



Lara Technologies

A Unique future creator in Java



Let us create world not Ad

**# 152, 13th Main Road, 1st cross,
BTM Layout, Nearby Udipi
garden signal, 1st Stage, Aicobo
Nagar, Bangalore - 560 029,
Ph: +91- 9972006654,**

**Website: www.laratechnology.com
Mail id : info@laratechnology.com**

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Core Java

Core Java Part 1

1. JDK
 Downloading, installation and hello world development.
2. PATH environment Variable
3. -d option of javac command.
4. -cp option of java command.
5. Key words, literals, identifiers and built-in classes.,
6. println and print
7. Local Variable Introduction
8. unary operators
 - increment(pre & post)
 - decrement(pre & post)
9. Condition a statements (if, else, switch)
10. Iterations (for, while and do-while loops)
11. Methods
12. Introduction of global variables
13. Introduction of SIB
14. Multiple classes
15. Introduction to object
16. Pass by reference
17. Constructors
18. Introduction of IIB
19. Encapsulation
20. Inheritance
21. Combination of Constructor, this(), super(), SIB, IIB, inheritance
22. Packages
23. Access levels
24. Abstract class
25. Interfaces
26. Combination of interfaces and abstract classes
27. Method overloading
28. Method overriding
29. Usage of super and this statements inside the methods
30. Casting

31. Polymorphism
32. Static members are not involving in the polymorphism.
33. final keyword
34. this key word.
35. CLASSPATH
36. javap, javadoc, jar commands.
37. Eclipse
38. Enhanced for loop
39. Var-args
40. Command line arguments
41. Scanner class

Core Java Part-2

- Creational Design patterns
- Enums
- Static imports
- Innerclasses
- Annotations.
- Wrapper classes

Exception Handling:

- ❖ Different types of abnormal conditions.
- ❖ Why do we require Exception handling
- ❖ try/ catch/ finally
- ❖ Deviations to finally block.
- ❖ Return statement inside try/catch/finally
- ❖ Errors and Exceptions
- ❖ Checked and Unchecked
- ❖ Explanation of Error types
 - StackOverflowError
 - OutOfMemoryError
 - NoClassDefinationFoundError
 - NoSuchMethodError etc...
- ❖ Explanation of UncheckedException types
 - ArithmeticException
 - NumberFormatException
 - NullPointerException
 - ArrayIndexOutOfBoundsException
 - ClassCastException etc...

- ❖ Explanation of CheckedException types
 - SQLException
 - ClassNotFoundException
 - IOException
 - FileNotFoundException
 - CloneNotSupportedException
 - ParseException
 - InterruptedException etc...
- ❖ Explanation of unreachable statements.
- ❖ throws keyword and its importance in unchecked.
- ❖ Rules of method overriding in case of throws.
- ❖ Order of catch blocks
- ❖ throw keyword and its usage
- ❖ Developing user defined exception class.
- ❖ Differentiate throws and throw.

Assertions

- ❖ Why do we require assertions.
- ❖ enabling and disabling the assert statements in execution wise, package wise and class wise.
- ❖ Types of assert statements.
- ❖ Usage of assert as an identifier in older versions of JDK
- ❖ In appropriate usage of assert statements
- ❖ Difference between throw and assert.
- ❖ Enable/Disable assert statements in Eclipse

Object Class

- ❖ toString()
- ❖ hashCode()
- ❖ equals()
- ❖ finalize()
- ❖ Garbage collector.
- ❖ clone()
 - Deep copy / Shallow copy
- ❖ getClass()
- ❖ java.lang.Class methods
 - getFields()
 - getDeclaredFields()
 - getMethods()

- GetDeclaredMethods()
- ❖ Reflection API

Multi Threading.

- ❖ Multi Tasking
- ❖ Multi Processing.
- ❖ Multi threading.
- ❖ Types of Threads (user and daemon)
- ❖ Thread with Runnable Interface
- ❖ Thread with Thread class
- ❖ Developing threads with inner classes.
- ❖ Default properties of threads.
- ❖ Finding current thread.
- ❖ Thread unique id.
- ❖ Thread name
- ❖ Thread priority.
- ❖ Thread daemon status.
- ❖ Threads join.
- ❖ Thread sleep.
- ❖ Thread interruptions.
- ❖ Synchronization
 - Synchronization methods
 - Synchronization blocks
- ❖ Dead Lock
- ❖ Inter Thread communication
 - wait()
 - notify()
 - notifyAll()
- ❖ Thread pool
- ❖ Thread group
- ❖ Thread life cycle
- ❖ Thread yield.
- ❖ Thread Locale
- ❖ Difference between Thread and Runnable.

