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RAHUL TANWAR

**Career Abridgement**

A qualified Technocrat and a dynamic **SOFTWARE DEVELOPMENT ENGINEER** with **3Years and 8 Months** of IT exposure in**Design, Development, Unit Testing, Debugging, and Integration**of **Distributed and Real-Time Systems, Embedded Domain, and Enterprise Applications** using**Java, C++, QT, QML, and DDS**onthe **Linux** platform.

**Technical Proficiency**

* Good Knowledge**of OOPS, Interfaces, Packages, Socket Programming and Multithreading, IPC,STL, Collections, Database Connectivity, UI, and Data Structures.**
* Good Knowledge of **C, C++, QT, QML, Java (JSE, JEE), XML, JSON, Python(core), HTML, CSS,and JavaScript.**
* Good Knowledge of Databases **MySQLand Oracle.**
* Knowledge of **Oracle WebLogic Server** and **Apache Tomcat** web servers.
* Good Knowledge of the Development of both frontend and backend software applications.
* Good Knowledge of**QT** and **ECLIPSE (IDE)**
* Exposure to Repositories like **Git Lab and RTC.**
* Exposure to **DDSMiddleware Architecture(RTI & OSPL)** and **Networking Protocols**
* Knowledge of**Distributed and Real-TimeApplications.**
* Exposure **BOOST** Library.
* Exposure to**GDB**
* Knowledge of **Wireshark**(reads data sent or received at the network)
* Exposure to **DOCKER**
* Knowledge of various **DESIGN PATTERNS.**

**Professional Qualification**

* **Java Enterprise Edition (J2EE)** from Ducat – Noida (2011)
* **DOEACC ‘A’ - Level** from DOEACC Society (2010)
* **PGDCST** (Post Graduate Diploma in Computer Software Technology) from A.I.M.S (2007)
* **ADCST** (Advance Diploma in Computer Software Technology)from A.I.M.S. Services (2006)
* **DOEACC ‘O’ - level** from DOEACC Society (2005)

**Work Experience**

Currently working as a **Junior Developer Grade B,**in **Weapons and Electronics Systems Engineering Establishment (WESEE) - (under Ministry of Defence)**, New Delhi.Joining date**23rd September 2019.** It develops various Software catering primarily to the requirements of the **Indian Navy**. It has a strong team of various **Naval Officers & DRDO Scientists**.

**Roles & Responsibilities**

* Understanding the **protocols** of different **Sensors and Weapons** and designing Structures/Classes to store data in the protocol format.
* To develop code according to various **Sensors and Weapons Protocols** such that the information shall be used by other modules.
* Involved in making Technical Documents including **SyRS (System Requirement Specification), FID (Functional Interface Design document**), **(IDD- Interface Design Document)**, and Testing Documents - SyRS includes requirement gathering and analysis.
* **Integration and Unit Testing** - Integration involves static checks and integrating all the backend and console application that has already cleared the SQT phase. Integration includes Bug Triage and testing of all functions as per requirement (SyRS).
* Development of Frontend, Backend, Databases, and Database Connectivity.
* Debugging, and Crash Monitoring.
* Training, Monitoring, and Mentoring Team Members

**Innovation for Organisation**

* Developed solely **Office Automation System** using JEE, CSS, JavaScript, bootstrap, Oracle WebLogic, etc. to be run over the intranet of the office and maintain it too.
* Developed a **Geometry Component** to be used as a library for the plotting of various geometry objects as required by different components.
* Developed **Interoperabilityof GCC Compiler with Python Interpreter** which is capable to make calls directly to Python libraries and provides Python solution to C++.
* Developed **Radar Communication Module** for a Radar (not mentioning Radar Name), where the module was receives data from **Radar** Console, filter and rearrange it in the required format and then send it to **Common Radar Bridge through DDS**.
* Started developing a Common Database Connectivity Component capable of performing CURD operations at SQL and maintaining the database using cryptography.

**Projects Summary**

1. **Radar Communication Module**

Radar Communication Module was used to read data received from the Radar Console of a particular **Radar**(not mentioning Radar Name) through Serial Communication and according to Radar Protocol Structures, filter and rearrange the data in the required format of Common Radar Bridge Module and then sends it to Common Radar Bridge Module through DDS.

Technologies used : GCC Compiler, QT

IDE : QT Creator

Debugger : GDB, Qt Native Debugger

Communication : DDS

Operating System : RHEL Linux 6.6

Structure Support Libraries : Boost

1. **Office Automation System**

Solely developed and currently maintaining Web application "Office Automation System" using **JEE, CSS, JavaScript, bootstrap, Oracle WebLogic**, etc. to be run over the intranet of the office.

Office Automation System is able to record daily tasks done by the employees and reports can be viewed by respective managers and officers. Dak In and Dak Out can be recorded easily and can be remarked on by managers and officers. Daily Visitors’ record is maintained with their photo capture and Visitor passes are created. Employee leaves can be maintained via leave application and approval of leaves by the respective managers. Teams can be easily maintained by managers.The training module contains a set of videos and documents that provides different training sessions and reading material to employees.

