System Development @ Credence (TM_Subsidiary)

by Iman Abadi MOHD NIZWAN

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INDUSTRIAL TALK 2: System Development @ Credence (TM Subsidiary)

FACULTY OF COMPUTING

Lecturer	Dr. Aryati Binti Bakri
Section	02
Group	08
Group member	1. Ahmad Adib Zikri Bin A.Mazlam (A23CS0205)
	2. Iman Abadi Bin Mohd Nizwan (A23CS0084)
	3. Muhammad Naim Bin Abdullah (A23CS0134)
	4. Muhammad Mukhritz Al Iman Bin Mohd Raffi (A23CS0250)
	5. Muhammad Afiq Danial Bin Rozaidie (A23CS0117)

GROUP 08 MEMBERS :

Iman Abadi

Ahmad Adib Zikri

Muhammad Afiq Danial

Muhammad Naim

Muhammad Mukhritz Al Iman

System Development at Credence, TM Subsidiary

Credence is a subsidiary of the TM Group organization that provides cloud and digital services. They aim to assist enterprises from both the public and private sectors in their digital transformation journey by identifying their mission crucial goals and working with them according to their needs and priorities. Credence offers capabilities ranging from tech infrastructure to business insights, cloud advisory, IT landscape migration, software-as-a-service (SaaS), managed services as well as analytics and insights.

One of Credence's solutions for businesses to migrate to the digital real is their cloud service named Cloud Alpha Edge. Cloud Alpha Edge is a crucial step in this process as it is the foundation of adopting new technologies such as Artificial Intelligence (AI), Machine Learning (ML) and 5G swiftly and effectively (Credence, 2020). Secondly, Credence's managed services allow companies to free up vital internal resources so they can concentrate on their main goals. This helps the companies by offering a wide range of services such as Infrastructure as a Service (IaaS), Software as a Service (SaaS), Platform as a Service (PaaS) and security (Credence, 2020). After that, SaaS is also one of Credence's solutions. Their aim with this is to transfer key applications to the cloud, helping to welcome cloud-native industry and functional applications, and developing new digital native applications using DevOps (Credence, 2020). Last but not least is their approach to data and analytics which offers expertise in three key areas: Data pipeline, technology stacks and adoption lifecycle (Credence, 2020). This is innovative as the growing trends where data is considered a key component to a company's success as data is becoming more voluminous and valuable. Thus, good data extraction and analysis are needed to achieve said goal.

According to Qistina, as a data engineer, the tools she used varied according to the tasks that needed to be achieved. For database management, she mainly uses PostgreSQL, but ClickHouse and Druid are also utilised from time to time. As for tools to visualise data, she uses Tableau and PowerBI, however, she will use an open-source visualisation tool such as Metabase and Superset if the client is on a strict budget. She uses Airflow and occasionally Spark for ELT/ETL and lastly, she said that the most crucial programming language a data engineer must master is both Python and SQL.

Skills Required to Become a Data Engineer

The trending growth of big data has led to the need for professionals who can process and manage large amounts of data. Data engineers come into play as they are essential for the currently data-driven world. Data engineers are responsible for creating systems that gather, organise, and transform unprocessed data into information that can be interpreted by data scientists and business analysts in a range of contexts. Making data accessible is their primary goal so businesses can use it to assess and improve their performance. This essay discusses the skills needed for data engineers to become effective.

First and foremost are the technical skills needed to become a data engineer. Data engineers should master SQL-based technologies such as PostgreSQL and MySQL for database management (Mason, R. T., 2018). Database management gives a comprehensive, clear perspective of how data is exchanged, ensuring that no unneeded duplicates exist. Furthermore, it enforces data security and privacy regulations to decrease data risk. Secondly, data engineers should be knowledgeable in programming languages such as Python and SQL as SQL is needed for data manipulation and faster data retrieval from databases while Python offers the same thing but with more functions by applying some computations while retrieving the data (Mason, R. T., 2018). Other than what was mentioned before, data engineers must familiarise themselves with data visualisation and modelling tools such as Tableau and PowerBI (Mason, R. T., 2018). Natural language and simple-to-read graphics are used by data modelling tools to accurately depict data objects and the connections among them. These solutions improve cooperation and enhance documentation and data quality.

