Java Real time Projects Development

Pre-Requisites

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1) Core Java

- java.lang package

- Arrays

- OOPS

- Collections

- Multi Threading

- I/O Streams

- Annotations

- Generics

- Exception Handling

- Reflection API

- Java 8 Features

- java.net

- javax.security

2) Adv Java

- JDBC

- Servlets

- JSP

- Connection Pooling

- Web Server & Application Server

3) Frameworks

- Hibernate

- Spring (Spring Core and Spring MVC)

- Restful Services

4) Database

- Oracle | MySQL

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Course Content

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1) Introduction of Project

- Types of Projects

- Types of Companies

2) Functional Domain

3) Technical Domain

4) Project Teams

- Onshore Team

- Offshore Team

5) SDLC

6) TDD

7) FDD

Realtime tools

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SVN

GIT HUB

Maven / Gradle

Log4J

JUnit

Mockito

JIRA

Jenkins

Putty

WinScp

Splunk

Docker

PMD and SonarQube

Jacocco

Linux Commands

Spring Boot

Spring Data

SPring Rest

Spring Cloud

MicroServices

JQuery with AJAX

Apache Kafka

Java Mail API

Twillo API

Spring Schedular

Duration : 2 to 2.5 months

timings : 7 am to 9 am

Daily 2 logical programs as assignments

Mock Interviews

Resume Preparation

Interview Questions

Email : ashok.javatraining@gmail.com

Facebook Group : Ashok IT School

Youtube Channel : Ashok IT School

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Coding Test

Technical Round-1

Technical Round-2

Manager Round

HR

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Techinicle-1 (Telephonic)

Technical-2 (face to face)

Manager

Client Round (Skype)

HR

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Technical

Manager

HR

6-9 am - Project class

9 - 9:30 - Break Fast

10:00 - 12-30 : 2.5 hours project implementation

12-30 - 1:30 - Lunch

1:30- 3:30 : Logical Programs

4 - 6 : Frame works

6 - 8 : Spring MVC class

9 - 11 : Core Java

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11:00 - 11:30 : Retrospective

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What is Project?

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Collection of Software programs is called as Software Project.

Why to develop Software Projects?

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Software Projects are used to reduce human efforts.

Ex: Ticket Booking, Money transferring, Online shopping, food delivery.

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Types of Companies

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1) Product based

2) Service based

3) Consulting based

4) Audit firms

Product Based Companies

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1) These companies will develops products with their own ideas and they will sell in market.

2) Product based companies will not have clients they will have customers.

Ex : Dell, Samsung, Hp, Oracle, MS etc....

In Product based companies interview will be on

core concepts like DataStructures, Algos and Design Patterns.

Service Based Companies

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2) These companies will develop projects based on clients requirements.

Ex: TCS, Infosys, Wipro, TechM, Accenture, CG, CTS etc.....

In Service Based companies interviews will be on latest technologies in market.

Spring Boot, MicroServices, Angular etc....

Consulting Based Companies

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Permanent Job

Contract Job

Ex : YOu are emp of Magna InfotTech and you are working for IBM.

Audit Firms

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Business mens accounts management

Company Accounts management

Company Audits etc...

Big4 : Deloitte, PWC, E & Y and KPMG.

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Types of Projects

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1) Scratch Development Projects (5%-10%)

- > Brand New Projects are called as scratch development

2) Maintenence/Support Projects (85 %)

- Enchancements

- Change Request

- M & O (Bug Fixing)

3) Migration Projects (10%)

java version migration

server version migration

mainframes to java migration

Project Teams:

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1) Onshore Team: Team which is working from client location

a) Functional Team (Business Team)

b) Dev Team

c) Testing Team

d) Admin team

2) Offshore Team : Team which is not working in client location.

b) Dev Team

c) Testing

d) Admin

Note : Onshore and Offshore teams will communicate through Brdige Calls (VOIP) or Skype Business or WebEx or VC.

Project Development Procedure

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1) Company will make an agreement with Client For Project Development.

2) OnShore Functional Team will collect requirements from Client.

3) Onshore Functional team will prepare BRD (business requirement document) - High Level requriement document.

4) Onshore team will submit BRD to client for approval.

5) Client will provide approval for BRD.

6) Onshore functional team will prepare FDD/SRS using BRD.

BRD - Business Requirement Document

FDD - Functional Design Document

SRS - Software requirement Specification

7) Onshore functional team will submit FDD to client for approval.

8) Client will provide FDD approval.

9) Onshore Functional team will setup bridge calls with Offshore team to explain FDD.

10) Onshore team will upload BRD and FDD in sharepoint location and they will Sharepoint URL to offshore team members.

11) Using Sharepoint URL offshore team members will download BRD and FDD.

12) Offshore team members will study FDD.

