

# Java Full stack Development Course Content

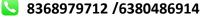
## Introduction

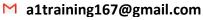
- 1. What is Front End Development
- 2. Front End Technologies
- 3. What is Back End Development
- 4. Backend Development Technologies
- 5. What is Full stack Development
- 6. Advantages of Full stack Development
- 7. Roles of Full stack Developer

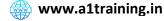
## **Module-1: Backend Development**

## **Core Java**

- 8.What is Programming Language?
- 9. Types of programming languages
- 10. Java Introduction
- 11. History of Java
- 12. Principles of Java
- 13. Java Installation
- 14. Java Program Execution Flow
- 15. JDK vs JRE
- 16. JVM Architecture

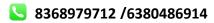




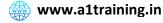




- 17. Identifiers & Keywords
- 18. Data Types
- 19. Variables
- 20. Methods
- 21. Arrays
- 22. Strings Handling
- 23. Object Oriented Principles
- 24. Constructors
- 25. Interfaces
- 26. Programs related to OOPs
- 27. Final classes
- 28. Abstract Class
- 29. Exception handling
- 30. Multi-Threading
- 31. Concurrency Package
- 32. Executor Framework
- 33. Synchronization
- 34. Lock mechanism
- 35. Serialization
- 36. Wrapper classes
- 37. Auto Boxing, Un-Boxing
- 38. Java Memory Management
- 39. Class Loader Implementation
- 40. Variable Arguments
- 41. File IO Operations
- 42. Introduction to Collection Framework



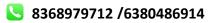
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- 43. List
- 44. Set
- 45. Map
- 46. Properties
- 47. Internal implementation of collection framework
- (List, Map, Set etc)
- 48. Java 8 Features Introduction
- 49. Lambda Expressions
- 50. Functional Interfaces
- 51. Default & Static Methods
- 52. Method References
- 53. Date and Time API changes
- 54. Stream API
- 55. Optional class
- 56. Spliterator Advanced Java
- 57. Introduction to Advanced Java
- 58. Introduction to Database nly Coding)
- 59. Types of databases
- 60. Database Environment Setup
- 61. DB Table Creation
- 62. Table Altering
- 63. CRUD Operations
- 64. Primary Keys
- 65. Foreign Keys
- 66. JDBC Introduction
- 67. JDBC API Details

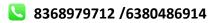


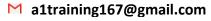
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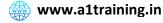




- 68. JDBC Architecture
- 69. JDBC Driver
- 70. Driver Manager
- 71. Connection
- 72. Statement
- 73. Prepared Statement
- 74. Callable Statement
- 75. Result Set
- 76. What is Dao Layer?
- 77. Steps to create JDBC Application
- 78. JDBC Applications Development
- 79. CRUD Operations
- 80. Connection Pooling
- 81. Most common exceptions in JDBC apps
- 82. Servlets
- 83. What is web application? nly Coding)
- 84. Web application architecture
- 85. Client & Server
- 86. Http Protocol
- 87. What is Servlet?
- 88. Servlet API
- 89. Servlet Life Cycle
- 90. Steps to create Servlet
- 91. Deployment Descriptor
- 92. Servlet interface



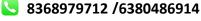


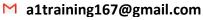


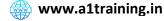


- 93. Generic Servlet class
- 94. HttpServlet class
- 95. HttpServletRequest
- 96. HttpServletResponse
- 97. ServletConfig
- 98. ServletContext
- 99. Init Params
- 100. Context Params
- 101. Forms development
- 102. Cookies
- 103. Hidden variables
- 104. Session Tracking in Servlets 105. JSP
- 106. Introduction to User interface
- 107. Introduction to JSP
- 108. Servlets vs. JSP
- 109. Life Cycle of JSP
- 110. JSP Implicit Objects (Only Coding)
- 111. JSP Directives
- 112. JSP Scripting Elements
- 113. MVC Architecture Introduction
- 114. Forms Development
- 115. Mini Projects Development

## **Module-2: Web Development**



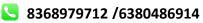




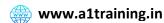


## **HTML**

- 1. Web Development Overview
- 2. HTML Introduction
- 3. HTML Document Structure
- 4. Headings
- 5. Paragraphs
- 6. Typography
- 7. HTML Links
- 8. Images in HTML
- 9. Attributes
- 10. Lists
- 11. HTML Tables
- 12. Forms & Inputs
- 13. Block & Inline elements
- 14. Divs
- 15. Spans
- 16. Classes & Ids
- 17. Iframes
- 18. HTML 5 Semantics CSS
- 19. CSS Introduction
- 20. Basic CSS Selectors
- 21. Dev Tools Introduction
- 22. Fonts
- 23. Colors
- 24. Backgrounds
- 25. Borders



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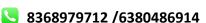




