Lahore, Pakistan
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SUMMARY

A Senior Software Quality Engineer with more than 4.75 years of professional experience in testing backend, front-end and AI solutions. Leading and consulting a team of 4 resources. I have a hands-on approach to Performance Testing using Jmeter, Automation Testing using Selenium with Python (Pytest), DB testing and optimizing DB utilization. I have a deep understanding of creating/conducting test cases to find/log the defects to deliver a quality and high-performance product.

EMPLOYMENT

Senior Quality Engineer **i2c Inc.** **Jan 2023 - Present**

- Currently, evaluating the optimal configurations for the Centralized Logging Stacks Grafana-Loki & ELK as considering our applications and each application's nodes, hundreds and thousands of log files of huge size get generated. Our Centralized logging stack doesn't cope with that many logs incoming and gives a lot of latency. I am working on finding the optimal configurations like logs rotation policy, logs indexing etc.
- Evaluated/enhanced the performance of a CDC-Kafka Pipeline exponentially I.e. from 10 to 250 transactions per second, which synchronizes the data from Informix DB to Greenplum DB by capturing the changes done in logical logs of Informix DB, by suggesting the implementation of GPLOAD utility at consumer side instead of batch inserts at Greenplum.
- Configured the GZip compression for 4 new content types e.g. .xls, .pdf etc. of Reports Download Formats which gives ~90% performance gain.
- Tested the performance of 1st i2c Docker containerized application I.e., Pre-Authorization Expiry Scheduler and recommended the ideal JVM setting and memory capping for the container.
- Analyzed a Greenplum DB connection leakage issue on production which was causing the DB to reach the maximum limit of connections I.e. 1000. Then analyzed a Postgres DB utility I.e., PgBouncer which provides the connection pooling functionality and closes the idle DB connections.
- Assessed the Snowflake DB performance in comparison with Greenplum DB using i2c, by execution of DML and DQL statements, and observed that big data processing results were the same for both. But for single records processing, Greenplum DB results were better as it contained indexes which Snowflake didn't.
- Tested the K8s Cluster-based Internal Chatbot Service which was built for clients querying related to the i2c domain. It involves 3 web services which are document embedding service (used for storing the documentation of i2c APIs/technical domain), search engine service (to search the relevant query in Redis cache cluster) and chatbot service (including the chatbot-related APIs). Conducted the capacity of 4 APIs and found the slow MySQL DB queries which were executing without indexes.

Quality Engineer **i2c Inc.** **Jan 2020 - Dec 2022**

- Started performance testing of all ETLs (export, transform, load) modules in i2c and enhanced the Billing ETLs execution performance in production from 7 days to 14 hours by query optimization and tuning the application connection pooling configurations.
- Evaluated the capacity of AI Restful Web Service (a fraudulent transaction detection service) and suggested the CPU capping technique for MySQL DB due to the high CPU utilization of MySQL DB during the testing which leads to the full machine CPU utilization and finally choking of complete VM.
- Performed the root cause analysis of memory issues in iNet19 (a 3rd party application for reports generation) on Production I.e., duplicate reports execution which caused the 96GB application memory to exhaust. So, I suggested the optimal configurations to cater for these JVM issues.
- Developed the regression scripts for all 7 major payment networks Mastercard, VISA, EFUND, STAR, UNIONPAY, DISCOVER, and American Express to evaluate the performance of their online transaction processing and offline processing threads.
- Assessed the Talend ETLs for the substitute of our conventional ETLs to eliminate the overhead on DB as it stores the data in memory. But rejected the POC (proof of concept) as too much heap utilization was observed due to transactional tables data ~>0.1 million records were getting stored in memory and causing execution of Full GCs (Garbage Collector) which leads to slowness.

Associate Quality Engineer **i2c Inc.** **Jul 2019 - Dec 2019**

- Conducted the jprofile analysis of all i2c's applications using the JProfiler application and reported the performance issues including time-taking queries, methods etc. to relevant development teams.
- Found the capacity of 3 new Restful & 2 SOAP APIs and developed/maintained the regression scripts for existing ones to retain their performance by eliminating any performance bottlenecks.

Skills/Technologies

- Programming Languages – Python (intermediate), C++ (basic), Shell Scripting
- Database – Informix, MySQL, PostgreSQL
- Operating Systems – Linux, Solaris, Windows
- Automation Tools – JMeter, Selenium with PyTest, Postman, Appium
- Monitoring Tools – Dynatrace, ManageEngine, JProfiler
- Others – Kafka, Docker, K8s, Vim, JIRA, ArgoCD, Bitbucket, JVM Tuning, Grafana, Loki, Promtail, ELK

Education

Lahore, Pakistan **University of Engineering & Technology** **Sep 2015 - Jun 2019**

- B.Sc. in Computer Science
- Majors: Data Structures, Design and analysis of Algorithms, Computer Architecture, Artificial Intelligence, Database Systems, Operating Systems, Software Engineering.

B.Sc. Final Year Project

- **E-Qari**: A desktop application to make the correction in the recitation of Holy Quran was designed by using different preprocessing techniques like removing silence, pre-emphasis etc. and multiple voice algorithms like MFCC, DFT, and IDFT to get the feature vectors from the voice. Then, to compare with the different Tutor voice models to calculate the accuracy of recitation and point out the mistakes.

Achievements and Awards

- Nominated for the QA Engineer of the Year at AGM (Annual General Meeting) '23 in i2c, one given to the best Quality Assurance Engineer of the Year among the whole i2c.
- Won Outstanding Performance Award at AGM (Annual General Meeting) '21 i2c., given for extraordinary performance in a year.
- Got 1st position among the whole department of ~300 employees for two consecutive releases in i2c.
- Got 1st Prize in Poster Competition in Kinnaird College Research Conference '19 held among ~50 universities of Pakistan.
- Won Pride of Performance Award for delivering outstanding Logistic Management being a Logistics Head for SAC (Society for Advancement of Computing).
- Awarded 3rd position in Essay Writing Competition by CM Punjab in Middle School.