13) Offshore team members will write queries in Query Log.

14) OnShore team member will provide clarifications to queries.

15) Daily Meetings will be available to get clarifications on query log.

16) After meeting, we should send MoM (Minutes of Meeting).

17) After all queries got clarified, Developer will prepare TDD

TDD - Technical Design document.

Note: MicroSoft Vision, Star UML, Enterprise Architect (EA)

18) Developer should send TDD to project architect & functional team for approval.

19) Architect and Functional spoc will provide approval for developer TDD.

20) Post TDD approval , developer will start coding.

21) Developer will perform Unit Testing. (Junit & Mockito)

22) Code Review (PMD or SonarQube)

23) Push Code to Repository Server (SVN or GitHub or BitBucket)

24) Developer will perform Integration Testing (DIT)

25) Developer should capture DIT Results (Dev Artifacts)

26) SIT (system integration testing - software testers)

27) UAT (User acceptance Testing - client side ppl)

28) Pilot (similar to production/pre-production)

29) Production - Live

30) Maintenence & Operations (M & O).

https://www.mediafire.com/file/rnk4x8r4sx1duod/Class-Notes.txt/file

What are your Roles & Responsibilities

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1) Collecting Requirements from Functional team in terms of BRD and FDD

2) Understanding FDD

3) Updating queries in Query Log (Excel file)

4) Attending Meetings with functional team to get clarifications on Queries which are logged in Query log.

5) Sending MoM

6) Preparing TDD

7) Getting approval for TDD from Architect and Functional team

8) Development

9) Unit Testing (Junit and Mockito)

10) Code Review (PMD or SonarQube)

11) Pushing code to Repository (SVN or GIT HUB or BitBucket)

12) Integration Testing

13) Capturing Dev Artifacts

(Testing results, junit reports,code review reports etc..)

14) Support for SIT and UAT phases

15) Participating in Triage calls.

Project Environments ?

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How many environements are available for your project ?

Who will promote code or build to higher environments ?

How code will be promoted to higher environments?

How you will fix bugs in higher environments ?

Developer Environment (Dev Box) - Integration Testing. - developers

SIT (System Integration Testing)- testers will test

UAT (User Acceptance Testing) - client side team will test

Pilot - performance testing

Production - Live environment

MOM(Minutes of Meating)

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To : To all attendees

CC : Lead and Manager

Hi Team,

Thanks for joining the call. Below is the summary of the call.

Attendees : Ashok, Ramesh, Raju and Joseph.

Discussed Points

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1) password should be encrypted.

2) After Registration successfull Email should be sent.

3) Login Page should not contain Role Dropdown.

Action Items

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1) Email Subject and Body should be provided by Joseph by Today EOD.

Note : Please add if i miss anything.

Thanks & Regards,

Ashok.

How to assignment a task to team member

----------------------Task assingment-----------------------------

Hi Team,

As discussed in triage call, today we have 7 defects open in UAT.

Please find below assingments for today.

Raju - BUG-101

Ramesh - Bug-102

Ashok - Bug-103

Note : Please complete your checkins by 3 pm.

Thanks,

Lead.

Build Tools:

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As part of Project Development along with Technologies we need to use some tools also to complete development successfully.

ICICI Bank --- > Spring Spring Boot Hibernate and Restfulservice Oracle.

Jars downloading

Adding Jars to Build Path

Compiling

Executing Unit Test Cases

Packging (jar or war or ear)

Deployment

To automate all above steps we need a build Tool.

Build Tools: Ant or Maven or Gradle

Version Control Tools or Repository servers or SCM

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Project Development will happen in several locations and in several companies.

We need a common location to maintain all source code related to a project.

We can use Reposiotory servers to maintain project sourcecode.

Ex : Clear Case, CVC, VCS, SVN , GIT HUB and BitBucket.

Unit Testing Tools

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Junit

Mockito

PowerMock

EasyMock

WireMock etc...

Code Coverage Tools:

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How many lines of code is covered in junit cases can be identified by using code coverage tools.

Ex : Jacocco

Logging Tools

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Log4j

Log4j2

SLF4J

Logback etc...

Log Monitoring Tools

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Putty

WinSCP

Splunk

CI & CD tools

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Jenkins

Docker (Container)

Performance Testing Tools

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JMETER

Load Runner

Bug Reporting Tools:

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BugZilla

JIRA

Code Review Tools

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PMD and SonarQube

SVN Client

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1) Tortoise SVN we can use as SVN client software

2) Subclipse plugin also we can use as SVN client Software (for IDE)

3) SVN client software will be installed in all project team members systems.

1) Project Manager will send an email to SVN admin to create Repository and user accounts.