- 26. Box Model
- 27. Margin & Padding
- 28. Display, Alignment & Positioning
- 29. Pseudo Selectors
- 30. Responsive Layouts
- 31. Introduction to FlexBox
- 32. Building Responsive Website

## **BOOTSTRAP**

- 33. Bootstrap Introduction
- 34. Typography & Utility Classes
- 35. Buttons & Button Groups
- 36. NavBars & Navs
- 37. List Groups
- 38. Forms & Inputs
- 39. Input Groups
- 40. Tables
- 41. Pagination
- 42. Alerts
- 43. Spinners
- 44. Cards
- 45. Carousel Slider
- 46. Collapse
- 47. Accordion
- 48. Tooltips
- 49. Popovers



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Coding)



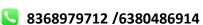


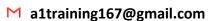


### 50. Models

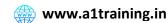
## **JAVA SCRIPT**

- 51. Introduction to Java Script
- 52. Script Tags
- 53. Console Output
- 54. Variables
- 55. Data Types
- 56. Strings & Strings Methods
- 57. Arrays
- 58. Java Script Objects
- **59. JSON**
- 60. Arrays
- 61. Loops
- 62. Array Helpers
- 63. Conditionals
- 64. Functions
- 65. Constructor Functions
- 66. ES6 Classes
- 67. Window Object & DOM
- 68. DOM Selection
- 69. DOM Manipulation
- 70. Events
- 71. Handling Forms





Coding)





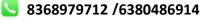
## **Front End Projects Development**

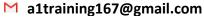
- 72. Building App with HTML & CSS
- 73. Building App with HTML, CSS & Bootstrap
- 74. Building App with HTML, CSS, Bootstap & Java Script
- 75. Resume Preparation for Frontend Development
- 76. Roles & Responsibilities of Frontend Developer
- 77. Front end Interview Questions & Answers
- 78. Interview Tips & Tricks

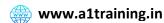
## **SPRING BOOT & MICRO SERVICES COURSE**

# CONTENT **SPRING BOOT**

- 1) What is Spring Framework
- 2) What is Spring Boot
- 3) Differences between Spring & Spring Boot
- 4) Spring Boot Overview
- 5) Pros & Cons of Spring Boot
- 6) Approaches to create Spring Boot Application
- a) Spring Initializer (start.spring.io)
- b) Spring Starter Wizard in STS IDE
- 7) Introduction to Spring Boot Starters
- a) Spring Boot Parent Starter
- b) Spring-boot-starter
- c) Spring-boot-starter-web



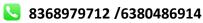


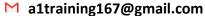


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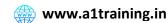


- d) Spring-boot-starter-webflux
- e) Spring-boot-starter-data-jpa
- f) Spring-boot-devtools
- g) Spring-boot-starter-mail
- h) Spring-boot-actuator
- i) Spring-boot-starter-test etc.
- 8) What is Start Class in Spring Boot
- 9) @SpringBootApplication annotation internals
- 10) SpringApplication.run(..) method internals
- 11) Spring Boot Application Boot strapping
- 12) AutoConfiguration in Spring Boot
- 13) IOC container
- 14) Dependency Injection a) Setter Injection
- b) Constructor Injection c) Field Injection
- 15) Stereotype Annotations
- a) @Component
- b) @Service
- c) @Repository
- d) @Controller
- 16) Base Package Naming convention
- 17) Component Scanning
- 18) Auto wiring
- a) byType
- b) byname





(Only Coding)

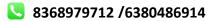




- c) constructor
- d) none
- 19) @Qualifier annotation
- 20) @Primary annotation
- 21) Introduction to @Configuration annotation
- 22) Details of @Bean annotation
- 23) Bean Life Cycle
- 24) Bean Scopes
- 25) Banner in Spring Boot
- 26) Standalone application development in Spring Boot
- 27) Standalone application with layered architecture
- 28) Runner in Spring Boot
- a) Application Runner
- b) Command Line Runner

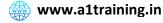
## SPRING DATA JPA

- 1) What is Persistence Layer
- 2) Best practises to follow in persistence layer
- 3) ORM Basics
- 4) Spring Data JPA Introduction
- 5) Differences between Spring ORM and Spring Data
- 6) CurdRepository introduction
- 7) CurdRepository methods for DB operations
- a) save() method
- b) saveAll() method



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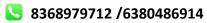
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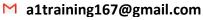