Strings

- ❖ String class basic information.
- ❖ Some important methods of String class.
 - toString()

- hashCode()
- equals()
- length()
- + operator
- concat()
- trim()
- charAt()
- indexOf()
- lastIndexOf()
- substring()
- split()
- toUpperCase()
- toLowerCase()
- equalsIgnoreCase()
- startsWith()
- endsWith()
- replace()
- replaceAll()
- "==" operator
- size()
- Differentiate equals and == operator etc..
- ❖ Explanation String memorymanagement
- ❖ StringBuffer class
 - Mutability
 - Capacity
 - Buffer
 - Thread safeness.
 - Extra methods like append(), reverse(), delete(), etc
- ❖ Differentiate String class and StringBuffer class
- ❖ StringBuilder class
- ❖ Differentiate StringBuffer andStringBuilder.
- ❖ Formatters
 - Flags, width, precision, conversion chars.
- ❖ Regular Expression
 - Patterns, Matcher
 - \d, \d+, \s, \w and so on
- ❖ StringTokenizer.
- ❖ Date, Calendar
- ❖ NumberFormat and DateFormatLocal.

Arrays:

- ❖ Declaration, Definition, Initialization
- ❖ One dimensional Array
- ❖ Multi dimensional Array
- ❖ Java.util.Arrays
- ❖ Comparable Interface
- ❖ Comparator Interface

Collection API:

- ❖ Limitations of arrays.
- ❖ Introduction to Collection API
- ❖ Introduction of Java.util package
- ❖ Different streams of collection API.

List stream

- ❖ List overview
- ❖ Important members from List stream
 - ArrayList
 - LinkedList
 - Vector
- ❖ How to read elements from Collection Object
 - Through Regular forloop
 - Through Enhanced forloop
 - Through toString().
 - Through Iterator
 - Through ListIterator
- ❖ Experimenting all basic operations of Collection objects
- ❖ Sorting List elements by using Comparable.
- ❖ Sorting List elements by Comparator.
- ❖ Experimenting Collections utility class.
- ❖ Developing our own Stack by using Linked List
- ❖ Developing our own Queue by using Linked List
- ❖ Developing our own ArrayList class
- ❖ Developing Stack and Queue without using Collection classes.
- ❖ Development of different types of LinkedList classes
 - Single
 - Double
 - Circular

- ❖ Difference between ArrayList and LinkedList
- ❖ Enumeration

Queue stream

- ❖ Queue overview
- ❖ PriorityQueue
- ❖ Usage of Comparator and Comparable in Queue stream.
- ❖ BlockingQueue.
- ❖ ArrayBlockingQueue
- ❖ DelayQueue
- ❖ BlockingDeque
- ❖ LinkedBlockingDeque

Set stream

- ❖ Set overview
- ❖ Set uniqueness
- ❖ Usage of hashCode() and equals() methods of Object class.
- ❖ Hash Bucketing.
- ❖ Important members of Set stream
 - HashSet
 - LinkedHashSet
 - TreeSet
 - NavigableSet
- ❖ Usage of Comparable and Comparator interfaces for TreeSet

Map stream

- ❖ Map overview.
- ❖ Important members of Map stream
 - HashMap
 - Hashtable
 - Properties
 - TreeMap
 - NavigableMap
 - LinkedHashMap
 - ConcurrentMap
- ❖ Usage of Comparable and Comparator interfaces for TreeMap.
- ❖ Developing our own ThreadLocal
- ❖ Developing Object Pool Design pattern
- ❖ Synchronization, developing our own synchronized collections.
- ❖ Fail fast and Fail Safe

- ❖ Concurrent package

Generics:

- Why Use Generics?
- Generic Types
- Raw Types
- Generic Methods
- Bounded Type Parameters
- Generic Methods and Bounded Type Parameters
- Generics, Inheritance, and Subtypes
- Type Inference
- Wildcards
- Upper Bounded Wildcards
- Unbounded Wildcards
- Lower Bounded Wildcards
- Wildcards and Subtyping
- Wildcard Capture and Helper Methods
- Guidelines for Wildcard Use
- Type Erasure
- Erasure of Generic Types
- Erasure of Generic Methods
- Effects of Type Erasure and Bridge Methods
- Non-Reifiable Types
- Restrictions on Generics

