

Java Full stack Development Course Content

Introduction

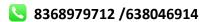
- 1. What is Front End Development
- 2. Front End Technologies
- 3. What is Back End Development
- 4. Backend Development Technologies
- 5. What is Full stack Development
- 6. Advantages of Full stack Development
- 7. Roles of Full stack Developer

Module-1: Backend Development

(Only Coding)

Core Java

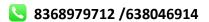
- 8. What is Programming Language?
- 9. Types of programming languages
- 10. Java Introduction
- **11.** History of Java
- 12. Principles of Java
- 13. Java Installation

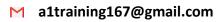






- 14. Java Program Execution Flow
- 15. JDK vs JRE
- 16. JVM Architecture
- 17. Identifiers & Keywords
- 18. Data Types
- 19. Variables
- 20. Methods
- 21. Arrays
- 22. Strings Handling
- 23. Object Oriented Principles
- 24. Constructors
- 25. Interfaces
- 26. Programs related to OOPs
- 27. Final classes
- 28. Abstract Class
- 29. Exception handling
- 30. Multi-Threading
- 31. Concurrency Package
- 32. Executor Framework
- 33. Synchronization
- 34. Lock mechanism
- 35. Serialization



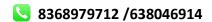


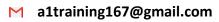
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- **36.** Wrapper classes
- **37.** Auto Boxing, Un-Boxing
- 38. Java Memory Management
- 39. Class Loader Implementation
- **40.** Variable Arguments
- **41.** File IO Operations
- 42. Introduction to Collection Framework
- **43.** List
- **44.** Set
- 45. Map
- 46. Properties
- 47. Internal implementation of collection framework (List, Map, Set etc)
- 48. Java 8 Features Introduction
- y Coding) 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



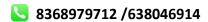


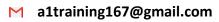




Advanced Java

- 57. Introduction to Advanced Java
- 58. Introduction to Database
- **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
- 68. JDBC Architecture
- 69. JDBC Driver
- 70. Driver Manager
- 71. Connection
- 72. Statement
- 73. Prepared Statement
- 74. Callable Statement
- 75. Result Set

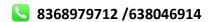


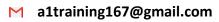






- **76.** What is Dao Layer?
- 77. Steps to create JDBC Application
- 78. JDBC Applications Development
- **79.** CRUD Operations
- 80. Connection Pooling
- 81. Most common exceptions in JDBC apps
- 82. Servlets
- 83. What is web application?
- 84. Web application architecture
- 85. Client & Server
- 86. Http Protocol
- 87. What is Servlet?
- 88. Servlet API
- 89. Servlet Life Cycle
- 90. Steps to create Servlet Coding)
- 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
- 111. JSP Directives
- 112. JSP Scripting Elements oding)
- 113. MVC Architecture Introduction
- 114. Forms Development
- 115. Mini Projects Development

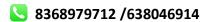


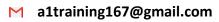


Module-2:Web Development

HTML

- 1. Web Development Overview
- 2. HTML Introduction
- 3. HTML Document Structure
- 4. Headings
- 5. Paragraphs
- 6. Typography
- 7. HTML Links
- Images in HTML
 Attributes
- **10.** Lists
- 11. HTML Tables
- 12. Forms & Inputs
- 13. Block & Inline elements
- **14.** Divs
- **15.** Spans
- 16. Classes & Ids
- 17. Iframes









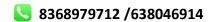
18. HTML 5 Semantics

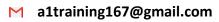
CSS

- 19. CSS Introduction
- 20. Basic CSS Selectors
- **21.** Dev Tools Introduction
- **22.** Fonts
- 23. Colors
- 24. Backgrounds
- 25. Borders
- 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





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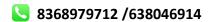




- 35. Buttons & Button Groups
- 36. NavBars & Navs
- 37. List Groups
- 38. Forms & Inputs
- 39. Input Groups
- 40. Tables
- 41. Pagination
- 42. Alerts
- 43. Spinners
- 44. Cards
- 45. Carousel Slider
- 46. Collapse
- 47. Accordion
- 48. Tooltips
- 49. Popovers
- 50. Models