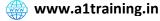
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- c) findById() method
- d) findAllById() method
- e) findAll() method
- f) deleteById() method
- g) deleteAllById() method
- h) delete() method i) count()
- j) existsById( )
- 8) Custom findByXXX method syntax
- 9) Custom Queries Execution in Data JPA
- 10) JpaRepository introduction
- 11) JpaRepository methods for DB operations
- 12) Pagination Using Data JPA methods
- 13) Sorting Using Data JPA Methods
- 14) Query by Example Executor
- 15) Generators
- 16) Custom Generators in Spring Data ding )
- 17) Embedded Database Introduction
- 18) Application Development using Embedded Database (H2)
- 19) Application Development Using MYSQL Database
- 20) Profiles in Spring Boot SPRING WEB MVC
- 21) Spring Web MVC Introduction
- 22) Spring Web MVC Advantages
- 23) Spring MVC Architecture
- 24) Introduction to Front Controller

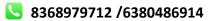




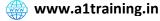




- 25) Controllers
- 26) Handler Mappers
- 27) View Resolvers
- 28) Web Application development using Spring Boot
- 29) Embedded HTTP Servers Introduction
- a) Embedded Tomcat Server
- b) Embedded Jetty Server
- 30) Making Jetty as Default server
- 31) Web Application Deployment in External Server
- 32) Sending Data From UI to Controller
- a) Query Param
- b) Path Param
- 33) Sending Data From Controller to UI
- a) Model
- b) ModelAndView
- (Only Coding)
- 34) @RequestBody annotation
- 35) @ResponseBody annotation
- 36) Form Based application development using Spring Boot
- 37) Thymeleaf Introduction
- 38) Web Application with Thymeleaf
- 39) Sending Email using Spring Boot
- 40) Exception Handling in Spring Boot Web Application



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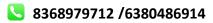
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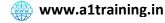
- 41) Spring Boot Actuators
- a) Health
- b) Info
- c) Heapdump
- d) Theaddump
- e) Beans
- f) Httptrace
- g) Mappings
- h) Shutdown etc

## **SPRING REST**

- 42) Distributed Applications
- 43) Distributed Technologies
- 44) SOAP vs REST
- 45) RESTful Services Introduction
- 46) REST principles
- 47) One Time operations
- 48) Run Time Operations
- a) Marshalling
- b) Un Marshalling
- 49) JAX-B Introduction
- 50) JAX-B Architecture
- 51) Applications development with JAX-B
- 52) JSON Introduction
- 53) XML vs JSON



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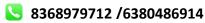


- 54) JACKSON API
- 55) Converting Java object to JSON and vice versa using Jackson API
- 56) GSON API
- 57) Converting Java Object to JSON and Vice Versa using GSON API
- 58) HTTP Protocol Details
- 59) HTTP Methods
- a) GET
- b) POST
- c) PUT
- d) DELETE

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- 60) HTTP Status Codes
- 61) @RestController
- 62) @RequestBody
- 63) @ResponseBody
- 64) @RequestParam
- 65) @PathVariable
- 66) MediaTypes
- 67) Consumes
- 68) Produces
- 69) Accept Header
- 70) Content-Type header
- 71) REST API Development using Spring Boot
- 72) POSTMAN



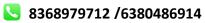
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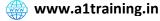
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- 73) SWAGGER & SWAGGER UI
- 74) Exception Handling in REST API
- 75) REST Security
- a) HTTP Basic Auth
- b) JWT
- c) OAuth2.0
- 76) Mono Objects
- 77) Flux Objects
- 78) REST Client Introduction
- 79) RestTemplate
- 80) WebClient
- 81) RestTemplate vs WebClient
- 82) Reactive Programming
- 83) Synchronous vs Asynchronous Calls
- 84) Apache Kafka with Spring Boot
- 85) Redis Cache Integration with Spring Boot MICRO SERVICES
- 86) Monolith Architecture Introduction
- 87) Monolith Architecture case study
- 88) Monolith Application Deployment Process
- 89) Load balancer (Cluster) case study
- 90) Load Balancing Algorithms
- a) Round Robin
- b) IP Hashing
- c) Sticky Session



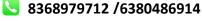
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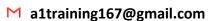


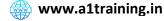




- 91) Monolith Architecture Drawbacks
- 92) Micro services Introduction
- 93) Micro Services Advantages
- 94) Micro Services Dis-Advantages
- 95) Micro Services case study
- 96) Identifying Micro services boundaries 97) Micro services Architecture
- 98) Micro services Development
- a) API 1
- b) API 2
- 99) Interservice communication case Study (FeignClient )
- 100) Cloud Introduction
- 101) AWS Account Creation
- 102) AWS Services Overview
- 103) Deploying Micro services to AWS ding )
- 104) Service Registry case study (Netflix Eureka)
- 105) API Gateway
- 106) Hystrix (Circuit Breaker)
- 107) Spring Boot Admin Server
- 108) Spring Boot Admin Client
- 109) Distributed Logging
- a) Sleuth Logging
- b) Zipkin Server





