# Java Programming basics and Web Services

# Prerequisite : Java language syntax like writing if ,for , switch and idea of OOP.

# Duration : 6 Days ( 8 hours per day)

(Covers theory sessions, hands on sessions, Quiz , Preassessment and Post Assessment)

Day 1

* Java Features, JVM,JRE.
* OOP with Java
* Data encapsulation and abstraction.
* Language constructors
* Static members and Static methods.
* Packages – usage
* Export java classes – jar facility
* Has a Relation
* Is a Relation – reusability using inheritance
* super() , this()
* Constructor chaining.
* Hands On

Day 2

* Object Class and its methods
* Equals() hashcode() toString() getClass() methods
* Method Overloading and Overriding
* Polymorphism concept
* Abstract classes and Interfaces.
* Instance of operator.
* final keyword.
* Robustness in java using Exception Handling .

Day 3

* Collection API
* List, Set and Map.
* Iterating through a collection.
* Collections and Generics Contd.
* Comparator and Comparable.
* Nested classes, Local inner classes, anonymous classes

Day 4

* Java IO.
* Serialization
* Multithreading in Java
* Concurrency , Race Condition
* Thread Safety
* Synchronization
* Multithread communication

Day 5

* Java 8 Features
* Working on Lambda expressions
* Functional Interfaces
* Stream API – Parallel Streams
* Database connectivity using JDBC and MYSQL
* Basic CRUD operations

Day 6

* Web Services Introduction
* Service Oriented Architecture
* SOAP Vs REST Based Web Services
* Creating REST Services using Maven and JERSEY plugin
* JAX-RS
* Testing HTTP methods
* REST Client POSTMAN
* Annotations like @POST,@PathParam,@Produces,@Consumes etc..
* REST API with Database operations using JDBC
* CRUD operations