INDUSTRIAL REVOLUTION 4.0 : PAST, PRESENT, FUTURE

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INDUSTRIAL REVOLUTION

1 — **IR 1.0**
- 17-18 century.
- Focusing on manual labour carried out by individuals and assisted by working animals.
- Mechanical production (steam, water).

2 — **IR 2.0**
- 20th century.
- Mass production (electricity).
- Thomas Alpha Edison.
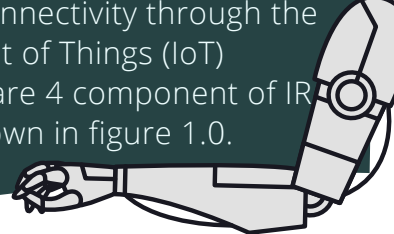- Mesin able to produce goods.

3 — **IR 3.0**
- Digital (IT, Electronic).
- Digital revolution.
- Computers and IT are essential.
- Steve Jobs introduced Apple machine.

4 — **IR 4.0**
- Present
- The era of Artificial Intelligent (AI).
- Interconnectivity through the Internet of Things (IoT)
- There are 4 component of IR 4.0 shown in figure 1.0.

INTRODUCTION

" Industry 4.0 refers to a new phase of the Industrial Revolution, concentrating heavily on interconnectivity, automation, machine learning and real-time data. There are four distinct industrial revolutions that have either been or continue to be encountered by the world today ".

source: Industrial talk 4.0 UTM
Figure 1.0
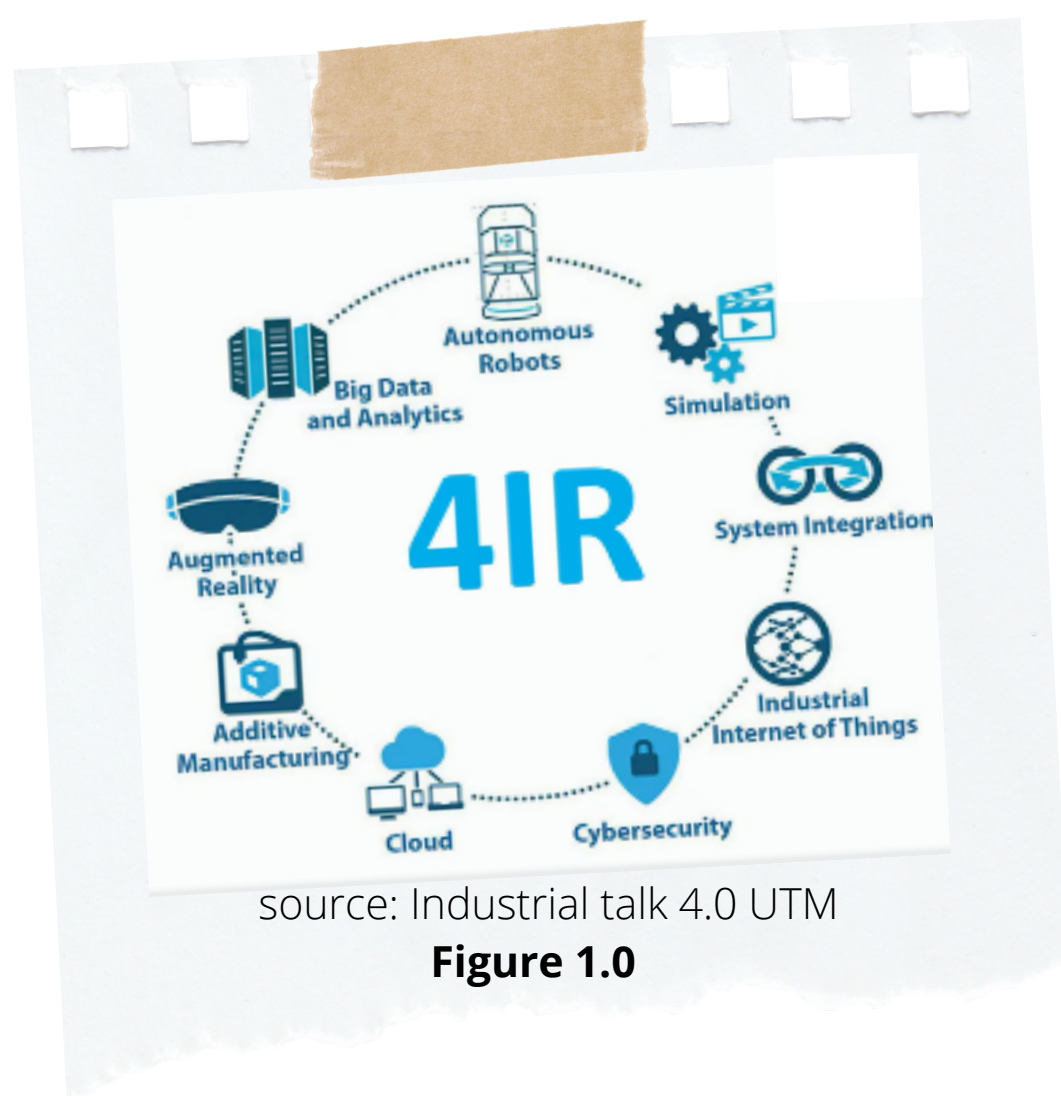
COMPONENT OF INDUSTRIAL 4.0

