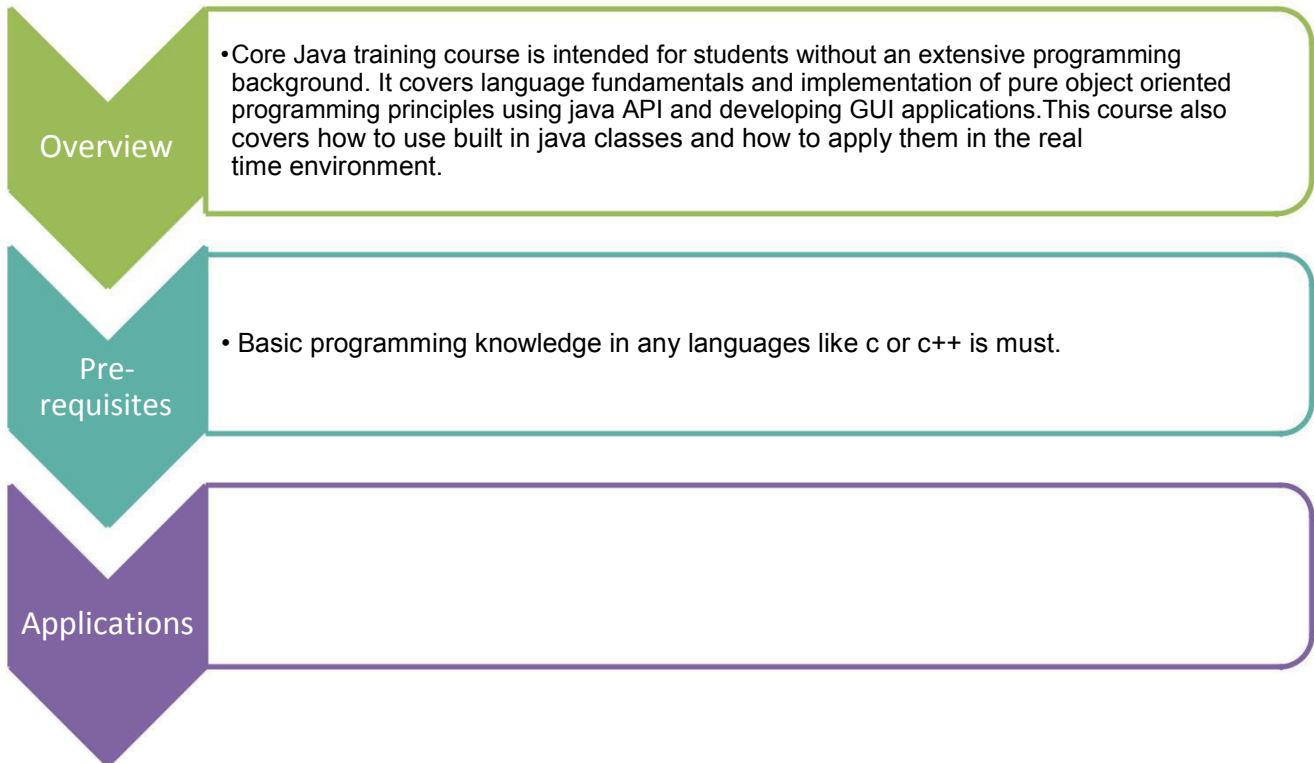


Course Brochure



COURSE CONTENTS

CORE JAVA

Introduction

- ❖ Programming language Types and Paradigms.
- ❖ Why Java?
- ❖ Flavors of Java.
- ❖ Java Designing Goal.
- ❖ Role of Java Programmer in Industry.
- ❖ Java History
- ❖ Features of Java Language.
- ❖ JVM The heart of JAVA.

Language Fundamentals

- ❖ **The Java Environment.**
 - Installation
 - Java Program Development
 - Java Source File Structure
 - Compilation & Executions
- ❖ **Basic Language Elements**
 - Java Tokens, Identifiers
 - Keywords, Literals, Comments
 - Primitive Data types
 - Type Casting
 - **Operators**
 - Flow Control Statements
 - **Arrays**
 - Command line Arguments
 - **Enum Type**
 - **Varargs**
 - **Assertion**

Object Oriented Programming

- ❖ OOPS Fundamentals.
- ❖ Class & Object
- ❖ Encapsulation
- ❖ Constructors
- ❖ Method Overloading, Recursion.
- ❖ Access Modifiers.
- ❖ Design of Accessor and Mutator Methods.
- ❖ Inheritance

- ❖ Polymorphism
- ❖ Abstract Class
- ❖ Interfaces
- ❖ Objects Cloning- shallow and deep cloning
- ❖ **Reflection API**

String Handling

- ❖ String
- ❖ StringBuffer
- ❖ StringBuilder
- ❖ String Tokenizer

Packages

- ❖ Organizing Classes and Interfaces in Packages
- ❖ Introduction to all pre-defined Packages
- ❖ User Defining Package
- ❖ CLASSPATH Setting for Packages
- ❖ Import and Static Import

Exception Handling

- ❖ Exceptions & Errors
- ❖ Control Flow In Exceptions
- ❖ Use of try, catch, finally, throw, throws in Exception Handling
- ❖ Predefined and User Defined Exceptions
- ❖ Checked and Un-Checked Exceptions

Inner Classes

- ❖ Introduction
- ❖ Member Inner Class
- ❖ Static Inner Class
- ❖ Local Inner Class
- ❖ Anonymous Inner Class

Multi Threading

- ❖ Understanding Threads
- ❖ Needs of Multi-threaded Programming
- ❖ Thread Life-Cycle
- ❖ Creating Child Threads
- ❖ Multiple Threads in a program