File handling

- ❖ File
- ❖ FileReader
- ❖ FileWriter
- ❖ BufferedReader
- ❖ BufferedWriter
- ❖ BufferedInputStream
- ❖ BufferedOutputStream
- ❖ Serialization
- ❖ Deserialization
- ❖ transient key word.
- ❖ Externalization
- ❖ DeExternalization
- ❖ Java.io.Console

- ❖ Customizing S.O.P
- ❖ PrintStream

JVM architecture

- ❖ Class loader subsystem.
- ❖ Runtime data area
 - Method area
 - Heap
 - Java stacks
 - PC registers
 - Native method stacks
- ❖ Execution engine.

Design Patterns

- ❖ Structural Design Patterns
- ❖ Behavioral Design Patterns

J2EE

SQL

- ❖ Downloading and installation of Oracle DataBase 11g Express Edition
- ❖ Downloading and installation of SQL developer
- ❖ Sql commands for table, sequence and procedures
 - DDL
 - DML
 - DQL
- ❖ SQL Functions
- ❖ SQL without Constraints
- ❖ SQL with Constraints
 - Not Null
 - Unique
 - Combination of not null and Unique
 - Primary key
 - Composite Key
 - Composite Unique Key
 - Composite Primary Key
 - Foreign Key
- ❖ Foreign key relationship
 - One to-one-relationship
 - One to-many-relationship / Many-to-one relationship
 - Many-To-Many relationship
- ❖ SQL JOINS
 - INNER-JOIN:

- LEFT-OUTER-JOIN
- RIGHT-OUTER-JOIN
- FULL-OUTER-JOIN

In one-to-one, one-to-many and many-to-many mappings

- ❖ Date, TimeStamp, RowId, RowNum

JDBC

- ❖ JDBC basics
- ❖ Explanation of Drivers
- ❖ Through Type 1 Driver and Type 4 Driver
 - DataBase connection with Statement Object
 - ResultSet
 - ResultSetMetadata
 - DataBase MetaData
 - Prepared Statement Object to DataBase connection
 - Stored Procedures and Callable Statement Object to DataBase connection
 - IN
 - OUT
 - IN OUT
 - Transaction Usage
- ❖ JDBC 2.0 features
 - ResultSets scrollability
 - ResultSet Updatability.
 - Batch Updates

- Storing and reading Image/audio/video file from the database
- ❖ JDBC 3.0 features
 - Retrieval of auto generated keys.
 - ParameterMetaData.
 - SavePoint
- ❖ JDBC 4.0 features
 - ROWID datatype
 - Auto loading of JDBC driver
 - SQLException enhancement.
- ❖ Interacting with Excel Sheet by using JDBC
- ❖ Interacting with Excel sheet by using POI API.
- ❖ Exploring different usages of Date and Timestamp data types

Hibernate

- ❖ Differences between JDBC and Hibernate
- ❖ Downloading Hibernate and setting up for development.
- ❖ POJO class Development, Hibernate configuration file development, Hibernate mapping file development
- ❖ Object Relational mapping introduction
- ❖ simple operations
 - save(), persist(), update(), delete(), saveOrUpdate(), get(), load(),
- ❖ Lazy loading and Eager loading
- ❖ Criteria API
 - Different methods in Restrictions,
 - Every where clause achievement.
 - Different ways of Criterion usage.
 - Index Parameters, Orders, Pagination,
- ❖ Query API
 - Through HQL
 - Through Native SQL
 - Through Named SQL where clause achievement. Index Parameters, Orders, Pagination,
- ❖ Different types of Generators (native, increment, sequence, assigned)
- ❖ Annotation Mapping
 - For all basic operations (save(), persist(), update(), delete(), saveOrUpdate(), get(), load())
 - For Generators
 - For Named Queries
- ❖ Component mapping (XML and Annotation Mapping)
- ❖ Composite Primary Key (XML and Annotation Mapping)
- ❖ Polymorphic mappings (XML and Annotation Mapping)
- ❖ Collection Mappings (XML and Annotation Mappings)
- ❖ Using Maven tool for Hibernate development.
- ❖ Association mappings and with XML and Annotation mappings

- One-to-one
- One-to-many
- Many-to-many
- ❖ Cache management
 - 1st level and 2nd level
- ❖ Multiple Configuration files connection
- ❖ Interacting with multiple Databases (Oracle and MySql)
- ❖ Programmatic Configuration
- ❖ Thread wise Session management. (getCurrentSession())
- ❖ Using Hibernate In Servlets/JSP application to develop CRUD
- ❖ Using Hibernate in Struts based application to develop CRUD
- ❖ Using Hibernate in Spring MVC based application to develop CRUD.

