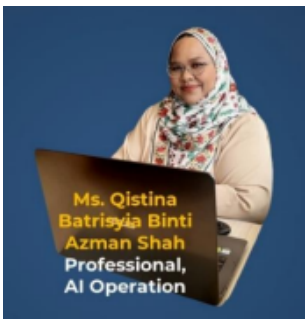
SEMESTER 1 2023/2024
SECP 1513-02
TECHNOLOGY AND INFORMATION SYSTEM

INDUSTRIAL TALK 2: SYSTEM DEVELOPMENT @ CREDENCE (TM SUBSIDIARY)

REPRESENTATIVE :



LECTURER:
DR ARYATI BINTI BAKRI

SUBMITTED BY:
AIN NURNABILA BINTI MOHD AZHAR (A23CS0207)
DAMIYA AINA BINTI BASIR ABD SHAMMAD (A23CS0220)
NURUL ADRIANA BINTI KAMAL JEFRI (A23SC0258)
SAFIYA NURSYAHADAH BINTI MASNOOR (A23CS0176)

12 January 2024

1. Description of the system development

The relationship between system development and analytics lies in the fact that systems are often constructed to store and process data, and analytics can be put in to extract insights from that data. Analytics define a systematic analysis of data to extract meaningful insights and also make informed decisions. It also involves examining large sets of data to recognize trends and patterns. The main element is data which consists of structured data and external data from open-sourced platforms such as MAMPU or government themselves and also social media platforms. Next is data collection in a data lake or database. After that, data transformation which actually comprehends Extract, Load, Transform (ELT). Furthermore, analytics and modeling. This step is for predictions purposes that leads to the next step, prediction and visualization. It helps in creating data in visualized forms. Last but not least are insights which include strategic, tactical and operational. Strategic and tactical is for CTO, CCO, CEO, etc, based on the stakeholders. Those are the fundamentals in evolving a system, specifically in analytics.

2. History of Credence

The speaker, Miss Qistina is a first batch Computer Science (Data Engineering) alumnus who had graduated with honors. She is currently working at a company named Credence. Credence, which is for the purposes of cloud and digital services, was launched by Telekom Malaysia Berhad (TM). Credence is led by Krish Datta who is an experienced technology leader shaping its new digital services arm. In another hand, Credence also provides faster time taken to understand local customer requirements. As one of the launch parts, Credence announced a few partnerships with AWS, Huawei and VMware in offering a wide range of enterprises.

3. Technology and tool use in Credence's system development

There are a few common technologies and tools used in system development on a regular basis. PostgreSQL, ClickHouse, and Druid are three database or OLAP softwares. PostgreSQL is the most popular of these three tools. Moving on to visualization tools, the session covers four of them: Tableau, Power BI, Metabase, and Superset. The most popular tools are Tableau and Power BI, but Metabase and Superset are open-source applications that are far less expensive. Both of

these tools are applied for low-budget customers. Airflow and Spark are the next two Extract, Load, Transform (ELT) tools. However, Airflow is the most popular among AI developers. Equally important, the programming languages utilized include SQL and Python, which are the most critical abilities to have, as well as another programming language that is traditionally used by data engineers for data pipelines. There are various software platforms used in system development, such as Microsoft Azure and AWS.

4. Skills required to be data engineer in the future

A solid foundation in fundamental technical abilities is important to success as a data engineer. Data engineers must first have degrees in computing and engineering, as well as experience in system design, project management, effective communication, database architecture, production code, data gathering, data warehousing, and data transformation. A good data engineer must also work hard to extract, clean, and integrate data, as well as be knowledgeable about transactional ACID databases and an increasing range of NoSQL databases. Because this function connects data science models and industrial systems, they must be well-versed in distributed computing and database challenges for consistency, scalability, and security.

5. Reflection

“Because system developers frequently confront complicated issues that necessitate innovative solutions, I intend to hone my problem-solving and critical thinking abilities. These solutions are required for system development to prosper.”(Nurnabila). “I will concentrate on the talents that the lecturer has often emphasized, such as programming, software development, and communication skills, given the importance of these in today's employment market.”(Damiya). “Over the next four years, I hope to gain more technical expertise through practical projects, on-going education, and good communication. To encourage a dynamic approach to software development, I plan to embrace new technologies and collaborate well with others.”(Safiya).“I will keep up with the newest trends, and breakthroughs in the fast-paced field of technology by studying to develop exceptional soft skills, teamwork, and problem-solving abilities. Also, I need to broaden my horizons by actively networking with peers and industry professionals.”(Adriana).

6. Conclusion

To summarize, system development is the full process of planning, building, or programming, and completing a product. This procedure is used to create a computer, hardware, or software. In anything done in the subject of computer science, there must be technologies and tools used to complete tasks that humans cannot perform and to reduce the time required to complete a task.

7. References

Shirani, A., 2022. Towards advanced data skills for information systems graduates.
Issues in Information Systems, *23*(3).

Chuprina, S., Alexandrov, V. and Alexandrov, N., 2016. Using ontology engineering methods to improve computer science and data science skills.
Procedia Computer Science, *80*, pp.1780-1790.

Tamir, M., Miller, S. and Gagliardi, A., 2015. The data engineer.
Available at SSRN 2762013.