COURSE CONTENTS

- ❖ Thread Priorities
- ❖ Thread Synchronizing
- ❖ Wait(), notify() and notifyAll()
- ❖ Critical Factor in Thread DeadLock

Input/Output Operation in Java(java.io Package)

- ❖ Understanding Streams
 - ❖ The Classes for Input and Output
 - ❖ The Standard Streams
 - ❖ Working with File Object
 - ❖ Reading and Writing Files
 - ❖ Byte Streams
 - ❖ Character Streams
 - ❖ Serialization

Wrapper Classes

- ❖ Introduction
 - ❖ Byte, Short, Integer, Long
 - ❖ Float, Double
 - ❖ Character
 - ❖ Boolean
 - ❖ Autoboxing & Unboxing

GUI Programming- AWT & Swings

- ❖ Designing Graphical User Interfaces in Java
 - ❖ Components and Containers
 - ❖ Layout Managers
 - ❖ AWT Components
 - ❖ Event-Driven Programming in Java
 - ❖ Adapter Classes as Helper Classes in Event Handling
 - ❖ Anonymous Inner classes a Short cut to Event Handling
 - ❖ Adding A Menu to Window
 - ❖ Dialog Boxes
 - ❖ File Dialog Box

APPLETS

- ❖ Web Application Development
 - ❖ Applet Architecture

- ❖ Parameters to Applet
 - ❖ Embedding Applets in Web page
 - ❖ Applet Security Policies

Utility Classes & Collections Framework

- ❖ Date & Time
 - ❖ Utility Methods for Arrays
 - ❖ StringTokenizer
 - ❖ Timer and Timer Task for Job Scheduling
 - ❖ Using Scanner
 - ❖ Introduction to Collection Framework
 - ❖ List interface & its classes
 - ❖ Set interface & its classes
 - ❖ Map interface & its classes
 - ❖ Data structures
 - ❖ Observable and Observer Objects
 - ❖ Regular Expression
 - ❖ Use of ArrayList & Vector
 - ❖ **Generics**

Annotations Networking in Java

- ❖ Networking Essentials
 - ❖ Java.net.InetAddress
 - ❖ Socket Programming
 - ❖ Datagrams
 - ❖ URL & URLConnection
 - ❖ Multicast Sockets

New Features of Java SE 7.x & 8.x:

ADV JAVA

Course Introduction

- ❖ Real-time Java Application Awareness
 - ❖ Technology Mapping with Adv Java Concepts
 - ❖ Database Applications
 - ❖ Web Applications
 - ❖ Recap of Core Java

COURSE CONTENTS

JDBC

- ❖ Introduction to JDBC
- ❖ JDBC Drivers & Architecture
- ❖ DriverManager, Connection, Statement, Resultset
- ❖ CRUD Operation using JDBC
- ❖ Prepared Statement & CallableStatement
- ❖ ResultSetMetaData & DatabaseMetadata
- ❖ Connecting to non-conventional Databases
- ❖ JDBC Driver Types
- ❖ Batch Updates
- ❖ Scrollable & Updatable Resultset
- ❖ Working with Rowsets
- ❖ Handling Binary Data(Operation on Image files)
- ❖ Type mapping & SQL3 Data types
- ❖ ParameterMetaData
- ❖ Transaction Management
- ❖ Connection Pooling
- ❖ JDBC 4.0 Features

Servlets

- ❖ Web Application Architecture
- ❖ Need of Server side Programming
- ❖ Comparison with CGI
- ❖ Http Protocol & Http Methods
- ❖ Introduction to Servlets
- ❖ Servlet Life Cycle
- ❖ Developing and Deploying Servlets
- ❖ Generic Servlets
- ❖ ServletConfig, ServletContext, ServletRequest, ServletResponse
- ❖ Exploring Deployment Descriptor(web.xml)
- ❖ Deploying Servlets in Apache Tomcat Server, Weblogic Server
- ❖ Database Operation Using Servlets
- ❖ HttpServlets
- ❖ Session Tracking & Management
- ❖ Transferring Request
- ❖ Accessing Web Context
- ❖ Passing INIT and CONTEXT Parameter
- ❖ Filter Servlets
- ❖ Servlet Chaining

❖ Servlet-Browser Communication

- ❖ Include & Forward Mechanism
- ❖ Internationalization using Servlets
- ❖ Event Listeners in Servlets
- ❖ ServletRequestWrapper
- ❖ ServletResponseWrapper
- ❖ Web Application Security

Java Beans

- ❖ Component Model Services
- ❖ Java Beans Properties
- ❖ Bean Persistence
- ❖ Introspection

Java Server Pages

- ❖ Basic JSP Architecture
- ❖ Life Cycle of JSP (Translation, compilation)
- ❖ JSP Tags and Expressions
- ❖ Comparison with Servlets & JSP
- ❖ Scripting Elements - Scriptlets, Declarations, Expressions
- ❖ Directive Elements. page, include & taglib
- ❖ XML Syntax for JSP elements
- ❖ Implicit elements & JSP elements
- ❖ JSP to Servlets & Servlets to JSP
- ❖ Java Beans in JSP
- ❖ JSP Session
- ❖ Custom Tags development in JSP
- ❖ Building war file & deployment
- ❖ JSTL
- ❖ MVC Architecture

Tools

ANT **Log4J**
MAVEN **jUNIT**

SERVERS

Tomcat
Weblogic

IDEs Using

Eclipse
NetBeans
MyEclipse

Database

Oracle
MySQL