Web Server : Oracle WebLogic

Technologies used : JEE, CSS, JavaScript, bootstrap

DBMS : MySQL Server

IDE : Eclipse

1. **Decision Support System**

Decision Support System is a **Distributedand Real-Time Application** that requires multiple computing devices that share their data with each other in **real-time**. Decision Support System helps **Navy Officers** to take decisions regarding planning for different approaches to opt for National Security and Safety by means of sea and coastal areas of India. It can provide a realistic picture of threats from the enemy and their effects on us with a pictorial view such that better decisions can be catered. I am developing this project under DRDO Scientists.

I have **developed UI (frontend)** for the project using Qt, and also **involved inbackend and algorithm development and database design & development** for the project. I am also involved in the **Design Pattern** selection for the project.

Technologies used (frontend) : GCC Compiler, QT, XML, JSON

Technologies used (backend) : GCC Compiler, QT,

IDE : QT Creator

Debugger : GDB, Qt Native Debugger

DBMS : MySQL Server

Communication : DDS

Structure Support Libraries : Boost

1. **Interoperabilityof GCC Compiler with Python Interpreter**

Solely developed**interoperability ofGCC Compiler with Python Interpreter**. This project is able to directly make calls to Python functions, python's libraries, and Python’suser-defined files& returns the result back to the C++ function**without Inter-Process Communication**.

Technologies used : GCC Compiler, QT, Python

IDE : QT Creator

Operating System : RHEL Linux 8.3 (also works on Windows)

1. **Navigation Module (Combat Management System)**

A combat Management System is a **Distributed and Real-Time Application** that requires multiple computing devices that share their data with each other inreal-timeand represents real-time picture which is displayed on 2 different screens of a display console. The display console also has a third display forthe man-machine interface. Navigation Module provides **navigation tools to Indian Naval Ships**.All computations and algorithms are developed under DRDO Scientists and also verified by them.

I am involved in **maintenance, debugging, integration, unit testing,and code upgradation**ofbackend code and algorithm forthe Navigation Module of the Combat Management System.Converted the Navigation Module from Eclipse project to Qt project.

Currently developing UI for the latest version ofthe Navigation Module of the latest Combat Management System using Qt - Qml.

Technologies used (frontend) : GCC Compiler, QT,Qml, XML, JSON

Technologies used (backend) : GCC Compiler, QT

IDE : Eclipse, QT Creator

Debugger : GDB, Qt Native Debugger

DBMS : MySQL Server

Communication : DDS

Operating System : RHEL Linux 8.3

Structure Support Libraries : Boost

1. **Geometry Component**

Developed Common Geometry Component for representation of Geometries created by UI of other components of the Decision Support System and Combat Management System. Geometry Component receives Geometry descriptionsincluding measurements, no. of geometry Items, fill color, line color, orientation, transparency, labels, and location to plot (Geographically/Cartesian Plane) from UI of other components, plots them at the primary screen and update them as per update instructions received. Created classes for some geometries that are not directly available by Qt as a Graphical Item (i.e., Arc). Created Icon Plotting Class too.

Technologies used (frontend) : GCC Compiler, QT

IDE : QT Creator

Debugger : GDB, Qt Native Debugger

Communication : DDS

Structure Support Libraries : Boost

1. **Aircraft Control and Direction**

Aircraft Control and Direction (ACAD) is an advanced system that can control and provide directions to the aircraft of the Indian Navy. Development of this system is under the Scientists of DRDO and I am one of the developers for the ACAD module. I am developing the UI for this project using QT Qml. ACAD can instruct aircraft for path selection and other aircraft control functions in Real-Time as it is a Distributed and Real-Time application. Some parts of the backend and database connectivity are also developed by me.

Technologies used (frontend) : GCC Compiler, QT, Qml, XML, JSON

Technologies used (backend) : GCC Compiler, QT,

IDE : QT Creator

Debugger : GDB, Qt Native Debugger

DBMS : MySQL Server

Communication : DDS

Structure Support Libraries : Boost

1. **Database Cryptographer**

All data of the database shall be encrypted at the time of storage and shall be decrypted at the time of retrieving. Database Cryptographer is an application with **Cryptography** such that **CURD operations** can be performed easily using MySQL and data shall not be visible directly to MySQL.

Technologies used (backend) : GCC Compiler, QT

IDE : QT Creator

Debugger : GDB, Qt Native Debugger

Communication : DDS

DBMS : MySQL Server

**Educational Qualification**

* **MSC – IT** from Sikkim Manipal University (2011)
* **Graduate B.Com(P)** from Delhi University (2009)
* **Sr. Secondary school (12th)** from C.B.S.E. (2003)
* **Secondary School (10th)** from C.B.S.E. (2001)

**Competency Matrix**

Requirement gathering

Planning & Execution

Maintenance & Implementation

Effort Estimation

Team Management

Client Interaction

Release Management

Strong Collaboration and Communication Skills

Issue Handling & Resolution

**Languages Known**

Hindi and English

*Declaration:* -

“I hereby declare that the above information provided by me is true to the best of my knowledge. “

**Date:** \_\_\_\_\\_\_\_\_\\_\_\_\_\_\_\_\_ **SIGNATURE**

**Place:** New Delhi

**(RAHUL TANWAR)**