- ❖ Html tables
- ❖ Html lists
- ❖ Html blocks
- ❖ Html classes
- ❖ Html I frames
- ❖ Html file paths
- ❖ Html head
- ❖ Html layout
- ❖ Html forms
- ❖ Html form elements
- ❖ Html input types
- ❖ Html input attributes
- ❖ html Methods

HTML5

- ❖ Html5 intro
- ❖ Html5 elements
- ❖ Html5 semantics
- ❖ Html5 style guide
- ❖ Html5 validations & components

CSS

HTML

- ❖ Html introduction
- ❖ Html editors
- ❖ Html Basics
- ❖ Html elements
- ❖ Html Attributes
- ❖ Html Headings & paragraphs
- ❖ Html Styles
- ❖ Html Formatting
- ❖ Html comments
- ❖ Html colors
- ❖ Html CSS
- ❖ Html links
- ❖ Html images

- ❖ CSS Introduction
- ❖ CSS Syntax
- ❖ CSS Colors
- ❖ CSS Backgrounds
- ❖ CSS borders
- ❖ CSS margins
- ❖ CSS paddings
- ❖ CSS height/width
- ❖ CSS text
- ❖ CSS fonts
- ❖ CSS lists
- ❖ CSS tables
- ❖ CSS display
- ❖ CSS inline -block
- ❖ CSS align

- ❖ CSS dropdowns
- ❖ CSS forms

JavaScript

- ❖ Including JavaScript in a Web page
- ❖ Using the Document Object Model (DOM) to access the HTML elements on the page dynamically
- ❖ Using JavaScript objects effectively, including the window object
- ❖ Creating and using variables
- ❖ Using event handlers to handle user-triggered events
- ❖ Using regular expressions with string methods to perform basic validation
- ❖ Working with primitive data types
- ❖ Passing arguments to a function
- ❖ Using conditional constructs and loops
- ❖ Debugging JavaScript code

Ajax:

- ❖ What is AJAX?
- ❖ Why do we require AJAX?
- ❖ How do we use AJAX?

Servlets

- ❖ Installation of Tomcat server.
- ❖ Web application directory structure.
- ❖ Introduction to static and dynamic web applications.
- ❖ Different types of input to the servlet. (request, config and context)
- ❖ Servlets architecture and life cycle.
- ❖ RequestDispatcher and sendRedirect
- ❖ Session Management (Session tracking)
- ❖ Filters
- ❖ Listeners.
- ❖ Wrappers
- ❖ Headers
- ❖ Declarative Security
- ❖ Database interaction (Various ways).

JSP

- ❖ Need of JSP,
- ❖ Scripting elements (expressions, scriptlets, declarations) and directives.
- ❖ JSP architecture and life cycle
- ❖ JSP actions (forward, include, param, useBean, setProperty, getProperty)
- ❖ JSP Custom tags

Tag, IterationTag, BodyTag,
TagSupport, Nested Tags,
TagExtraInfo

- ❖ Expression Language (EL)
- ❖ JSTL
- ❖ Interacting with the database
- ❖ Web application design patterns (MVC, DAO, VO, BD, SL)
- ❖ Developing CRUD by using servlets, JSP and JDBC
- ❖ **OGNL (Object-Graph Navigation Language)**
 - The common tasks in a web application
 - Data transfer and type conversion
 - The built-in converters
 - How to build a custom type converter
- ❖ **How to validate data**
 - The validation framework
 - Using the built-in rules
 - Writing a custom validator
 - Writing the actions for validation

Spring

- ❖ Introduction
- ❖ Spring IOC
- ❖ Spring AOP
- ❖ Spring DAO
- ❖ Spring ORM
- ❖ Spring MVC
- ❖ Spring Security

- ❖ Spring EL
- ❖ CRUD development by using Spring MVC and ORM.

