

Java training

S.No	Topic	Comm Day
1	Introduction to Java	1
2	Object Orientation	2
3	Inheritance, Overloading, Overriding	3
4	Abstract class, Interface, Inner classes	4
5	String, Exception handling, IO	5
6	Collections and Generics	6
7	Multithreading	7
8	Coding practice, GOF design patterns	8
9	RDBMS, SQL	9

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10	JDBC	10
11	Java 8 Introduction	11
12	Java 8 strem details	12
13	Java 8 Optional, concurrency, date time	13
14	HTML, Javascript	14
15	Servlet Basics	15
16	Session management, listerns, filter	16
17	JSP	17
18	Mini Application	18

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19	Tools, testing	19
20	Introduction to Hibernate	20
20	Hibernate Mapping, Inheritance, Hibernate Qaries	21
21	Hibernate performance ,Jooq	22
23	Spring Basics	23
24	Spring bean life cycle, AOP	24
25	Spring JDBC, Hibernate integration	25
26	Spring MVC	26
27	Spring MVC validation, exception handling	27
28	Web service & Spring REST	28
29	Spring Boot , Security& basics of Microservice	29-32
30	Advance Javascript, JQuery	33-34

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34	Nodejs, Express	35-36
35	Spring boot project work	37-40

Topics Details	
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Introduction to java, feature of java, eclipse basics

Java Archite-cture, JDK,JRE,Array, Loops, dry run, examples and practice

Class, Objects declaration, Methods, Constructors and Destructors(Garbage Collections - Memory management), Passing parameters to methods(By value & By reference), Polymorphism - Method Overloading, Constructor Overloading, static keywords, var args, static import.

The concept of inheritance, conversion and casting in case of objects, override a method in subclass, returns, super keyword, Method overriding(Dynamic method dispatch), final keyword

Abstract keyword, Definition, implementation of an interface, using interface, interface and multiple inheritance, interface to share constants, importance of setting standards, marker interface Types of inner classes: non-static inner classes, local and anonymous inner classes, solid principles introduction

Object class, String class, StringBuffer, StringBuilder, Wrapper classes, primitive wrapper classes, im
autoboxing, Math class, The concept of exception handling, try blocks, Exception class methods, th
rethrow , finally keyword, user-defined exceptions. Input/Output ; Serialization

Assessment & Review 1: Review Rajeev + Nilesh Kumar + Vir Bharat

Collections and Generics -- Collection framework, collection interfaces and classes
method for collection and iterators, classes implementing List interface Comparable
implementing Set interface, hashCode (), classes implementing Map interface, co
and arrays classes,, Queue interface, Date, SimpleDateFormat, Calendar, Loc
ResourceBundle, Properties etc (pending topics)

Multithreading, Introduction to Threads, creation for child threads, Thread methods, synchronization, inter-thread communication

Java coding conversions, coding practice, code refactoring, SOLID principle, Introduction to GOF design, some commonly used design pattern

Assessment & Review 2: Review Rajeev + Nilesh Kumar + Vir Bharat

RDBMS,SQL Statements - DDL, DML,,SQL Operators, Datatypes, Constraints, Functions (String, Numeric, Aggregate),Subqueries,Join

Introduction to JDBC,JDBC driver,JDBC API - Connection, DriverManager, Statement, PreparedStatement, ResultSet, SQL injection
CRUD Operations, DAO, DTO design pattern, Using property file, ResultSetMetaData

Java 8 enhancements,, functional interface,Lambda vs Annonymous inner class, Streams, Collectors

Steam processing, Good programming practice, best practice using streams, method reference, Case examples. Easy data Paeallelism, Default and static methods on interfaces

Optional data types, Enhanced Concurrency with Lambdas,Date & Time in Java 8

Assessment & Review 3: Review Rajeev + Nilesh Kumar + Vir Bharat

HTML (Overview,Basic Tags, tables, Formatting,Forms,new features of HTML5(video, audio, form ele
Java Script (Overview, syntax,variables,functions,events,Objects , Form Validation)

Introduction to J2EE, web server vs application server, Introduction to Servlet
Servlet Lifecycle - Generic Servlet and Http Servlet, ServletConfig ,ServletContext

Session Management, Cookies, HttpSession, URL rewiring, Filters, Listeners, ServletContextListner

