statements classification
- Control structures
- Understanding Java file structure
- Understanding Java class structure

UNIT: 3

OOPS Part 1

- Writing Java classes – defining variables, methods and constructors
- UML representation of Java classes
- Comprehensive understanding of main method – why main is static?
- Object Oriented Programming with Java
- Different ways of creating objects
- Introduction to mutating members and their significance
- Object VS Class relationship
- Introduction to JVM architecture and memory management in Java

UNIT: 4

OOPS Part 2

- Introduction to Overloading and implementation in Java
- Overloading and static modifier
- Introduction to Constructor overloading
- Constructors and static modifier
- Java modifiers
- Java Inheritance support and need for inheritance in programming
- Abstract classes in Java

UNIT: 5

OOPS Part 3

- Overriding importance and need for overriding
- Overriding and static modifier
- Overloading VS Overriding
- OOAD principles

- Introduction to Java Interfaces
- Static VS Dynamic Polymorphism – with real time scenarios
- Polymorphism how is it realized in Java
- Introduction to Java packages

UNIT: 6

- Introduction to java.lang package
- Object
- Class
- Runtime
- Math
- String, StringBuffer and StringBuilder
- Wrapper classes
- Design patterns

UNIT: 7

- Exception Handling – Best practices
- VM trace
- Debugging
- Logging

UNIT: 8

- Multithreading
- Using java. lang. Thread for creating threads.
- Using java. lang. Runnable for creating Threads
- Java.lang. Thread VS Runnable Threads
- Threads classification
- Life cycle
- Mutex and Semaphores – avoiding deadlocks

UNIT: 9

- Java IO
- Byte Streams
- Character streams
- Buffered Streams and Design patterns
- Serialization and Externalization

UNIT: 10

- Introduction to java.util package
- Date and Calendar classes
- Properties class
- System class
- Logging support in Java
- Scanners, Formatters and Console
- Enumerators in Java
- Collections framework - List, Set, Map implementations
- Java Generics and Type safe operations.