

Java SE Programming (Core Java)

What Is Programming?

JCP, JSR, Java Editions

History of Java

JIT, JVM, JRE, JDK, Byte Code

CLASSPATH, JAR and Configurations

Compiling and Running FirstSample (HelloWord) (NotePade and NetBeans)

Java Code Convention

IDE (NetBeans **or** Eclipse)

Java Keywords, Operators

Data Types, Wrapper Classes, Boxing, Unboxing

Array & String (StringBuffer VS StringBuilder)

Condition (if, switch)

Loop (for, while, dowhile)

Overview of Object Oriented

Class & Method & Field

Object & Instance

Access & Static Modifier

Constructor

Initializer Block & Static Initializer Block

Java Memory Model (Heap, Stack, PermGen ...) & GC

Type Casting

Encapsulation (Accessor and Mutator Methods)

Polymorphism (Ad-Hoc, Subtyping, Parametric)

Inheritance

Abstract Class

Interface

Constants (final field, method, class)

Immutable Object

Mock Objects

Overview of UML

First n-Tier Application Design Example

Enumerated Types

Documenting (JavaDoc)
Packaging & Build JAR & Manifest
Override “Object” Methods
Object copy and Cloning in Java
Overview of Java Visual VM & JConsole
Exception (Checked & Unchecked & Handling)
Using a Debugger
Serialization
Second n-Tier Application Design Example
GUI (Swing & **Overview** of AWT & **Overview** of JavaFX)
Overview of Refactoring

Java SE Programming (Advanced)

I/O Streams and File Handling
Overview of Collection & Generics
Properties
Java Reflection
JSON processing Libs
Logging (log4j) and Log Levels
Data Validation Using Regular Expressions
XML Bindings, Marshaling and JAXB
Socket Programming (Network)
Overview of RMI
Multi-Thread & Synchronization
Installing a Database & SQL (MySQL)
JDBC (Java Database Connectivity)
Project (ATM **or** Registration **or** ...)
Introduce and **Overview** of Design Pattern
Overview of Agile methodologies (Scrum, Jira ...)

Java EE Development (Web Application)

IDE (Eclipse)

The Architecture of a Web Application

3-Tier

Apache Tomcat (**Overview** of AppServer)

Firefox and add-on Firebug

Ant & Maven

Overview of HTML & CSS

Java Visual VM - Heap - PermGen

Servlet (web.xml, Exception, Filtering & Cookies & ...)

Internationalization (i18N) and Localization

JSP (Scriptlet, Scope, ...)

Debug a Web App.

Overview of JavaScript

MVC

Overview of Web Service (WSDL, SOAP, SoapUI, PostMan)

Test Concepts - JUnitTest

DAO & DTO Pattern

ORM & Hibernate (XML, Annotation) & JPA

Overview of Spring Core & **Overview** of Spring MVC

Overview of AOP (Spring AOP)

Overview of Version Control (Subversion, Git, ...)