Introduction to JSP,JSP Elements - Directive, Scripting,JSP Implicit Objects,JSTL and of EL

CRUD application: Bookstore application following MVC, DAO, DTO pattern, using fiter for security

Assessment & Review 4: Review Rajeev + Nilesh Kumar + Vir Bharat

Build tools: Ant, maven and gradle, basics of unit testing and mock testing, junit, mokito, GIT, Github

Why ORM? Hibernate Fundamentals, Hibernate vs Jdbc, Configuration and Hello world, CRUD applic

Hibernate Mapping:one to one, one to many, many to many etc, bidirectional, cascading,Hibernate HQ
quaries, N+1 problem and solution, Hibernate inheritance mapping and strategies

Hibernate Caching, performance, example and application, Introduction to jooq, jooq vs Hiberate, CRUD
application jooq

Assessment & Review 5: Review Rajeev + Nilesh Kumar + Vir Bharat

Introduction to Spring, Spring Architecture

Spring Core, Spring Context Modules – IOC, Configuration, example

Dependency Injection - Setter and Constructor Injection

Spring bean life cycle, aware interface, BeanFactory post processor, Introduction to AOP, pointcut, join
<aop:aspectj-autoproxy />, advices, example and application

Spring jdbc, template design pattern, how spring reduce boilerplat code,Integration spring hibernate, c
transaction management, CRUD application

Spring MVC configuration, Spring MVC Architecture, Controller, Handler Mapping, View Resolver, Spr
tags

Spring MVC Validation JSR 303, Custom validation, Spring Exception Handling and best programming

Basics of XML, JSON processing, Hello world SOAP web service, Implementation Spring REST, exce
handling, hateoas introduction, cross site scripting

Spring Project, Spring Starter Project Wizard, Spring Initializr,CRUD application spr
spring security, Spring test, Spring microservice, Spring Security configuration, Arc
url based security, method based security, spring mvc+hibernate+security
configuration, Spring REST API security

Assessment & Review 5: Review Rajeev + Nilesh Kumar + Vir Bharat

Jquery, Introduction, Selecting and Filtering, DOM, Handling Events, Content and Attributes

Arrays and Iterations, CSS, Ajax Features, Animations and Effects, callback, higher order function

ES6: var let , const,templet literal, arrow function,Typescript: Typescript datatypes, Variable decleration
typescript interface, modules

Nodejs: Nodejs architecture, how event loop works, Nodejs modules, npm, creating web server, nodejs tcp client/server application, file module, synchronous, asynchronously, debugging
Nodejs Express: Configuring routes, REST service with express, enable cors express js, introduction to
MEAN application using nodejs, express, mongo, mongoose

Banking application using spring MVC JSP, JQuery, Hibernate, REST, Security, error handling

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Date	Tenure Day	Hr
19th July 20th July	1/2+1/2	8Hr
21th July 22th July	1/2+1/2	8Hr
23rd July-24th july	1/2+1/2	8Hr
24 th July +26 th July	1/2+1/2	8Hr
27th july-28th july	1/2+1/2	8Hr
29th july -20 th july	1/2+1/2	8Hr
31 st July	01/02/21	8Hr
2nd-3rd Aug	1/2+1/2	8Hr
4rd Aug-5th Aug	1/2+1/2	8Hr

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6th Aug-7th Aug	1/2+1/2	8Hr
7th Aug-9th Aug	1/2+1/2	8Hr
10th Aug	1	4Hr
11 th Aug	1	8Hr
12 th Aug	1	8Hr
13 th Aug	1	8Hr
16 th Aug	1	8Hr
17 th Aug		8Hr
18 th Aug	1	8Hr

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19 th Aug	1	8Hr
19th Aug	1	8Hr
20th Aug	1	8Hr
23rd Aug	1	8Hr
24th Aug	1	8Hr
25th Aug	1	8Hr
26th Aug	1	8Hr
27th Aug	1	8Hr
30th Aug	1	8Hr
31th Aug	1	8Hr
1 st Sept-6th Sept	4	32Hr
7th Sept-8th setp	2	16Hr

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8 th Sept-9 th Sept	2	16Hr
10 th Sept-15 th Sept	4	32Hr
	40days	40X8=320Hr

feedback week1

Name	concepts	Intraction during session	Hands on

Feedback/Remark