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## Java Real-Time Project (Fullstack)

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Course Code : 26-JRTP

Class Timings : 7:30 AM to 9:00 AM (IST) (Mon-Sat)

Course Duration : 3 to 4 Months

Trainer : Mr. Ashok (11+ Yrs Exp, Tech Lead)

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### Pre-Requisites

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- 1) Core Java
- 2) Adv Java (JDBC & Servlets)
- 3) Database (SQL)
- 4) Web Development (HTML + CSS + Java Script + BS)
- 5) Spring Boot & Microservices (paralelly you can learn) - 9:30 am

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### Course Content

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Module-1 : Software Industry Info

Module-2 : Real-Time Tools (20+)

- Build Tools (Maven & Gradle)
- Logging Tools (Log4j, Logback)
- Testing Tools (JUnit, Mockito, Jacoco)
- Code Review Tools (SonarQube)
- Deployment Tools (Docker, K8S, Jenkins)
- Management (JIRA)
- Artifactory Tools (Nexus, JFrog)
- MessageQueues (ActiveMQ, Kafka)
- Cache (GemFire, Redis)
- Documentation (Swagger)
- API Testing (Postman)

Module-3 : Mini Projects (2)

- Requirements Analysis
- Query Log Preparation
- JAM sessions
- Effort Estimations
- DB Design (Data Modeling)
- Components Design
- Development
- Testing
- Debugging

Module-4 : Microservices

- Service Registry
- Admin Server
- Zipkin Server
- API Gateway

- Config Server
- FeignClient
- Circuit Breaker

#### Module-5 : AWS Cloud

- What is Cloud & Why ?
- EC2 (Virtual Machines)
- S3 (Storage)
- RDS (Relational DB)
- IAM (User Management)
- Lambdas (Serverless computing)
- EKS (Kubernetes cluster)
- Billing in AWS

#### Module-6 : Major Project (Health care / E-Comm)

#### Module-7 : Angular & Front end Development

#### Module-8 : Interview Guidance

- Self Introduction
- Roles & Responsibilities
- Project Architecture
- Resume Building
- Mock Interviews (skill assesement)
- Placement assistance

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#### Types of Software Companies

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##### 1) Product Based Companies

=> Develop projects and sell to customers

Ex: Google, Microsoft, Amazon, Facebook, Oracle, IBM....

=> Interview process will be difficult

- a) Coding Tests
- b) Data Structures
- c) Time Complexity
- d) Space Complexity
- e) Algorithms
- f) System Design

=> High packages will be available

Freshers => 15 to 20 LPA

##### 2) Service Based Companies

=> Develop projects based on client requirements

Ex: TCS, INFY, CTS, CapGemini, TechM, Wipro, HCL, Deloitte

=> Interview process will happen with latest technologies

- a) Coding Test
- b) Core Java
- c) Spring Boot
- d) Microservices
- e) Cloud
- f) Tools

## g) Project

- => Freshers salary => 3.6 LPA
- => Experienced Salary = exp \* 5/6 lakhs

## 3) Outsourcing Companies

- => These companies will provide employees to other companies
- => Select trained freshers from institutes for less pkg  
(2 to 3 LPA)
- => 2 to 3 months on job training (corporate culture)
- => Company will sell the candidate for good package

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Types of Software Projects

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- 1) Scratch development : Develop from starting (15%)
- 2) Support projects : Enhancements/Change Request/Bug fixing (75%)
- 3) Migration projects : Update from old technology to latest technology  
(10%)

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Types of Teams In project

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## 1) On Shore Team : (functional) Working from client location

- => Understand client business model
- => Understand client requirements
- => Discussion with client
- => Prepare BRD/SRS
- => Prepare FDD (snagit)
- => Take Client Approvals for development
- => Explain requirements to offshore

## 2) Off shore Team : Development + Testing + DevOps

- => Understand FDD
- => Participate in group discussions
- => Prepare Query Log
- => Join Bridge Calls (ms teams)
- => Project Design
- => Development
- => Testing
- => Deployment
- => Delivery
- => Support

B1 Visa ==> Business Visa (2 to 3 months)

L1 Visa ==> (Skilled) 2 years (You should work for same company)

H1 Visa ==> 3 years (work permit) => Lottery

F1 Visa ==> Student Visa

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What is Real-Time Project ?  
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- 1) Understanding Real-Time work culture
- 2) Improving Analysis skills
- 3) Improving Coding Skills
- 4) Understanding real-time usecases
- 5) Working with Tools in project
- 6) Understanding fullstack development
- 7) Understanding Project Delivery process
- 8) Understand project infrastructure

=> 20+ Real-Time Tools

=> Analysis skills

=> Coding skills

=> Fullstack development

=> Integrations

=> Unit Testing

=> Code Integration

=> Deployment process (jenkins + docker + k8s)

=> Cloud Computing (infrastructure)

=> Linux Commands

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Real-Time Tools  
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#### 1) Ant / Maven / Gradle

- Build Tools
- To automate project build process
  - Download libraries
  - Compile
  - Execute test cases
  - package our app

#### 2) SVN / Git Hub / BitBucket

- Source code repository servers
- Code Integration
- Monitored access

#### 3) SonarQube

- Code Review
- Static code analysis
- Identify developers mistakes
- Display code coverage

#### 4) Junit & Mocking

- Unit testing
- Isolated unit testing
- Mock framework(Mockito)

#### 5) Log4J / Logback / Logstash

- To implement logging
- To understand runtime behaviour of app
- To identify runtime exceptions root cause
- Log msgs will be stored in log files

#### 6) Putty / ELK / Splunk

- To monitor log msgs of application

#### 7) JMETER

- Performance Testing
- To check stability of the application
- To bottle necks

#### 8) JIRA

- Project Management
- Task Assignments
- Task reports
- Bug Reporting

#### 9) Docker

- Containerization platform
- Make app loosely coupled with env

#### 10) Kubernetes

- Orchestration platform
- Managing containers
- Load Balancing for containers

#### 11) Jenkins

- CI CD server
- To automate build & deployment process

#### 12) Nexus / JFrog

- Artifactory servers
- To maintain build artifacts  
(jars/wars/images)

#### 13) Kafka

- Message Broker
- Event Driven applications

#### 14) Redis

- Cache

- To reduce db calls

15) Postman

- API Testing

16) Swagger

- Documentation

17) Apache POI

- To generate excel files

18) iText

- To generate pdf files

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Pre-Requisites  
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Laptop / System : 8 GB RAM

Java : 17v

Free tier account in AWS cloud

Reference : <https://www.youtube.com/watch?v=xi-JDeceLeI>

Daily : 1.5 hours class + 2 to 3 hours for practice