JAVA SCRIPT

- 51. Introduction to Java Script
- **52.** Script Tags
- 53. Console Output



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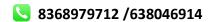


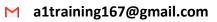


- 54. Variables
- **55.** Data Types
- 56. Strings & Strings Methods
- **57.** Arrays
- 58. Java Script Objects
- **59.** JSON
- 60. Arrays
- **61.** Loops
- **62.** Array Helpers
- 63. Conditionals
- **64.** Functions
- **65.** Constructor Functions
- 66. ES6 Classes
- 67. Window Object & DOM
- 68.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

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



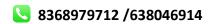




SPRING BOOT & MICRO SERVICES COURSE CONTENT

SPRING BOOT

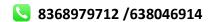
- 1) What is Spring Framework
- 2) What is Spring Boot
- 3) Differences between Spring & Spring Boot
- 4) Spring Boot Overview
- 5) Pros & Cons of Spring Boot
- 6) Approaches to create Spring Boot
 Application
 - a) Spring Initializer (start.spring.io)
 - b) Spring Starter Wizard in STS IDE
- 7) Introduction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

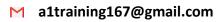






- g) Spring-boot-starter-mail
- h) Spring-boot-actuator
- i) Spring-boot-starter-test etc.
- 8) What is Start Class in Spring Boot
- **9)** @SpringBootApplication annotation internals
- 10) SpringApplication.run(..) method internals
- 11) Spring Boot Application Boot strapping
- 12) AutoConfiguration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



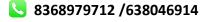


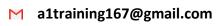




- a) byType
- **b)** byname
- c) constructor
- d) none
- 19) @Qualifier annotation
- 20) @Primary annotation
- **21)** Introduction to @Configuration annotation
- 22) Details of @Bean annotation
- 23) Bean Life Cycle
- 24) Bean Scopes
- 25) Banner in Spring Boot
- **26)** Standalone application development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

SPRING DATA JPA

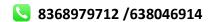








- 1) What is Persistence Layer
- 2) Best practises to follow in persistence layer
- 3) ORM Basics
- 4) Spring Data JPA Introduction
- 5) Differences between Spring ORM and Spring Data
- 6) CurdRepository introduction
- 7) CurdRepository methods for DB operations
 - a) save() method
 - b) saveAll() method
 - c) findByld() method
 - d) findAllById() method
 - e) findAll() method
 - f) deleteByld() method
 - g) deleteAllById() method ding)
 - 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



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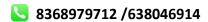


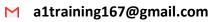


- 13) Sorting Using Data JPA Methods
- 14) Query By Example Executor
- 15) Generators
- 16) Custom Generators in Spring Data
- 17) Embedded Database Introduction
- **18)** Application Development using Embedded Database (H2)
- 19) Application Development Using MYSQL

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

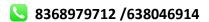








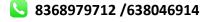
- b) Embedded Jetty Server
- 30) Making Jetty as Default server
- **31)** Web Application Deployment in External Server
- 32) Sending Data From UI to Controller
- a) Query Param
- b) Path Param
- 33) Sending Data From Controller to UI
- a) Model
- b) ModelAndView
- 34) @RequestBody annotation
- 35) @ResponseBody annotation
- 36) Form Based application development using Spring Boot
- 37) Thymeleaf Introduction Coding)
- 38) Web Application with Thymeleaf
- 39) Sending Email using Spring Boot
- **40)** Exception Handling in Spring Boot Web Application
- **41)** Spring Boot Actuators
- a) Health
- b) Info

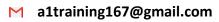






- c) Heapdump
- d) Theaddump
- e) Beans
- f) Httptrace
- g) Mappings
- h) Shutdown etc SPRING REST
- 42) Distributed Applications
- 43) Distributed Technologies
- 44) SOAP vs REST
- 45) RESTful Services Introduction
- 46) REST principles
- 47) One Time operations
- 48) Run Time Operations
 - a) Marshalling
 - b) Un Marshalling Only Coding)
- 49) JAX-B Introduction
- 50) JAX-B Architecture
- 51) Applications development with JAX-B
- 52) JSON Introduction
- 53) XML vs JSON
- **54)** JACKSON API
- 55) Converting Java object to JSON and vice







