LEARNOMATE TECHNOLOGIES

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Learnomate Technologies is the Information technology company which provide training on different IT Technologies.
Out of that **Java Devepoler** is the one of the fastest growing technology.

Welcome to the Java Developer Course Training! This course is designed to equip you with the skills and knowledge required to become a proficient Java developer. Whether you're a beginner looking to start your journey in programming or an experienced developer aiming to enhance your Java expertise, this course offers a comprehensive curriculum to meet your needs.

Java is one of the most widely used programming languages in the world, known for its portability, scalability, and versatility. It powers a vast range of applications, from mobile apps to large-scale enterprise systems. Learning Java opens doors to numerous career opportunities in various industries, including finance, healthcare, and technology.

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Core Java Curriculum

Topic	Subtopic
Introduction to Java	• Introduction to programming, • Java features, • The Java architecture, JDK, JRE & JVM • Keywords, identifiers & data types
Operators & expressions	• Types of operators in Java • Operator precedence & associativity • Concept of expression
Control Statements-Decision	• if... else syntax, nested if, ladder if • switch ... case syntax
Control Statements-Loop	• Requirements for loop • while syntax • do ... while syntax • for syntax
Control Statements-unusual	• using break & continue in loops • nested loops & other nested control structures

Topic	Subtopic
Arrays-numeric	• declaring array, using index • populating array • processing array • multi-dementional array
Arrays-character	• searching character • reversing character array
Classes & Objects	• existing Java classes-String • API documentation of String class • Creating user defined class • private and public members of class • adding getters, setters & constructors
Adding static members to class	• characteristics of static members • initialization blocks
Wrapper classes	• Purpose of wrapper classes in Java • Various wrapper classes in Java
Array of objects	• Creating array of objects & processing object array
Relationship between classes	• USES-A relationship, • IS-A relationship • HAS-A relationship

Topic	Subtopic
Inheritance	• Concept of inheritance • Syntax to create a subclass • Constructors and super keyword • protected access specifier usage
Overriding Object class methods	• Object as a cosmic super class in Java • overriding toString(), equals() & finalize()
Polymorphism	• Concept of polymorphism • binding • dynamic binding • overriding superclass method • up-casting & down casting • Abstract super class
Interfaces in Java	• Definition & meaning of an interface, • features of interfaces • existing interface - Comparable • diff. between abstract class & interfaces
Creating interfaces	• Syntax to create an interface • Inheriting one or more interfaces
Exception handling	• Meaning & concept of Exception • Exception class hierrarchy in Java • Exception handling mechanism • catching multiple exceptions
User defined Exceptions	• Creating an Userdefined exception • Declaring exceptions, creating exception object and throwing it

Topic	Subtopic
Multithreading introduction	• Process, Thread, timesharing, Thread lifecycle
Runnable interface	• Using Runnable interface • Thread priorities
Multithreaded Application	• Concept of Thread pool, deadlock, daemon thread etc.
Java 5 features	• enumes generics unboxing, autoboxing varags Annotations
Introduction to Collections framework	• Need for collections, • Java Collections interfaces hierarchy
List based collections	• Array List constructors & methods • LinkedList constructors & methods • Use of iterators and ListIterators • Comparison of list based collections
Set based collections	• HashSet constructors & methods • TreeSet constructors & methods • Comparison of set based collections
Map based collections	• HashMap constructors & methods • TreeMap constructors & methods • Comparison of map based collections

Topic	Subtopic
Introduction to IO Streams	• IO Stream class hierarchy in Java • File handling streams • layring of streams
Object sgtreams	• Serializable interface • Using Serializable to read and write Java objects
Java 8 features	• Functional interface • Lambda expressions • Method references • Static methods and concrete methods in Java
Lambda expression	• Creating functional interfaces
Stream API	• Generating streams • Terminal & Non-terminal operations • Processing streams