SoapBasedAndRESTFULL Webservice Tutorial

- ❖ Introduction
- ❖ Getting ready with software's
- ❖ SOAP UI Testing Tool
- ❖ Components of SOAP based Webservices
- ❖ Developing Webservices Provider
- ❖ Developing Webservice Consumer
- ❖ Components of SOAP based Webservice
- ❖ WSDL Explanation
- ❖ XML Explanation
- ❖ XSD Explanation
- ❖ SOAP
- ❖ JAXB API
- ❖ SDLC of web service
- ❖ REST FULL WEB SERVICE
 - Difference between SOAP AND REST
 - Getting start with RESTFULL WS
 - Developing REST FULL WS using JERSY FREAMWORK
 - Developing restfull webservice provider
 - Developing restfull webservice client

List of the companies visited to Lara from past one year.

- ❖ Professional Access
- ❖ Avekshaa
- ❖ Supainfotech
- ❖ Happiest Mind
- ❖ Surya Soft
- ❖ Analytics Quotient
- ❖ Revtech Solutions
- ❖ LendingKart Technologies
- ❖ Advent Systems
- ❖ Lean Infotech
- ❖ Key Falcon Solutions
- ❖ Dream Tekis Software Pvt. Ltd
- ❖ Amiti Software
- ❖ Azuga Software
- ❖ ModeFor Server
- ❖ Attocom
- ❖ Evolvus Solutions
- ❖ Mind Com Group
- ❖ Teminnova Technologies
- ❖ Boston Technology Corporations
- ❖ Huawei Technologies India Pvt Ltd
- ❖ USR Infotech
- ❖ Extensio Software
- ❖ SYMPHONY TELECA
- ❖ CRM IT Solutions Pvt.Ltd.
- ❖ MicrohardInfotech
- ❖ Mist Minds
- ❖ Cloud Jet Labs
- ❖ Aqualogic Tech Systems Pvt. Ltd.
- ❖ Capiot
- ❖ People World
- ❖ Sanchainfotech
- ❖ Techno Soft
- ❖ Sapta Labs
- ❖ Ample Software
- ❖ QualNimbus
- ❖ Endure Software Solutions
- ❖ Greytip Technologies
- ❖ Globus Soft
- ❖ Therefore India
- ❖ BetterPlace Safety Solutions Pvt. Ltd.
- ❖ Estuate Software Private Ltd
- ❖ Vuram Technologies
- ❖ Algofusion Technologies India Pvt. Ltd.
- ❖ Riflexions Consulting Pvt.Ltd.
- ❖ IHS
- ❖ Replicon
- ❖ Tree Technologies
- ❖ Thinking Hut IT Solutions

- ❖ **Selot Soft**
- ❖ **Prasanna Technologies**
- ❖ **Citus Tech**
- ❖ **CMS**
- ❖ **Brayons Soft Solutions (P).Ltd.**
- ❖ **IDC Technologies Solutons(I) Pvt. Ltd.**
- ❖ **Aspiring Wings Technologies Pvt. Ltd.**
- ❖ **Future Soft (India) Pvt. Ltd.**
- ❖ **Century Link**
- ❖ **Ibexi Solutions Pvt. Ltd.**
- ❖ **Manhattan Associates**
- ❖ **Atech Rays**
- ❖ **KNStek**
- ❖ **CGI**
- ❖ **IBell**
- ❖ **TurningPoint Software Solutions Pvt. Ltd.**
- ❖ **NTT Data**
- ❖ **Tetcos**
- ❖ **TransformEdge**
- ❖ **Software AG**
- ❖ **Fingertipplus**
- ❖ **Digital Harbor**
- ❖ **Vanward Technologies**
- ❖ **3i Technology Solutions Pvt.Ltd**
- ❖ **Wifi Networks Pvt.Ltd.**
- ❖ **Zygnum**
- ❖ **Alchemy Solutions**
- ❖ **BSol Systems Pvt.Ltd.**
- ❖ **HireCraft Software Pvt. Ltd**
- ❖ **Trisys Software Technologies**
- ❖ **Diksha Technologies**
- ❖ **Izmo Ltd**
- ❖ **SPSS South Asia**
- ❖ **SrishtiESDM Pvt Ltd company**
- ❖ **Tataatsu IdeaLabs**
- ❖ **Startsavings**
- ❖ **BizRuntime**
- ❖ **Mastercom Technology**
- ❖ **Via.com**
- ❖ **Multifonds**
- ❖ **IOLITE TECHNOLOGIES**
- ❖ **ESCO**