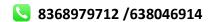


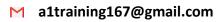
versa using Jackson API

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

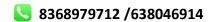








- 72) POSTMAN
- 73) SWAGGER & SWAGGER UI
- 74) Exception Handling in REST API
- 75) REST Security
 - a) HTTP Basic Auth
 - b) JWT
 - c) OAuth2.0
- 76) Mono Objects
- 77) Flux Objects
- 78) REST Client Introduction
- 79) RestTemplate
- 80) WebClient
- 81) RestTemplate vs WebClient
- 82) Reactive Programming
- 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

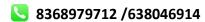


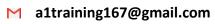
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- 90) Load Balancing Algorithms
 - a) Round Robin
 - b) IP Hashing
 - c) Sticky Session
- 91) Monolith Architecture Drawbacks
- 92) Micro services Introduction
- 93) Micro Services Advantages
- 94) Micro Services Dis-Advantages
- 95) Micro Services 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
- 104) Service Registry case study (Netflix Eureka)
- 105) API Gateway





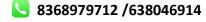




- 106) Hystrix (Circuit Breaker)
- 107) Spring Boot Admin Server
- 108) Spring Boot Admin Client
- **109)** Distributed Logging a) Sleuth Logging b) Zipkin Server
- **110)** Ribbon case study (Micro services load balancer)
- 111) Implementing Ribbon in Micro services
- 112) ConfigServer Introduction &

Implementation

- **113)** Micro services Integration with Angular TOOLS
- **114)** Maven
- **115)** Log4J
- **116)** Junit 5
- 117) Jenkins Deployment
- **118)** Docker
- **119) POSTMAN**
- 120) Swagger



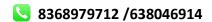
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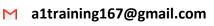


JAVA REAL-TIME PROJECT COURSE CONTENT

INTRODUCTION

- 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
- **b)** Contract Job
- 5) Types of software projects oding)
- 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





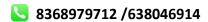


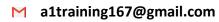


- 8) Discussion related to Bridge calls & Official emails
 - 9) Role Chart Details REALTIME TOOLS
- **10)** Maven
- 11) Gradle
- 12) Debugging
- 13) Project Lombok
- **14)** GIT
- 5) BitBucket
- 16) Log4J
- 17) SLF4J
- 18) Putty & WinScp
- **19)** Splunk **20)** JUNIT

Only Coding)

- 21) Mocking
- 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.

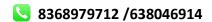
Scrum VIII. Mid-iteration review IX.

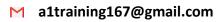
Retrospective

- 33) Real-time Environment Terminology
- 34) Requirements Gathering
- 35) Minutes of meeting
- 36) Query Log
- 37) DB Design
- 38) DB Template 39) Real-time Coding

Standards

- 40) 01-Mini Project (Only Coding)
- 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







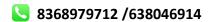


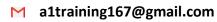
(Cloud Gateway)

- 49) Gateway Routing
- 50) Gateway Filters
- 51) FeginClient
- **52)** Microservices Case Study MAJOR PROJECT

DEVELOPMENT

- 53) Major Project Introduction
- 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 Coding or
- 62) Actuators Configuration
- 63) Exception Handling
- 64) Multi-Threading use case in Project
- 65) Rest Calls in Project
- 66) Batch Processing
- 67) Unit Testing
- **68)** Integration Testing

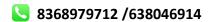








- 69) Code Review
- 70) Project Deployment AWS (Cloud)
- 71) What is Cloud Computing
- 72) AWS Introduction
- 73) AWS Advantages
- 74) AWS Account Creation
- 75) AWS Services Walk through
- 76) Launching EC2 Machine (Linux)
- 77) Connecting to EC2 using Putty
- 78) Linux Commands
- 79) S3 Buckets
- 80) 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
- 89) Angular Architecture
- 90) Angular App Development



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---(Only Coding)∎





- 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 (Only Coding)
- 106) HR Discussion details
- 107) Joining Formalities
- 108) First day and last day in office
- 109) Daily Activities in Job
- 110) Interview Tips & Trics

