



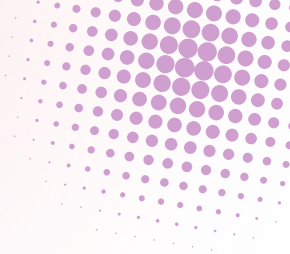
DataTeach.ai

JAVA FULL STACK

CURRICULUM

Online/Offline





JAVA FULL STACK

Syllabus

Java Basics & Introduction to Eclipse

- Post Install Configuration
- compiling and executing
- Variables and Arrays
- Create packaged classes
- Writing a simple program
- Data types
- Using Eclipse
- Eclipse shortcuts

Operators & Expressions

- Arithmetic Operators
- Boolean Operators
- Logical Operators
- Binary Operators

Control Statements

- Branching Statements
- Iterative Statements
- Break & Continue with enhancements
- While
- For
- Do..While
- Break and Continue Statement

Java Object-Oriented Programming

- Basics of OOPS
- Fundamentals of class & object
- new keyword
- Reference variables
- Member methods of a class
- Constructors
- Finalize method
- Overloading member methods
- Overloading constructors
- Passing and returning objects with methods
- Access Control
- Static Methods
- Static Variables
- Static Block
- Using final keyword
- Unit Testing using Junit-5

Inheritance

- Basics of Inheritance
- Members accessibility in inheritance
- Using super keyword

- The sequence of execution of constructors in inheritance
- Method Overriding
- Dynamic Method Dispatch, Abstract classes, Preventing overriding
- Preventing inheritance

Exception Handling

- Fundamentals of Exceptions
- Types of exceptions
- Using try and catch keywords
- Multiple catches, Nesting of try blocks, Using throw keyword
- Using throws keyword, Finally block
- Some predefined exceptions and their usage, User defined exceptions.

Interfaces

- Purpose of Interface
- Defining an interface
- Implementing interfaces
- Interface reference variables
- Interface with variables
- Extending interfaces

Multi Threaded programming

- Basics of threads
- Java threaded model
- Defining threads using Runnable interface
- Defining threads using Thread superclass
- Multiple threads
- Thread Priority values
- Thread Synchronization using synchronized methods
- Thread Synchronization using synchronized blocks

Predefined Libraries

- Using String class
- Using java.lang package
- Working with Date & Time
- Utility framework
- Collection framework
- I/O framework

RDBMS (MySQL)

- Introduction to Database & DBMS
- Data types
- Table, Record, Field
- SQL Queries,
- Database Normalization
- Joins, Sub Queries
- INSERT | UPDATE | DELETE Operations
- DDL Commands
- PL/Sql

Database Programming

- Overview of JDBC API
- Different types of JDBC Drivers
- JDBC URLs
- Driver Manager
- Establishing a connection with the database
- Creating and executing SQL Statements
- Working with Callable Statement

Server-side Programming with Servlets

- Deploying a simple servlet in a Servlet Container (Tomcat)
- Life cycle of a Servlet
- Servlet interface
- Servlet Request Interface
- Servlet Response Interface
- Additional capabilities of HTTPServlet, Session tracking
- Servlet Programming with JDBC CRUD Operations

Java Server Pages (JSPs)

- JSP Basics
- Differences between Servlets and JSPs
- Running a simple JSP
- The JSP generated Servlet code
- JSP Implicit Objects
- JSP Syntax for Different JSP Elements
- Developing JSP Beans



Syllabus

JPA-Hibernate (ORM Framework)

- Introduction to ORM, JPA
- SessionFactory, Session, Transaction
- Performing CRUD Operations with XML, Performing CRUD Operations with Annotations
- Different ID Generation Strategies
- Hibernate with Inheritance

Spring

- Bean Factory and application Context, Container Concepts
- Spring Data JPA Template, AOP, MVC

Spring Boot

- Introduction to STS, Di with STS, MVC, AOP, Security, Role-based Authentication, OAuth2, Token based authentication

Spring Web Services

- Introduction to Web Service
- Basics of REST APIS
- Spring REST

Microservices with Spring Boot, Spring Cloud

- Introduction to Micro Service architecture
- Advantages with Micro Service over Monolithic architecture
- Develop and Deploy Micro Service application in localhost
- Introduction to Service Discovery
- Client side Discovery pattern
- Server side Discovery pattern
- Load Balancing configuration

DevOps Tools

- Introduction to DevOps and advantages
- Git
- Maven
- Jenkins Docker Unit Testing with JUnit

Design Patterns

- Creational Design Patterns
- Behavioral Design Patterns

Front-End Development

- HTML
- CSS3
- Bootstrap-CSS
- JavaScript

KEY HIGHLIGHTS OF THE TRAINING



100+ hours of learning



Instructor-Led LIVE Sessions



Life-time LMS Access



LIVE Doubt Resolution



Topic-wise Assignments



Weekly Quizzes



Monthly Assessments



20+ Use Cases



Mock Interviews



Learners Community Access



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www.datateach.ai



+91 988 594 6789



www.datateach.ai



info@datateach.ai