**Java Training Program Syllabus**

# Introduction

# Why Java, Features of Java Language, JVM, Bytecode, Compilation with eclipse or netbeans.

# Object Oriented Programming-Class Fundamentals, Object & Object reference, Object oriented features

# Basic Language Elements-Lexical Tokens, Identifiers, Keywords, Literals, Comments ,Primitive Datatypes, Operators Assignments.

# Array & String-Defining an Array, Initializing & Accessing Array, Multi –Dimensional Array, Operation on String, Mutable & Immutable String, Using Collection Bases Loop for String, Tokenizing a String, Creating Strings using StringBuffer .

# Extending Classes and Inheritance

Use and Benefits of Inheritance in OOP, Types of Inheritance in Java, Inheriting Data members and Methods , Role of Constructors in inheritance , Overriding Super Class Methods ,Use of “super”, Polymorphism in inheritance ,Type Compatibility and Conversion Implementing interfaces.

# Package

Organizing Classes and Interfaces in Packages , Package as Access Protection , Defining Package ,CLASSPATH Setting for Packages , Making JAR Files for Library Packages Import and Static Import Naming Convention For Packages.

# Exception Handling

The Idea behind Exception ,Exceptions & Errors ,Types of Exception ,Control Flow In Exceptions, JVM reaction to Exceptions ,Use of try, catch, finally, throw, throws in Exception Handling ,In-built and User Defined Exceptions, Checked and Un-Checked Exceptions.

# Multithreading

Understanding Threads , Needs of Multi-Threaded Programming ,Thread Life-Cycle, Thread Priorities ,Synchronizing Threads, Inter Communication of Threads ,Critical Factor in Thread –DeadLock

# A Collection of Useful Classes

Utility Methods for Arrays ,Observable and Observer Objects , Date & Times ,Using Scanner Regular Expression, Input/Output Operation in Java(java.io Package),Streams and the new I/O Capabilities, Understanding Streams, The Classes for Input and Output, The Standard Streams, Working with File Object, File I/O Basics, Reading and Writing to Files, Buffer and Buffer Management, Read/Write Operations with File Channel, Serializing Objects .

# GUI Programming

Designing Graphical User Interfaces in Java, Components and Containers, Basics of Components, Using Containers, Layout Managers, AWT Components, Adding a Menu to Window, Extending GUI Features Using Swing Components, Java Utilities (java.util Package) The Collection Framework : Collections of Objects , Collection Types, Sets , Sequence, Map, Understanding Hashing, Use of ArrayList & Vector.

# Event Handling- Event-Driven Programming in Java, Event- Handling Process, Event- Handling Mechanism, The Delegation Model of Event Handling, Event Classes, Event Sources, Event Listeners, Adapter Classes as Helper Classes in Event Handling.

# JDBC Programming

# Interface application with database, Create connections, Database applications