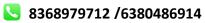




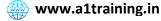
- 110) Ribbon case study (Micro services load balancer)
- 111) Implementing Ribbon in Micro services
- 112) ConfigServer Introduction & Implementation
- 113) Micro services Integration with Angular TOOLS
- 114) Maven
- 115) Log4J
- 116) Junit 5
- 117) Jenkins Deployment
- 118) Docker
- 119) POSTMAN
- 120) Swagger

# JAVA REAL-TIME PROJECT COURSES CONTENT INTRODUCTION (Only Coding)

- 1) Introduction to Real-time Project
- 2) Types of Software companies
- a) Product Based Companies
- b) Service Based Companies
- c) Outsourcing Companies
- 3) Interview process in software companies
- 4) Types of software jobs
- a) Permanent Job



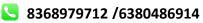
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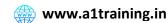
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- b) Contract Job
- 5) Types of software projects
- a) Scratch Development Projects
- b) Maintenance Projects
- c) Migration Projects
- 6) Types of teams in software project
- a) On-shore Team
- b) Off-shore Team
- 7) How to collaborate with team members
- 8) Discussion related to Bridge calls & Official emails
- 9) Role Chart Details REALTIME TOOLS
- 10) Maven
- 11) Gradle
- 12) Debugging
- 13) Project Lombok
- 14) GIT
- 15) BitBucket
- 16) Log4J
- 17) SLF4J
- 18) Putty & WinScp
- 19) Splunk
- **20) JUNIT**
- 21) Mocking

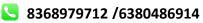


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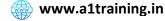


- 22) JaCoCoo
- 23) SonarQube
- 24) JIRA
- 25) Jenkins
- 26) Dockers
- 27) Kubernetes
- 28) JMETER
- 29) Apache Kafka
- 30) Redis Cache
- 31) POSTMAN MINI PROJECTS DEVELOPMENT
- 32) SDLC (Agile)
- I. Story
- **II. Story Points**
- III. Backlog grooming
- IV. Sprint Planning
- V. Sprint
- VI. Sprint Duration
- VII. Scrum
- VIII. Mid-iteration review
- IX. Retrospective
- 33) Real-time Environment Terminology
- 34) Requirements Gathering
- 35) Minutes of meeting
- 36) Query Log
- 37) DB Design



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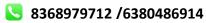
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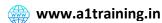




- 38) DB Template
- 39) Real-time Coding Standards
- 40) 01-Mini Project
- 41) 02- Mini Project
- 42) 03- Mini Project
- 43) Mini Projects Case study MICROSERVICES
- 44) Monolith Vs Microservices
- 45) Microservices Advantages
- 46) Microservices Architecture
- 47) Service Registry (Eureka)
- 48) API Gateway (Cloud Gateway)
- 49) Gateway Routing
- 50) Gateway Filters
- 51) FeginClient
- 52) Microservices Case Study MAJOR PROJECT
- **DEVELOPMENT**
- 53) Major Project Introduction Ly Coding)
- 54) Major Project Modules
- 55) Major Project Architecture
- 56) Major Project Functional Flow
- 57) Database Design
- 58) Story Creation in JIRA
- 59) Story Development
- 60) Logging in Project
- 61) Swagger Configuration
- 62) Actuators Configuration

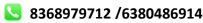


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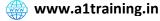


- 63) Exception Handling
- 64) Multi-Threading use case in Project
- 65) Rest Calls in Project
- 66) Batch Processing
- 67) Unit Testing
- 68) Integration Testing
- 69) Code Review
- 70) Project Deployment AWS (Cloud)
- 71) What is Cloud Computing
- 72) AWS Introduction
- 73) AWS Advantages
- 74) AWS Account Creation
- 75) AWS Services Walk through
- 76) Launching EC2 Machine (Linux)
- 77) Connecting to EC2 using Putty
- 78) Linux Commands
- 79) S3 Buckets
- 80) RDS (Relation Database System)
- 81) Deploying Spring boot app in AWS
- 82) Load Balancing
- 83) Auto Scaling
- 84) IAM User ANGULAR FRAMEWORK
- 85) Angular Introduction
- 86) Angular JS vs Angular
- 87) Angular Version History
- 88) Angular Environment Setup



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- 89) Angular Architecture
- 90) Angular App Development
- 91) Components
- 92) Templates
- 93) Directives & Pipes
- 94) Services
- 95) Forms Development
- 96) Form Validations
- 97) Routing
- 98) Http Client Module
- 99) Integration (Front End + Back End)
- 100) Spring Boot with Angular Integration
- 101) Angular App Deployment
- 102) Heroku Deployment INTERVIEW GUIDE
- 103) Resume Preparation
- 104) Profile Creation in job portals
- 105) Email Writing
- 106) HR Discussion details
- 107) Joining Formalities
- 108) First day and last day in office
- 109) Daily Activities in Job
- 110) Interview Tips & Tricks



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