

Ref: L&T Infotech Ps. No: 10657657

Date: 03/14/2019

This letter is to confirm that **Anshul Majoka** has been offered a position of **Software Engineer** with **Larsen and Toubro InfoTech Limited**. As a Software Engineer, Anshul Majoka will be assigned to work at our client, Citigroup at 3800 Citigroup Centre Drive, Tampa 33610

Project Overview

Beneficiary: Anshul Majoka

Designation: Software Engineer

Customer Name: Citigroup Office

Address where he will Work: 3800 Citigroup Centre Drive, Tampa 33610

Number of employees in Project at client location: 6

Onsite Reporting Manager's Name: Ashish Dhamnekar

Name of the Project: iPreo Syndicate Product Processor

Project Objective:

“iPreo Syndicate Product Processor” is an initiative to automate functions and processes within Citi's ‘Equity Capital Markets’, ‘Debt Capital Markets’, ‘Syndicated Loans’ and ‘Investment Banking’ groups. It will streamline the clients accounting, ECM and DCM business operations, with increased controls over revenue and expense, a more efficient operating model leading to a better client experience. The key objective is to reduce operational errors and provide robust automated, Fault Tolerance and High Availability interfaces to capture transaction details and achieve straight-through processing.

Tools and Technologies:

- Programming language: Java JDK 8, JSON, JUnit, Angular 7
- Web Technologies: HTML 5, jQuery, Cascading Style Sheets (CSS), CSS3, JavaScript AJAX, jQuery, Bootstrap, ECMAScript 6, Typescript
- Hibernate, Spring Data JPA, Spring Security
- Apache Kafka, Zookeeper
- Spring boot, Microservices, Spring MVC, Spring Cloud
- Database: MongoDB, Oracle 11g
- Code Quality: TSLint, Sonar Lint
- Testing: Mockito/JUnit/Qunit/Karma/Mocha
- Workflow and deployment Tools: JIRA, Bit Bucket, TeamCity, OpenShift
- Operating systems: Linux, Windows

Larsen & Toubro Infotech

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Job Duties:

Job Duty: Analyze business requirements and design data models for application software.

Duty Details:

- Develop design specifications in accordance with business requirements and issues.
- Draft and maintain business requirements and align them with functional and technical requirements.
- Design data model using the Oracle SQL Developer tool.
- Create ER diagrams that align with the existing data model and ER model of the application.
- Use Rational rose tool to convert business requirement into Object-oriented Unified modeling language(UML) and create UML diagram.
- Create Process Flow diagrams using Microsoft Visio.
- Develop design documents using requirements such as scope, processes, alternatives, and risks.
- Responsible for preparing use cases, high-level design, and architecture of project including technical documentation.
- Participated in meetings with the client to clarify business requirements as mapped to functional and technical specifications and identify gaps.
- Analyze and decompose high-level business requirements and user system requirements into functional requirements and supported requirements documentation and traceability.

Why a Bachelor's Degree in Computer Science or a related field is Required:

- Bachelor's degree teaches analysis and design methods techniques which help in analysis and understanding of architectural design and decisions.
- Bachelor's degree curriculum includes software development life cycle models like the Waterfall model, Iterative model, Spiral model which helps in understanding the approach to handling requirements in various situations.
- Bachelor's Degree often emphasizes research in addition to software development skills, which in turn teaches how to gather data/requirements and turn into useful information.
- Bachelor's degree helps to understand SSAD, OOAD, DOM architectures, Object caching and Unified modeling language

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Time Spent on this duty:

- 15% of the time spent on this duty initially, when new requirements come in for development, more time spent on requirements analysis and design. Later time is spent on development and testing.

Job Duty: Application Configuration and the design & development of the application.

Duty Details:

- Develops software and follows the company SDLC (Software Development Lifecycle), which includes Agile sprint tasking and Task management via Jira
- Configure spring boot microservice using @Configuration annotation.
- Configure the application's Oracle data source so that the application database layer can perform the database operation.
- Use Spring JPA repository in order to achieve decoupling between application code and the underlying database usage.
- Manage all aspects/lifecycles of projects for engineering including resourcing and deliverables timeline.
- Develop solutions architecture, algorithms, and designs for solutions that scale to the customers business requirements
- Design and development of various functionalities from UI to back-end including restful Web-service with service-oriented development.
- Develop rest API using the spring framework's @RestController.
- Use hibernate to dynamically generate HQL queries.
- Develop, implement, and maintain an asynchronous, AJAX based rich client for improved Develop and maintain elaborate services-based architecture, created various reference lookup services as Web services using Castor Mapping, SOAP UI.
- Development of entity relationship diagrams to depict the logical and physical view of the data.
- Create a data model to help in the visual representation of data and enforces business rules, regulatory compliances, and government policies on the data.
- Develop Data Models to ensure consistency in naming conventions, default values, semantics, security while ensuring the quality of the data.
- Design data model to make sure that data objects offered by the functional team are represented accurately.
- Utilize the Agile process to streamline the development process with iterative development. The system was developed in a test-driven development (TDD), Extreme