Repository Name : SBI\_App

ramesh.b@tcs.com

sunil.g@tcs.com

gita.a@tcs.com

Repo URL : https://DESKTOP-OLT40PU/svn/SBI\_App\_Repo

Repo URL : https://DESKTOP-OLT40PU/svn/Axis\_Bank\_App\_Repo

To : svn admin or admin Dl

cc : manager and team lead

Subject : SVN Access is Required

Hi Admin Team,

My self Ashok, recently i joined in Axis Bank Project. Please provide me SVN access and details.

Email : ashok.b@tcs.com

Emp Id : 97979

Phno : 80808080

VPN ID : ABollepalli

@Satish : Please approve this request.

Thanks & Regards,

Ashok.

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Approved......

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Account is created. PFB details

URL : https://DESKTOP-OLT40PU/svn/SBI\_App\_Repo/trunk

Uname : charles

pwd : charles

Note : Don't share with anyone.

Add : To commit new files to repository first we need to add those files then only we can commit to repository.

Commit/Check-In : Moving files from local system to Repository.

SBI Repo Trunk URL : https://DESKTOP-OLT40PU/svn/SBI\_App\_Repo/trunk

Username : john

password : john

Checkout : Taking Repository to Local System. This we will do only first time.

Add : This option is required when we commiting new files to Repository.

Commit : Pusing files/folders from local system to Repository.

Checkout : If we want take Project From Repository for first time Then We shuould perform Checkout.

Note : To do checkout we should know Repository URL, Uname and pwd.

After Modifying existing files, we need to commit/check-in.

Note-1: Before commiting we should compare local file with repository file. If there are any new changes in Repository file we should take update of the file and then we should commit.

Note-2: If it is a new file, first add it and commit.

Compare or Show Diff : This option is used to compare local file with repository file.

Update : This option is used to take latest changes from Repository files to local files.

Check-In / Commit : This option is used to push changes from local files to Repository files.

Note : When we commit a file to Repository, server will incrment Revision Number or Version Number.

Show Log: This option is used to see commits history like who, when, why and what.

Delete : We will use this option to delete file(s) from Repository.

It is 2 step process

1) Delete File from local system

2) Commit

Note: Files which are deleted, will be avilable in previous revisions.

SVN - Subversion

It is an open source repository server

SVN is a Centralized Server.

Server & Client softwares

Server will be installed in only one computer (Visual SVN)

Client software will be installed in several computers.

(Tortoise SVN or Subclipse)

They will share SVN URL, Uname and pwd.

Checkout : Taking project from repository server to local system.

Add : New File(s) Should be added to commit

Check-in : The process of moving changes from local system to repository system.

Diff : If we want to commit an existing file first we should compare local file with repository file.

Working Copy -Local file

Working Base - Repository File

Update : If any new changes are there in repository which are not there in local file then we should take update before committing.

Note : Best Practise is, before making any changes to existing files it is highly recommended to take update first.

Delete : This is used to delete file from repository. Delete File from Local and Commit that change.

Showlog : It is used to check history of commits (who , when , why and what etc..).

Lock : If we don't want others to commit a file for some time then we can get Lock on that file.

Note : If file is locked by one user then only that user can commit the changes to file others can't commit until unless lock is released.

Subclipse Plugin

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Note : By Default SVN plugin will not be available in IDE

We need to install sublicpse plugin to work with SVN from IDE.

Synchronize with Repository

1) Income Mode (We should take update)

2) Outgoing Mode (We should commit)

3) Conflict Mode (problem)

Best Practises to follow while working with SVN

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1) Don't share your SVN credentials with anyone

2) Don't Save SVN Authentication Data

3) When we are leaving desk, always lock the System

4) Always recommended to synchronize with repository before commit

5) We need to make sure our commits will not create compilation failure

Branches in SVN

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trunk : Ongoing Development repository

branches

tags

Hi Ashok,

Welcome to SBI Project..!!

From Next week our sprint is getting started. Please send mail for svn trunk access and setup your workspace.

SVN Admin Email : johnson.d@tcs.com

Thanks,

Ashok.

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Hi Ashok,

Welcome to SBI Project..!!

From Next your work assignments are going start. Please send mail for svn tag access and setup your workspace.

SVN Admin Email : johnson.d@tcs.com

Thanks,

Ashok.

Branches in SVN

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Repository in SVN ?

Dev Team -- on going development activities

SIT & UAT support Team - fixing sit and uat defects

Production Support Team - m & o

Multiple code bases

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1) trunk - Development activities

2) branches - sit & uat environements will mapped to branches

3) tags - gold copy - production code base

Drawbacks in SVN

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1) Client and Server should be connected to Network.

2) Internet Connection is mandatory to access SVN Server

3) It is centralized. Single point of failure.

4) If SVN server system is crashed we can't get data back.