INTERNSHIP REPORT

Name Of Student :

G No. :

Program Name : Data Science and Analytics

Training Period : 05/08/2023 – 08/31/2023

PSM Program : PSM 691

Internship Advisor : Prof. Anirudh Chowdhary

Internship Site : Dematic

Position : Analyst Intern

Supervisor : Kyle Janes

TABLE OF CONTENTS

INTERNSHIP OBJECTIVES

- Working with both internal and external customer end-users to define analytics solutions and requirements and working with internal teams to concept, design, and deliver solutions.
- Working independently, within teams, and with multiple types of skill sets (business, data architect, other technical resources).
- Hands-on experience with programming skills, database, and data visualization.
- Performing business process analysis, mapping, and design.
- Ensuring high-quality delivery of software consulting services and overall client satisfaction.
- Driving development and documentation of services.
- Hands-on experience with cloud environments like Azure and GCP.
- Developing strong oral and written communication skills.
- Hands-on experience on BI Tools such as Tableau and Power BI.

INTRODUCTION

Dematic is a member of the KION Group, which focuses on material handling, logistics automation, and software. Dematic has more than 11,000 employees worldwide dedicated to global customer service, with design centers and manufacturing facilities strategically located around the world.

Dematic's success stems from its unwavering commitment to being at the forefront of adopting the latest technologies in logistics. By incorporating state-of-the-art automation and data analytics into its offerings, Dematic helps companies streamline workflows, improve supply chain efficiency, and adapt to ever-changing market needs. Using artificial intelligence, machine learning, and big data, Dematic continuously provides customized solutions aimed at improving operational efficiency and productivity in a dynamic business environment.

I was excited to join the internship opportunity at the Software Center of Excellence of Dematic. This opportunity led me to work with various teams and the client of Dematic. This involved understanding the data of various clients and researching the possible dashboard design that would properly illustrate the data. I worked in the insight department where there were 15 team members which included project leads, project managers, analyst engineers, a senior software engineer, and an analyst manager. I closely worked with the insight team as well as the sprocket team which was responsible for supporting the dematic in-house software. While working with these team members it helped me to enhance my communication skills and collaborative skills along with my technical skills such as Python, SQL, Advance Tableau, and Azure.

DESCRIPTION OF WORK

During the first few weeks at Dematic, I was assigned to many companies training about the data privacy, ethics, and onboarding process and to get familiar with the tools the company used. The onboarding process included getting the laptop and setting up the tools and the permission to use the tool. The training provided to me was a great help to get familiar with the company's culture and values. I was also assigned to schedule one-on-one meetings with colleagues to get familiar with them and on things they worked on. This meeting was very helpful to me in getting familiar with the team and the department structure, so I knew whom to ask for help in case I needed any support.

After getting familiar with my team members, I was assigned to recreate a client dashboard so that I could become familiar with the tableau and the design standard of the department. To recreate the dashboard, I did research and also received help from the team members which helped me in honing my communication skills and to be more detail-oriented. After that, I was given a more challenging dashboard to recreate which had more functionality which helped me learn more advanced tableau functionality.

Finally, I was given a project to create a central dashboard, which included the data for all the clients of the department and the team members would be notified if there was any problem in the flow of the data. For a few weeks I researched various possible dashboard designs and created the dashboard and, at the meeting, received feedback about the dashboard. Additionally, I also leveraged some complex SQL queries to extract and transform the raw data from multiple sources into a centralized data warehouse optimized for analysis. I also utilized Python for data cleaning and exploration, handling missing values, and anomalies in the data to ensure consistency and reliability.

After many meetings, we decided that the highlight table dashboard would meet the requirement of displaying the data for all clients in a single dashboard and for altering the line graph. After creating the highlight table dashboard we received more feedback from

the other team members which added more interactivity and functionality to the dashboard. The initial line graph visualizing trends over time did not allow for altering to analyze different scenarios. After experimenting with various graph types, I implemented a parameterized bar chart using Tableau's calculation fields and LOD expressions to enable adjustable forecasts and what-if analysis.

Getting to the final dashboard design involved an iterative approach with regular stakeholder feedback and enhancements. From the initial mockups, to applying best practices for visual design and end-user interactions, it required collaborating across teams to create an intuitive, insightful, and flexible dashboard catered to the analytical needs of leadership. The multi-phase process enabled me to employ a diverse set of technical capabilities spanning data integration, analytics, and visualization while solving a complex business problem that impacts decisions across the organization.

The opportunity to perform the data analysis and create the interactive dashboard helped me a lot in knowing the in-depth data life cycle process. Also, I’m grateful that I was able to add value to the company and to the team where the interactive dashboard that I created is being used globally by the analytics team to track the client’s server memory, RAM, alerts, and subscription. Furthermore, I was also able to fine-tune and optimize the query performance for the dashboard.

INTERNSHIP DISCUSSION

Now while looking back I believe all of my internship objectives have been achieved which I was looking to learn for this opportunity. After working in Dematic for almost 4 months I was able to improve on both technical and professional skills. In terms of technical skills, I got the opportunity to work on the Tableau and create dashboards using advanced Tableau functionality by meeting department standards. I also worked on SQL Server Integration Services (SSIS) for extract, transformation, and load (ETL) purposes. I also got the opportunity to work on huge data sets from all customers which were from all over the world and had different time zones. I was able to handle data from multiple time zones. Similarly, I also used Python to clean and transform the dataset which helped me better understand the dataset and I also wrote calculated fields in Tableau to create dashboards. I was able to improve my skills in Python, SQL, Azure, and Tableau by working on a complete data life cycle.

Apart from my technical skills, I was also able to improve upon professional skills such as communication skills, interpersonal skills, decision-making, and research-oriented skills. To come up with different ideas and to add different functionalities to the dashboard, I had to research various ways to make the dashboard appealing and interactive which I researched from different platforms. I was also able to improve my presentation skills asI had various opportunities to present the dashboard and my insights to my manager and my team members and receive valuable feedback from them. I was also able to improve and hone my verbal and written communication skills which is an essential part of any professional setting.

PSM coursework has helped me significantly to better understand the company culture, and built up soft skills, interpersonal skills, and collaboration skills. I was also able to learn the work ethics and professionalism which helped me create better professional relations and a working environment. I was also able to communicate professionally with my team members which helped me build a good relationship and trust among the team members.

The challenge that I faced during my internship was presenting ideas and explaining the dashboard to the team members in a non-technical way. However, after many iterations of presenting I was more confident in the non-technical presentation, and I believe my presentation skills will improve more as I present it to other non-technical people.

Overall, I am very satisfied with my internship experience which helped me to gain both technical skills and professional skills. I was able to learn and implement skills like Tableau, SQL, and Python. Apart from this technical skill I was able to hone and excel my communication, strategic thinking, and analyzing skills. Similarly, I'm more research and detail-oriented now which would help me in advancing my career. As I look back, I am confident that I have learned and developed both technical and nontechnical skills that will help in my career ahead and I'm always grateful for the opportunity Dematic has provided me.