UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING

SEMESTER 1, SESSION 2023/2024

SECP1513-TECHNOLOGY AND INFORMATION SYSTEM

SECTION 02

System Development @ Credence (TM Subsidiary)
ASSIGNMENT 3- REPORT on INDUSTRIES TALK

Group 11

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13 / 01 / 2024

Description of system development

System development is the process of creating and maintaining an information system to solve problems faced by a company or an organization. It consists of several phases including system analysis, system design, programming, testing, implementation, and maintenance. System analysis is where the data is collected and analyzed to identify the new requirements. According to Ms. Qistina, Credence collects structured data from the database, external data, and social media data. Then, the data are transformed and go through the analytics and modeling phase followed by the prediction and visualization phase. System design is the overall plan, and it is evaluated to select the best system that fits the requirements. Next, after the programming phase, where the software program code is generated, and the test phase, the old system is converted to the new one in the implementation phase. In the maintenance phase, the system is installed and reviewed for improvements.

History in Credence's system development

Credence, a wholly owned subsidiary of TM (Telekom Malaysia), is a platform-agnostic digital services company dedicated to facilitating low-risk digital transformations. Specializing in Cloud Advisory, Migration, SaaS, analytics, and application modernization, Credence boasts a unique end-to-end portfolio from infrastructure to insights. Its competitive edge lies in unbiased, brand-neutral recommendations, strategic partnerships with global tech leaders, and a deep understanding of the Malaysian B2B space. With an experienced team, the company aims to seamlessly guide enterprises and the public sector through effective technology utilization, offering competitive pricing without compromising quality through TM's existing global tech partnerships.

Technology and tool use in Credence's system development

Credence indicates that PostgreSQL is the most widely used database/OLAP. This is because it serves as a data lake, storing all the raw data. In the meantime, ClickHouse keeps all the data that is prepared for visualization, and as Ms. Qistina mentioned, ClickHouse extracts the data more quickly and it saves a lot of time. Next, PowerBI is a visualization tool that is most frequently utilized in Credence. However, they may use Superset and Metabase tools if the client or customer has a minimal budget for the project. The Airflow is the most often used for ETL/ELT. Since it includes built-in code, it can be scheduled to pull the data from all the data resources, and it can outrate the data collection and transfer to its type. Finally, SQL and Python are the most important programming languages. However, data engineers also need to be proficient in Bash syntax because it is utilized for data pipelines and data diagrams. Credence also works with cloud systems like VMware and Microsoft Assure.

Skills are required to be data engineer in the future

A data engineer is responsible for building data pipelines and transforming unprocessed data into formats that other data consumers may use. Writing in programming languages like SQL, Python, Java, and R is a must for becoming a data engineer. According to (Silva et al 2016), SQL is the primary language used to organize the data stored in database systems. In highly dispersed systems, it is one of the most effective query languages for handling large amounts of data. Next, proficiency in data modelling techniques such as Snowflakes and Power BI tools is a must for a data engineer. This method is necessary to carry out the effective data pipelines that serve as the foundation for data engineering initiatives. Furthermore, Hadoop can assist data engineers handle big data since it can handle and store enormous datasets in size and speed up the analysis of vast amounts of data (Bothma 2023). Many organizations saw good performance and growth using Hadoop deployment in specific industries, according to (Panwar et al 2020). Finally, data ingestion is the most crucial component of managing big data as it can monitor the source of data that is travelling from one source to another (Srishti n.d.). Among the tools that can be used to verify the data sources and guarantee the ingesting process are Apache Kafka and Wavefront.

Reflection from the talk (How you will be a system developer in the next four years?)

LAU YEE WEN: To excel as a system developer over the next four years, I intend to establish a solid foundation in computer science by mastering the programming language like Python, Java, or C++, as well as gaining knowledge of operating systems, networking, databases, and web technologies. In addition, I need to learn about cloud platforms such as AWS and implement DevOps practices. Furthermore, develop soft skills for effective collaboration, participate in real-world projects, and contribute to open source. Also, keep up with industry trends through blogs and conferences, commit to lifelong learning, and maintain a strong portfolio and resume to showcase my experience and accomplishments.

YASMIN: I need to be proficient in programming languages, especially the most widely used ones like Python, Java, C++, and others, to become an excellent system developer. The second thing I need to do is put the software development life cycle (SDLC) into practice, so that I can create a system that will make my job more precise and organized. Thirdly, to enhance the system that has already been developed, I need to stay current on the newest tools, technologies, and approaches. Finally, since this job frequently involves collaboration with team members, clients, and organizations, I need to improve my soft skills, which is communication skills.

NURUL ASYIKIN: To become a system developer in the next four years, I must constantly stay up to date with the latest advancements in tools, technology, and trends. In addition, I also need to improve my softs skills because these skills are essential for a system developer since they require excellent communication, teamwork, and problem-solving ability. Furthermore, as a computer science student, I need to continuously learn and be competent in programming languages such as Java, Python, C++, and others. Finally, I need to explore more about cloud platforms and also comprehend and be efficient in database management.

NABIL AFLAH BOO: I need to learn as much programming as possible during my studies, which include Java, C++, and other languages, as it's essential to becoming a system developer in the next four years. Furthermore, it is necessary that I possess expertise in managing data structures and algorithms, as these are crucial in organizing and storing information to ensure the seamless and effective functioning of software. In addition, given how quickly technology is evolving in this field, I must be somewhat knowledgeable with blockchain, cloud computing, and artificial intelligence (AI). Not to mention that soft skills are essential in any area as they ensure the success of initiatives. Critical thinking and communication abilities, for instance, enable me to make sure that I fully comprehend the job process.

ANIS SAFIYYA: I will be a system developer in the next four years by being eager to learn and explore something new. As technology keeps evolving each day, I must keep up with the most recent technological developments. Also, I need to ask more questions to someone experienced as it is the best way to learn. Moreover, I need to sharpen my soft skills to become an excellent employee, not only as a system developer. The soft skills include teamwork, communication skills, and critical thinking which helps in working productively and efficiently. Lastly, I must become fluent in programming languages, particularly the in-demand ones such as C++, Python, Java and so on.

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