UNIVERSITI TEKNOLOGI MALAYSIA

SECP1513 – Technology and Information System

Report: System Development at Credence (TM Subsidiary)

System Development, History, Technology and Tools in Credence

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DESCRIPTION OF SYSTEM DEVELOPMENT

In the context of system development, analytics is the key role for systematically analyzing large datasets, extracting meaningful insights, and guiding decision-making processes. It is applicable across various fields such as business, finance, healthcare, sports, and transportation.

The data that the analytics uses can be sourced from various outlets, including database, external data, and social media data. The analytics process has several key stages:

- **Data Collection:** Gather data from various sources including databases, external repositories, and social media.
- **Data Transformation:** Organize and structure the collected data, preparing it for further analysis.
- **Data Analytics and Modeling:** Utilize analytics tools to analyze the data, identify patterns and create models for insights.
- **Prediction and Visualization:** Generate predictions based on the analyzed data and present the findings through meaningful visualizations for easy understanding by managers and users.

Following these processes leads to the creation of three levels of insights – strategic, tactical, and operational.

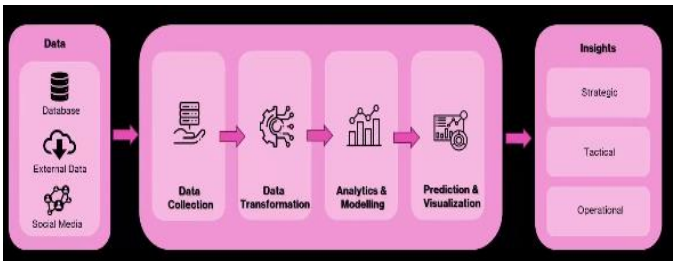


Fig 1. Data Analytics in System Development

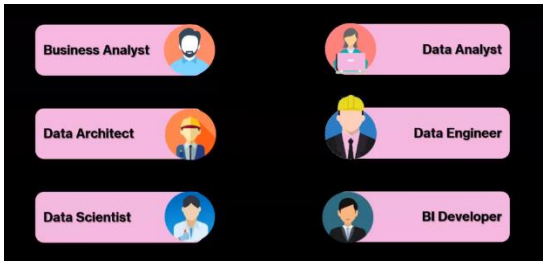
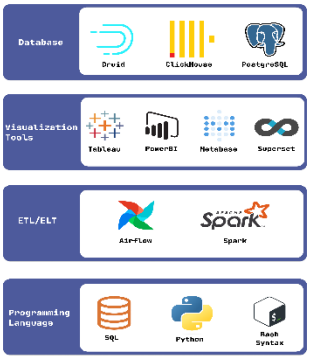


Fig 2. Career in Analytics

HISTORY

Founded in 2022 under Telekom Malaysia, Credence emerged as a pioneering force in system development, strategically focusing on cloud computing and analytics. The company's inception in Kuala Lumpur marked a decisive move by Telekom Malaysia to meet the increasing demand for comprehensive technological solutions. Credence swiftly positioned itself as a key player, providing a diverse spectrum of services, ranging from robust tech infrastructure to strategic cloud advisory and advanced analytics. This strategic evolution aligns with Credence's commitment to contributing to the digital transformation landscape, supporting enterprises and the public sector in adopting cutting-edge technologies.



TECHNOLOGY

Figure 1 represents the technology that company Credence uses to operate their business. ETL stands for extract, transform, load and ELT stands for extract, load, transform. These two are used for data-processing for analytics.

Fig 3. Technology stacks of Credence

TOOLS

1. Airflow – Airflow is an open-source software used for data engineering pipelines. In this context, pipeline means the process of storing and prioritizing computer instructions that a processor executes. It solves the company's complex workflows by using a scheduling system that allows them to set a time to extract data from available data sources.

2. ClickHouse – ClickHouse is another open-source software but focused on DBMS (database management system) for online analytical processing (OLAP) as mentioned by Ms. Qistina. It allows Credence to generate analytical reports using SQL queries in real-time. Moreover, it is mentioned that the data from ClickHouse is ready to be used for visualization.

REFLECTION

How will you be a system developer in the next four years?

Adam: In the next four years, I will spend most of my time trying to gain knowledge on current trends in system development. Such as famous programming languages, frameworks and methodologies widely used in the industry to stay relevant, making it easier for me to be employed as a system developer.

Tansim: In the next four years, my goal as a software engineering student is to specialize in system development. I plan to achieve this by staying updated on emerging technologies. Additionally, I will focus on building a strong foundation in core concepts such as data structures, algorithms and software designing. I aim to master modern development tools and frameworks, so that I can efficiently handle future projects. I believe through these strategies; I will be able to become a skilled and adaptable system developer.

Nadeeya: Over the next four years, my aim is to specialize as a system developer in game development. To achieve this, I plan to not only enhance my programming skills, with a focus on graphics and software design, but also diversify my skill set by exploring various languages and frameworks relevant to system development. Actively participating in hands-on projects, focusing on database management, security, and cloud computing, will be my priority to gain practical experience and showcase my versatility.

Hadi: In the upcoming four years, my aspiration is to transition into the role of a system developer through a multifaceted approach. I intend to immerse myself in comprehensive learning experiences, encompassing both theoretical knowledge and practical application. innovative continuous learning opportunities and embracing hands-on experiences, I am determined to evolve into a proficient system developer capable of contributing effectively to innovative technological solutions in the industry.