

# SYSTEM DEVELOPMENT

@ Credence (TM Subsidiary)

## INDUSTRY TALK OVERVIEW



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<https://www.sw.siemens.com/it-IT/resource-library/>

## DESCRIPTION

In the process of system development, the initial focus lies on sourcing normal data from databases, external data from open platforms such as Management Planning Unit (MAMPU), open data sources from the government. Additionally, we harness the invaluable insights embedded in social media data, crucial for analyzing customer patterns and product sentiment that profoundly impact businesses.

The following is a data collection process, where the information will be organized into databases or data lakes. Subsequently, the data will undergo processes of Extract, Load, Transform (ELT) and Extract, Transform, Load (ETL), which is a data transformation process. In the analytics and modeling process, the modeling of data is built for the project prediction. In the final phase, prediction and visualization converts complex data into comprehensible visual representations. This transformative step ensures that diverse departments can readily understand and derive meaningful insights from the information presented.

Comes to three distinct levels of insights – strategic, tactical, and operational. Strategic and tactical insights, basically relevant to C-level executives (CEO, CCO, CTO), with high-level information pivotal for overarching organizational strategies. On the other hand, operational insights provide more in-depth perspectives on day-to-day operation.

## HISTORY

From 2016 to 2020, Qistina Azman pursued a Bachelor of Computer Science with a specialization in data engineering at UTM, laying the foundation for her future in the data field. In 2019-2020, she became a social media data analyst at TMONE, bridging academic knowledge with practical experience. From 2020 to 2022, she honed her skills as a social media data analyst and data engineer at TMONE, showcasing proficiency in both analysis and technical aspects.

Qistina's journey into data and AI began with a fascination for the vast data landscape, leading her to courses in service administration. Despite challenges, she used setbacks as motivation to improve. The pivotal point was her UTM Industrial Training, where she engaged in real-world projects during her TM internship, delivering a notable social media project. This experience strengthened her technical abilities and provided insight into the dynamic world of social media.

The challenges served as catalysts for growth, with each hurdle strengthening Qistina's competence. Despite initial fears, she embraced the role of a data engineer, managing projects and timelines. Qistina's journey is a tapestry woven with determination, learning, and a relentless pursuit of improvement.



<https://www.techyon.it/articoli/data-analyst-chi-e-cosa-fa.html>

## TECHNOLOGY & TOOLS

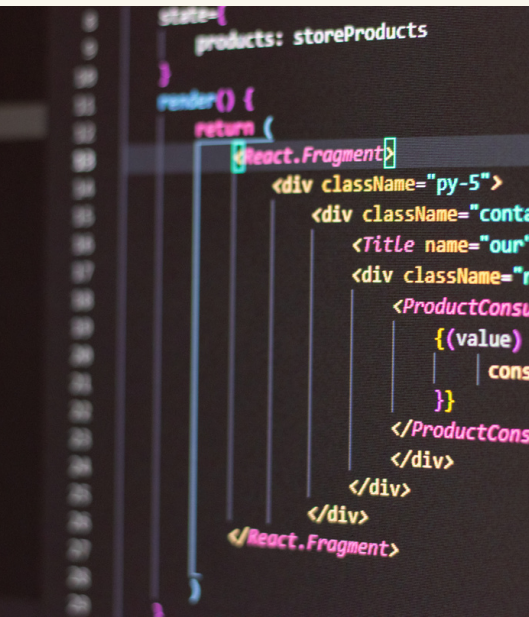
Credence's system development employs utility tools like PostgreSQL for general-purpose data storage, ClickHouse for analytical processing on large datasets and Druid for real-time insights, especially in event-driven analytics and time-series data. These tools manage substantial amounts of data, particularly in OLAP scenarios.

Apart from that, visualization tools used are Tableau, Power Business Intelligence (PowerBI), Metabase and Superset to create interactive dashboards. Tableau facilitates comprehensive data analysis and presentation. PowerBI ensures strong data connectivity with real-time or scheduled refreshes. Metabase offers a user-friendly interface for chart creation and data exploration. Superset provides open source data exploration and visualization capabilities.

Airflow and Spark collaborate in ETL and ELT tasks. Airflow manages scheduling, monitoring, and coordination of Spark tasks in the broader data processing workflow. Spark's distributed processing enhances scalability for large datasets.

Programming languages used in Credence are Structured Query Language (SQL), Python and Bash Syntax. SQL can manage and manipulate databases. Python is used for web development, data analysis, artificial intelligence, automation and so on. Bash is excellent for scripting and automating tasks.





## YAP JIA XIN

In the next four years, I will continue to enhance my learning and ability in order to fulfill the requirements of a system developer. I will stay abreast of the latest technological trends and developments, gaining in-depth knowledge of various system development technologies and tools, for instance, database, visualization tools, ETL, ELT, and different programming language. Additionally, I will try to engage in the development community, learning and practicing from the experiences of other system developers, and enhancing my team collaboration skills through collaborative projects. Overall, I aim to become a well-rounded system developer, preparing myself for future technological challenges.



<https://cmcglobel.com.vn/it-outsourcing/system-development-explained/>

## LING YU QIAN

In the next four years, I'm excited about my journey to become a proficient system developer. I'll focus on continuous learning, staying updated on emerging technologies, and developing both technical and soft skills. Networking and mentorship are crucial, emphasizing the importance of building connections and seeking guidance from experienced professionals. I recognize the dynamic tech landscape and commit to adaptability for a resilient foundation. With ambition, dedication, and a strategic mindset, I aim to navigate challenges and succeed as a proficient system developer. This journey combines ambition, learning, networking, and adaptability to shape a skilled and accomplished professional in the tech industry.

## NATASHA MAISARAH

In the context of a system developer, I aim to embody a mindset of continuous improvement and adaptability. Rather than viewing setbacks as hurdles, I commit to benefit from the challenges it offers toward improvement. I plan to actively seek opportunities for hands-on projects, internships, and collaborations that will deepen my understanding of system development in practical scenarios. Moreover, I recognize the importance of staying attuned to the evolving needs of users and businesses. Continuous feedback, user testing, and iterative development will be integral parts of my approach, ensuring that the systems I contribute to are not only technically robust but also aligned with the practical needs of end-users. Overall, by embracing a mindset of continuous learning, the pursuit of practical experiences and approaching setbacks with resilience, I aspire to evolve into a proficient and adaptable system developer over the next four years.



<https://www.zuar.com/blog/reverse-etl-vs-etl-vs-elt/>

## WONG JIA XUAN

As I embark on my journey to become a system developer over the next four years, I will be engrossed in gaining more knowledge to master key programming languages, such as C++, Python and Java, improving my skills in both front-end and back-end development. I plan to actively engage with undertaking real-world projects to apply and solidify my knowledge as building practical application can reinforce my skills. Apart from that, continuous learning is vital to stay updated on emerging technologies and industry trends as technology evolves rapidly nowadays.



Source: Canva