Java Training by Manga Rao  
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Core, Advanced Java (J2SE and J2EE), Java Tools, Frameworks and Realtime Project  
Duration: 3 months

CORE JAVA

* What is Java?
* First Java Example
* Types of Java Applications
* History of Java
* Java Versions
* Java Features
* Translators
* Difference between compiler and interpreter
* Simple program of Java
* Download and Installation of java software
* Java environment setup
* Java Program compilation
* Java program execution
* Different ways to code a java program
* Difference between JDK, JRE, and JVM
* JVM Architecture
* Java programming with IDEs (Eclipse, My Eclipse, NetBeans)
* Data types
* Variables
* Keywords
* Identifiers
* Literals
* Operators
* Methods
* Comments
* Conditional Statements
* Control Structures
* Arrays
* Command line arguments
* OOPS concepts
* Abstraction
* Encapsulation
* Polymorphism
* Inheritance
* Object
* Class
* Instantiation
* Access of Object Data
* New Keyword
* Different ways to create object in Java
* Anonymous object
* Static Polymorphism (Method overloading)
* Constructors
* Constructor overloading
* static keyword (static variable, static method, static block)
* this keyword
* Inheritance Vs Aggregation
* Method overriding
* Covariant return type
* Super keyword
* Instance block
* Final keyword
* Runtime polymorphism (Method overriding)
* Abstract class
* Interfaces
* Marker Interface
* Difference between abstract classes and interfaces
* Packages
* Access Modifiers
* Public
* Protected
* Default
* private
* Singleton class
* Inner classes
* Wrapper classes
* Garbage collector
* Exception Handling
* try
* catch
* finally
* throw
* throws
* String Handling
* Input Output streams
* Serialization
* Externalization
* Multithreading
* Synchronization
* Collections
* Date API
* Enum
* Generics
* Reflection
* What is jar?
* How to create jar file from command prompt and various jar file commands related to jar
* How to create executable jar file from command prompt
* How to create jar file using Eclipse
* How to create executable jar file using Eclipse

Additional Concepts to be covered

* Java tips and tricks
* Java programs development using IDEs (Eclipse, My Eclipse, NetBeans)
* Eclipse tips and tricks
* Debugging java programs in IDEs
* Find bug - Code Review tool
* JUNIT - Unit testing tool

ADVANCED JAVA

JDBC

* JDBC Introduction
* JDBC Architecture
* JDBC API
* JDBC Driver
* Types of JDBC Drivers
* Steps to create a JDBC application
* Driver Manager Class
* Connection interface
* Statement interface
* Example to connect Java application with Oracle database
* Example to connect Java application with MySQL database
* Example to connect Java application with MS Access database
* ResultSet interface
* PreparedStatement interface
* ResultSetMetaData interface
* DatabaseMetaData interface
* Blob
* Example to store/retrieve image into/from database
* Clob
* Example to store/retrieve file into/from database
* CallableStatement
* Examples to call stored procedures and functions
* Transaction Management in JDBC
* Batch Processing in JDBC

Servlets

* Servlets Introduction
* About Web Application
* About CGI (Common Gateway Interface)
* Disadvantages of CGI
* Advantages of Servlets over CGI
* Benefits of Servlets
* HTTP
* HTTP Request Methods
* MIME
* Servlets API
* Servlets Life Cycles
* Servlets Life Cycle Methods
* Creation of Directory Structure
* Steps to create a Servlet
* Deployment Description File (web.xml)
* Create a simple Servlet Application
* War file creation and extraction
* Create a servlet application using IDEs (Eclipse, My Eclipse, NetBeans, etc...)
* Create a User defined servlet class in 3 ways
* welcome-file-list tag
* load-on-startup tag
* Servlet Request interface
* Request Dispatcher
  + forward method
  + include method
* SendReDirect method
* ServletConfig interface
* ServletContext interface
* Session tracking techniques
  + Cookies,
  + Hidden form fields,
  + url rewriting,
  + Http Session
* Servlet Filters
* Usage of Filters
* Advantages of Filters
* Filter API
* Simple example of Filter
* FilterConfig
* Filter Examples
* Servlet with Annotation
* SingleThreadModel interface

JSP

* JSP Introduction
* Advantages of JSP over Servlets
* Life cycle of JSP
* Life cycle methods of JSP
* Directory Structure of JSP
* JSP API
* creating a simple JSP
* Scripting Elements
* implicit objects
* JSP Directives (page, include, taglib)
* Exception Handling in JSP
* Action Tags
* EL (Expression Language)
* JSTL (JSP Standard Tag Library)

Web Application development from scratch

Java Tools:

* Log4j
* Maven
* JUNIT
* Find Bug
* SVN

Frameworks

* Hibernate
* Spring (Core, IOC, JDBC, ORM, MVC, Boot)

Web Services

* RESTful Web services

Detailed explanation of Realtime Project and Its role and responsibilities.

[**Which subjects in the Java language are useless to learn nowadays?**](https://www.quora.com/Which-subjects-in-the-Java-language-are-useless-to-learn-nowadays)

* Applets
* JSP
* RMI, both RMI JRMP and RMI IIOP
* EJB 1 and 2, BMP and CMP
* WebSphere, WebLogic and other application servers
* CORBA bindings to Java
* XML (ish)
* JAXB
* SOAP
* JAX-WS
* Java Web Start
* AWT
* SWING
* Ant builds
* WAR files (prefer embedded servers)
* Raw JDBC
* Pre-generic Collections
* Serialization (ish; except for mapper tools)
* Arrays (ugh. I mean, you have to, but. Ugh. Prefer collections)
* Raw Threads (prefer util.concurrent)
* Struts