Moving on is the soft skills required to become a data engineer. Data engineers are required to work with departments of different backgrounds such as data scientists, data analysts, and business analysts (Mikalef, P., Giannakos, M. N., Pappas, I. O., & Krogstie, J., 2018). They need to have good communication skills as they need to share and explain their results and findings (Rosenthal, S., & Chung, T. 2020). They are also required to cater to the other department's needs like providing processed and clean data. Other than that, they are required to be adaptable in applying new technologies to their daily tasks. New technologies like machine learning (ML) will provide more accurate data representation, data processing and data management. Lastly is having critical thinking skills. Critical thinking enables an objective analysis of business problems. It provides the ability to consider relevant questions when gathering requirements. Critical thinking will therefore help to narrow down the needed solution.

Individual Reflections

1. Iman Abadi

In the next four years, I will have become a software developer by first familiarising myself with the key aspects of the software development cycle. Only by understanding the key aspects will I then be able to set a goal and fulfil the requirements in developing a robust and high-quality system. After that, I will have mastered numerous technical skills such as programming skills from a wide range of languages such as C++ and JavaScript, data management skills using PostgreSQL and data manipulation skills from using both SQL and Python programming language. From there, I will also have developed my self-learning skills that will later contribute to my career as being adaptable to this ever-evolving technological world. Lastly, I will have improved my problem-solving skills, communication skills and positive work ethic by collaborating with people of different backgrounds to deliver the best result.

2. Muhammad Afiq Danial

In the next four years, my journey as a system developer will include my continuous learning, commitment, and passion to face every problem and will also provide a brilliant solution. To achieve this, I plan to make sure that I always actively participate in all the industrial talks or industrial visits to gain many experiences as much as possible before starting work for any company. Additionally, I aim to improve my problem-solving mindset effective communication skills and critical thinking in my development as a Data Engineer. Therefore, I aspire to contribute meaningfully to the field of system development and thrive in an ever-evolving technological landscape.

3. Muhammad Naim

After listening to the industry discussion, I feel like I have a clearer idea of how I want to work in the future and what needs to be done to get ready to become a professional data engineer, like learning Python and SQL. The desire to learn something new and explore the technology on your own comes next because, as you are aware, technology has advanced dramatically and, as a student of data engineering, you must pursue lifelong learning to ensure your relevance in the field. Finally, never give up on what you are currently doing, and make every effort to ensure your success in the end.

4. Ahmad Adib Zikri

my thoughts on this industrial talk, data students need to develop their skill to match the requirements of data engineers skills. On the other hand, we need to start to make a connection with people especially that work to company that in our list job. Not just gonna train and develop your communication skill but it will help you to know more about industry, conferences and workshops.

5. Muhammad Mukhritz Al Iman

The reflection that I get from this industrial talk is that I get to know what are the skill requirements that are needed to become the data engineer. Knowing the technical and soft skills emphasized in the industry can guide me in on how to growth my career in this field. Other than that, I get to know what are the Industry Trends. As for an example, I get to know the information about Cloud Alpha Edge and the focus on AI, ML, and 5G reflects current industry trends. Staying informed about these trends can help me to align my skills and knowledge with the evolving needs of the industry. Next, from this industrial talk, I need to start networking with people. I need to Connect with professionals in the industry, ask questions, and seek advice. Networking can open doors to potential mentorship or collaboration for me. Lastly, I think that I need to Keep an eye out for similar industry talks, conferences, or workshops. Continuous exposure to industry insights and networking opportunities will contribute to my overall professional growth.

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