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Programming (XP), Pair Programming environment using iterative development methodologies

- Modularizing the application by leveraging the Spring framework.
- Develop a microservice architecture based application, with Spring Boot and spring cloud.
- Develop a combination of and Apache Kafka & REST endpoints to be consumed by other application services interacting through a Deployed services to Openshift Platform in Docker containers.
- Develop utility classes and methods to achieve abstraction, and converting database entity into a data transfer object, to be shared across the network and with the User Interface.
- Develop Component-based architectures and create scalable, flexible technical solutions.
- Develop new components, support existing systems, study their enterprise complexities and develop/implement better systems with modern software development practices.
- Writing complex Server/UI logic to handle large datasets for efficient handling of various operations on UI.
- Implement maven BOM file for iPreo to manage common dependencies and plugin versions centrally for the microservice architecture.
- Utilize Apache Kafka for inter-service communication between different parts of the application.
- Perform peer code review via bitbucket pull request.

Why a Degree in Computer Science or a related field is Required:

- Bachelor's degree helps to learn programming languages to develop interfaces, design patterns, domain objects and integration with UI, middleware and database tiers
- In a Bachelor's, we study courses on software engineering, Java programming, information security and database management will be required to understand the technical details of the application, technology, and architecture.
- Bachelor's degree courses typically address logic, problem solving and algorithms, which is key a point in day to day routine work of a software engineer.
- Courses in Bachelor's like Database management system helps in understanding and designing of data models, there logical and physical views. The course also helps in understand the ER model, Transaction and concurrency controls, ACID properties, crash recovery.
- Bachelor's degree helps to learn programming techniques used for developing Java programs which can be integrated with Apache Kafka.

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Time Spent on this duty:

70% of the time spent on designing data model, implementing the data model on to the relational database and development of the application using best practices of microservice architecture.

Job Duty: Unit testing, System testing and Integration testing of the application.

Duty Details:

- Work with cross-functional teams to ensure quality throughout the software development lifecycle.
- Evaluate product code according to specifications
- Write unit test cases to remove bugs, vulnerabilities, or duplications which are analyzed by sonar lint.
- Verify code quality is meeting is the organization standard.
- Design and define test cases for functional, system integration, and user acceptance.
- Develop and execute software test plans in order to identify software problems and their causes.
- Write the JUnit and integration test case using the Mockito framework.
- Write the UI test case using QUnit.
- Mocking database calls during test case execution to enhance the application performance by reducing test case run time.

Why a Bachelor's Degree in Computer Science or a related field is Required:

- Bachelor's degree courses along with the development of code using various language also teach methods to measure code quality and testing techniques using framework and tools available such as Mockito, Quint, Junit.
- Bachelor's degree teaches the best practice to write code and develop an application that helps in overcome Sonarlint check and follow organization coding standard.
- Collaborative learning in bachelor's while doing practical projects teaches teamwork, pair programming and effective communication with other teams

Time Spent on this duty:

- 10% of the total time is spent on testing and verifying the code quality.

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Job Duty: Deploying the application to a cloud environment, fixing UAT issues and production support.

Duty Details:

- Designing the overall Delivery Automation strategy, via automation at several layers of the Technology stack to implement a Continuous Deployment/Delivery pipeline using Docker, and OpenShift
- Configure build jobs to fetch application code from centralized code repository and do the maven build of code in TeamCity.
- Deploy the build generated in TeamCity to the various environments starting from dev environment to QA and then UAT.
- Bug fixing of any error occurs during the UAT Process and production release.
- Analyzing, logging in Jira and fixing bugs raised in the production environment.

Why a Bachelor's Degree in Computer Science or a related field is Required:

- Bachelor's degree provides an understanding of the multiple phases of build and deploys and knowledge of build tools like maven, build job configuration tool Jenkins and finally the deployment environment Openshift.
- Bachelor's degree teaches to solve complicated algorithms problem, find bugs in the code, solve them effectively within a bounded time period, this helps in finding and fixing UAT issue and production support.

Time Spent on this duty:

5% of the time is spent on deploying the application to the cloud, this activity goes along with the development and coding.

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Kindly note, Larsen & Toubro InfoTech Limited has a standard practice of recruiting individuals with a minimum of a Bachelor's degree in computer science or equivalent in a related field for this position.

Compensation will be paid by Larsen & Toubro InfoTech Limited who will be his actual employer. **Anshul Majoka** will be paid on a semi-monthly basis through Larsen & Toubro InfoTech Limited payroll service provider. **Anshul Majoka** will be a W-2 employee. He will be operating at all times under the control of Larsen & Toubro InfoTech Limited management and all activities, including managerial supervision and hiring and firing decisions, as well as performance evaluations are controlled by Larsen & Toubro InfoTech Limited.

The duration of this project is ongoing and expected to exceed three years (renewal happens every year on year basis). The beneficiary will work a 40-hour week.

If you have further questions do not hesitate to contact me.

Yours Truly,
For Larsen & Toubro Infotech Limited

Ashish Dhamnekar
Lead Consultant BFS

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