Mahmoud Al Sous . Jarvis Consulting

I am a Computer Systems Engineering graduate from Carleton University looking to pursue my career in software development engineering. During my academics, I studied data structures, algorithms, computer architecture, and obtained strong programming skills with languages such as Java, Python, and C/C++. Currently, I am working with Jarvis as a Software Developer, where I further improve my skills and work with new technological applications. I am fascinated by the ever-changing software industry because it allows us to fix problems that impact our society for the better, and I would like to use my problem-solving skills to be involved in projects that improve our software systems.

Skills

Proficient: Java, Linux/Bash, RDBMS/SQL, Agile/Scrum, Git

Competent: C/C++, Python, C#, Docker, JUnit

Familiar: Maven, IntelliJ IDEA, Verilog, Machine Learning, MATLAB

Jarvis Projects

Project source code: https://github.com/jarviscanada/jarvis_data_eng_MahmoudAlsous

Cluster Monitor [GitHub]: Implemented a Linux Cluster Monitoring Agent that allows users to record and monitor the hardware specifications and resource usages of each node in a Linux Cluster in real-time, which are running on the CentOS 7 operating system. The tool was designed to keep track of these nodes by communicating through IPv4 addresses internally through a switch. This was tested using a virtual machine instance, which was created on the Google Cloud Platform. The data collected by the Linux Cluster Monitoring Agent is entered into a PostgreSQL database hosted by Docker using SQL queries, which the Linux Cluster Administration (LCA) team can use to provide reports for future resource planning. The system was managed using Git and the source code along with the assisting files were uploaded to a Github Repository that connected with the remote desktop through an SSH encrypted connection.

Core Java Apps [GitHub]:

- **Grep App**: Designed a Java Grep Application that mimics the functionality of the Linux grep command, which searches files in a certain directory and matches given strings to the text in the files. The app utilizes regex, lambda expressions, Stream APIs, and Maven. The application was tested using JUnit Testing and containerized in Docker.
- **JDBC App**: Developed a Java Database Connectivity (JDBC) application that allows users to establish a connection between a Java app and a PostgreSQL database. The application can perform multiple tasks directly to the database using a CRUD methodology (Create, Read, Update, and Delete). This application was implemented with Maven, SQL, Java, Data Access Objects, Data Transfer Objects, JDBC, Docker, and PostgreSQL. A JDBC Executer class was implemented with a main method to manually test the application and Docker was used to contain the program.

Highlighted Projects

Automated Testing of CAN Bus Networks [GitHub]: Developed an automated tool using a modern approach called Intrusion Detection along with one class classification and a statistical methodology to test the security on CAN Bus systems. I developed the testing software and was tasked with testing the framework on given data and recording the results.

R-Tanks Mobile Controller [GitHub]: Designed a tank shooter game that allows each player to use an application on their mobile device to control their tank. I developed the application through flutter to build an interaction between the app and the Arduino board on the tank. The app sends coordinates to the Arduino through Bluetooth UART, which allows the Arduino to control the servo motors installed on the tanks. I was also in charge of developing a database which connects to the IR sensors on the tanks to record when any tank is hit by the other for score keeping.

Professional Experiences

Software Developer, Jarvis (2022-present): Implemented multiple applications using the Agile methodology. Participated in organizing and leading daily scrum meetings with the development team as well as scrum retrospective meetings to go over the last scrum period and how to improve on the project. Throughout the development process, I used Java, Linux, Docker, SQL, and bash scripts to complete the projects. I was able to gain some team collaboration skills through

using the scrum boards when managing the sprint backlogs. I was able to utilize and improve my problem-solving skills by working on the tasks and coding challenges that are part of the projects. Most importantly, the development process ensured that I learned the core concepts of every technical aspect of the assignments, and I was able to use my prior experience to help me complete the tasks.

Education

Carleton University (2017-2021), Bachelor of Engineering (Computer Systems Engineering), Computer Engineering - Entrance Scholarship - Dean's Honour List (2020, 2021): Obtained a GPA over 10.0(3.7). - GPA: 3.0/4.0

Miscellaneous

- Ancaster Church Soccer Tournament Champion (2015)
- Tennis
- Hiking
- Movies and TV Shows