

# INDUSTRIAL TALK 1



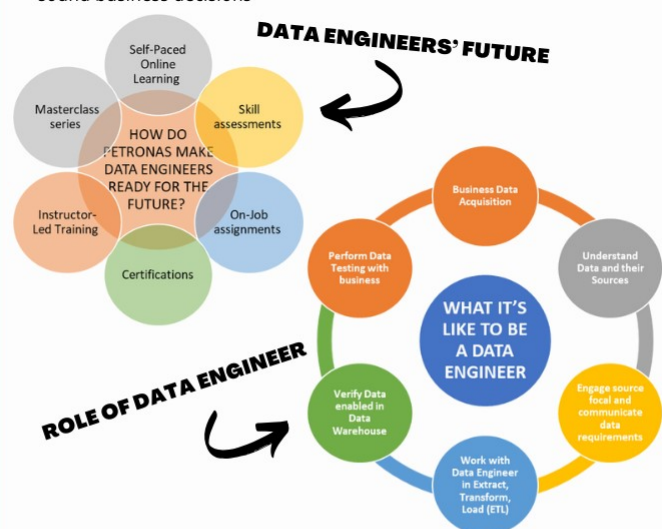
## DATA ENGINEERING

### WHAT IS DATA ENGINEERING?

- Data engineering is the practice designing and building systems for collecting, storing, and analyzing data at scale.

### DATA ENGINEERING ROLES

- Data Analyst**
  - Extract analyze, interpret and identifying pattern in data from various tables or reports.
- Data Engineer**
  - Provide data integration, data ETL/ELT between multiple data layers in a standardize manner.
- Data Architect**
  - Responsible in designing and quality assurance of data architecture
- Big Data Engineer**
  - Develop and build of data pipelines that work with large data sets.
- Data Quality Engineer**
  - Perform data validity, accuracy and integrity test across different component of data layers
- Data Modeler**
  - Translate business needs into data model and manages the life cycle of the data model from requirements to design to implementation to maintenance.
- Business Intelligence Engineer**
  - Turn data into crucial information and knowledge that can be used to make sound business decisions



## DATA SCIENTIST

### DATA SCIENTIST APPLICATION

- Automated email filtering
- Object Detection
- Text Prediction



### KEYS TO SUCCESS

### DATA SCIENTIST DEPARTMENT IN A GLANCE

- Members: 15 Experienced 20 Fully Trained 90 Young 20 Fresh
- Diversity: 30 education background 40%female, 60%male included 10% non Malaysian
- Knowledge and Skills: Math, Stats and Probability, Programming, Business Domain Knowledge
- Capability Development Programs: Data Science Academy, Digital Academy, PETRONAS learning centre

### WHAT'S THE CULTURAL LIKE WORKING AS DATA SCIENTIST?

- Empowering: data scientist in charge on their own capability
- Upskilling: multiple resources available to help data scientist upskill themselves
- Growth Mindset: exposed to new problems and continuously learn new things

## INTRODUCTION

We have a talk by Petronas Digital via Online. The talk was to finding talented student and introduce what the benefit they will give to fresh graduate when work for them. They give more detailed about Software Engineer, Data Engineer and Data Analystist what exact insight of their role would do in the job.

## PETRONAS DIGITAL

Aadrin Azry

(CEO of Petronas Digital)

Petronas digital are a unique entity which is part of the Petronas Company. Instrumental with every single journey with *oil* and *gas* see in ecosystem in business which supported by digital.

**Why digital?**

Digital solution will enable us more safer, cleaner and cheaper

**How to achieve?**

Seeking individuals who have potential to hold the positions of Software Engineer, Data Scientist and Data Engineer

## SOFTWARE ENGINEERING

### WHY SOFTWARE ENGINEERING?

- software development jobs anticipated to increase 22% from 2020-2030
- In the future, software development will be based on the need to be versatile and able to operate from anywhere
- software enginis expanding in the scope
- one of the highest paid profession

### WHAT IS SOFTWARE ENGINEERING

- a broad field that includes designing, developing, implementing and fixing software solutions that serve as a business asset
- needs to understand the fundamental of how computers work and how computing systems operate
- need to understand hardware and hardware architecture and also networking technology
- understand software fundamentals, why and how the code works and writes it
- use programming languages, frameworks, databases, servers and other technologies to turn an idea into a final product
- someone who applies computer science, engineering concepts to create software solutions
- create many interfaces such as desktop and web applications
- must know how to put all these together to make good product that is user-friendly

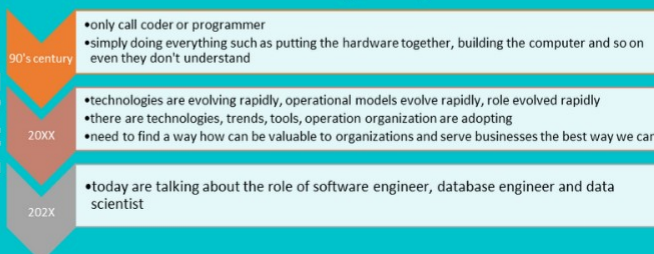
### EMERGING TECHNOLOGIES

- robotics
- wearables/mixed reality
- digital twin & IoT
- plant & enterprise applications

### SKILLS REQUIRED IN SOFTWARE ENGINEERING

- analytical thinking & problem solving skills
- programming skills
- productivity skills
- understanding of product/software development process (SDLC)
- life-long learning

## EVOLUTION OF SOFTWARE ENGINEERING



## SUMMARY

From this industrial talk, our group members know more about our future planning of what we need to work on and achieve it. We have many information that won't be able to find through internet or book, it's all the professional experience and suggestions. Besides, we need to enhance our skill if we want to work in the specific field in the future and also the technologies that requires to know as it will give us more oppotunities to work smoothly or even higher stage in future.

## GROUP MEMBERS' REFLECTIONS

Wong Ya Jing A24CS0211

From this industry talk, I had a deeper understanding of my future career. I was introduced to more specific job scope in this field. Thanks to this industry talk I had a more clearer vision and plan to achieve my goal.

Chia Thung Thung A24CS0060

The industry talk cleared my doubts about the job scope of being a software engineer and a data scientist. I learned how to prepare myself before entering the workplace. I also received professional advice from the expert with full of knowledge and experience which will help me perform well in my future career

Yeoh Keng Wei A24CS0316

This industry talk give me a clear goal about what I want to do in the future so that I need to work hard on it. I will listen to their advice and learn to become a success software engineer and make a better society with technologies.

Edwin Oo Ming Hao A24CS0245

The industry talk does a great job explaining the mix of skills needed for a career in data science, like curiosity, storytelling, math, and programming. It gives helpful advice for anyone wanting to succeed in this field.

Abbralyn Hoo Weng Yan A24CS0218

In this PETRONAS industry talk, I learned that Data Engineering involves designing and building systems to collect, store, and analyze data. I also gained insights into different roles, such as Data Analysts who analyze data, and Data Engineers who integrate data. PETRONAS supports engineers by providing training and hands-on projects to improve their skills. This talk helped me understand the importance of data engineering in business decisions and growth.