Advance Java Curriculum

Topic	Subtopic
Introduction to JDBC	• Introduction RDBMS-Creating table, Fetching rows, Updating rows • Calling stored procedure • Understanding JDBC API- Connection, Statement & Resultset interfaces
Querying using JDBC API	• Connecting to MySQL database • Fetching database rows - simple SELECT query, parameterized SELECT query • Updating rows using DML statements and executeUpdate() method • Calling a storered procedure in MySQL database
Using Metadata & Rowsets	• Concept of Rowset object • Types of Rowsets • Using rowset objects to fetch data
Introduction to ORM	• Hibernate and JPA • Hibernate Architecture and the persistence layer • Optional dependencies • Configuration using JPA XML, Configuration using Hibernate API
Entity class consideration	• Entity class inheritance • Identifier attributes • identifiers- Generated, Natural keys , Composite identifiers

Topic	Subtopic
Entity class consideration	• Associations: Many-to-one, One-to-one , Many-to-many • Collections Mappings - basic values and embeddable objects, • Collections mapped to SQL arrays, • Collections mapped to a separate table
Object/relational mapping	• Mapping entity inheritance hierarchies • Mapping entities to tables • Mapping associations to tables • Mapping to columns and basic attributes to columns
Object/relational mapping	• Mapping associations to foreign key columns • Mapping primary key joins between tables • Column lengths and adaptive column types
Interacting with the da	• Persistence Contexts • Creating a session • Managing transactions • Operations on the persistence context
Queries	• Queries considerations • HQL queries- selection queries, mutation queries • Criteria queries • Native SQL queries
Introduction to Java Spring Framework	• Concept of IoC container, DI, Advantages of IoC container • Container Overview, Bean Overview, Dependencies, Bean Scopes

Topic	Subtopic
Spring Core module	• Annotation-based Container Configuration • Classpath Scanning and Managed Components • Java-based Container Configuration
Spring Core module	• Spring bean lifecycle • Using constructor arguments • Using @Bean, @Qualifier annotations • using component scan
Spring Expression Language (SpEL)	• expression language functionality-Literal expressions, Accessing properties, • arrays, lists, and maps • Using operators, assignment, method invocation etc. • expression evaluation
Wiring Beans	• Associating a bean with another bean • Dependency Injection-constructor based, setter based • Dependency Resolution Process
Autowiring beans	• Reducing XML • using autowiring Autowiring modes • Limitations and Disadvantages of Autowiring • Excluding a Bean from Autowiring
Introduction to Spring DAO	• Spring DAO Support • Configuring DAO using Annotations • Interfaces for Spring JDBC

Topic	Subtopic
JDBC Database Access	• Using Spring JdbcTemplate, a SimpleJdbcInsert and SimpleJdbcCall approach Running Statements, • Running Queries, Updating the Database
ORM Data Access	• Introduction to ORM with Spring • General ORM Integration Considerations • Hibernate • JPA
Introduction to AOP	• Understanding AOP Concepts-Aspect, advice, pointcut, join point , Weaving etc. • Pointcut API in Spring, Advice API in Spring, The Advisor API in Spring
Introduction to Web Components	• What is servlet? Servlet API, Creation and deployment of servlet • What is JSP? Need for JSP, Introduction to JSP scriptlets
Adding JSPs to web application	• Creating page JSP Scripting elements & deploying JSP
Forwarding request & including response	• using forward() and include() methods of servlet • Forwarding and including web components
JSP Implicit objects	• Implicit objects-request, response, application, session, page, pageContext etc. • Understanding scopes in web application-page, session, application & PageContext

Topic	Subtopic
More about the JSP	• JSP page translation, JSP actions:useBean, setProperty, getProperty, forward, include
Spring Web MVC	• Introduction to MVC design pattern Using Dispather servlet, view resolvers Creating Annotated Controller class, Functional Endpoints, URI Links, Asynchronous Requests Web MVC configuration using XML, using Annotations
Introduction to Maven	• Introduction Maven repository Understanding pom.xml Maven phases
Maven based web project	• Maven standard project structure. Archetype for web application Creating Maven based web project
View Technologies	• Spring's JSP Tag Library Spring's form tag library
MVC Java configuration	• Creating REST API for CRUD operation
Spring Boot- simple web application	• Introduction to Spring boot Convention over configuration Advantages of using Spring Boot
Spring Boot- REST API	• Concept of RESTful API Steps in creating RESTful API using SpringBoot

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