AUTONOMOUS ROBOT
- The ability to make their own decisions without the need for human control.
- This robot can see the environment, make decisions based on what is felt and, or have been programmed to recognize and then move movement or manipulation in that environment.
- This robot is commonly used for household furniture or NASA robots.
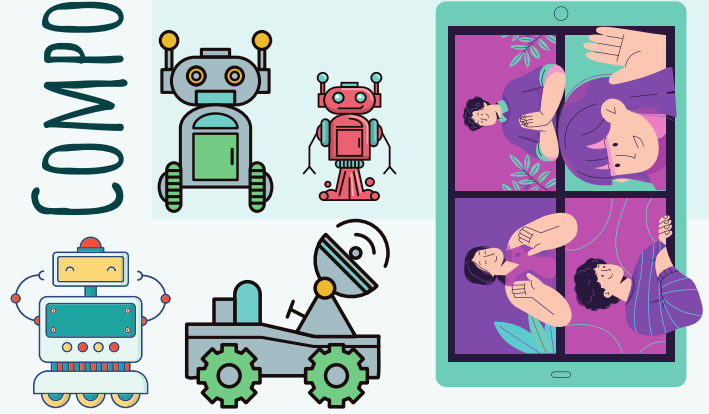
CLOUD OF COMPUTING
- **Public Cloud** is Cloud Computing provided for the general public; example : iCloud (Apple), Google Drive (android), Google Cloud ; TM: cloud alpha have a better scalar, and also flexible computing power.
- **Private Cloud.**
- **Hybrid Cloud**

INTERNET OF THINGS
- Really touched internet life
- a concept in which an object has the ability to transfer data across a network without the need for human-to-human or human-to-computer interaction.
- Examples: smart helmets for the oil and gas industry; TM. Samsung smart thing, smart watch.
- You have all the information to make the sense connected to the internet and enter the application, monitor, control, and use it from the inside for business and operational purposes.
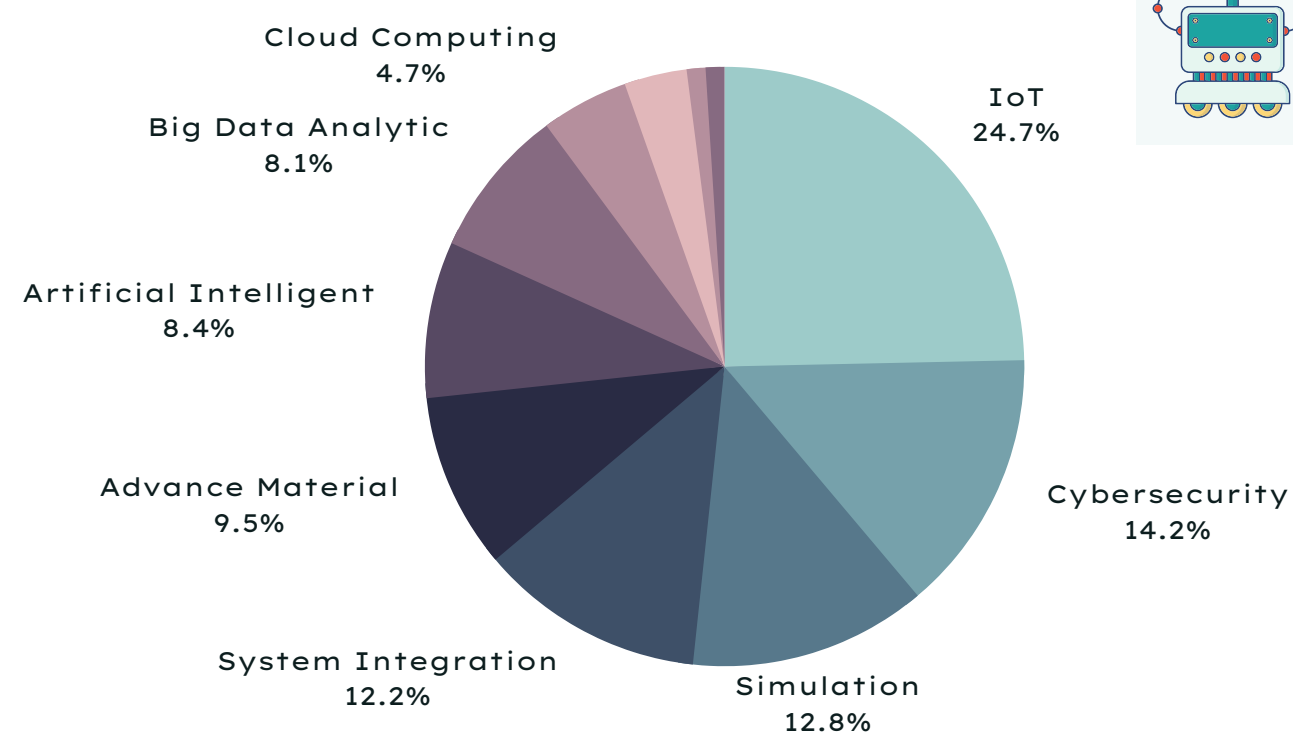
AUGMENTED REALITY
- Simple applications provide more information, the technology that a person experiences through 3D video and audio.
- Example : Pokémon GO, they use sensors and cameras to run this application.
- **BIG DATA ANALYTICS :** the way it works is, we look at the data, and actually have the big data, then we analyze the big data and keep looking for decisions.

BIG DATA ▸ ANALYTICS ▸ DECISIONS

source: Industrial talk 4.0 UTM
Figure 2.0

Pie chart data:
- IoT 24.7%
- Cloud Computing 4.7%
- Big Data Analytic 8.1%
- Artificial Intelligent 8.4%
- Advance Material 9.5%
- System Integration 12.2%
- Simulation 12.8%
- Cybersecurity 14.2%

Pie chart 1.0: Development of Malaysia Technology Companies 2020

EDUCATION 4.0

we participate in industry 4.0 and adapted from the 3.0 era

ELECTRIC CAR
The electric car is connected to Cloud. This is an example of industry 4.0. full autonomous. and full of clouds. This means we can choose to drive or not.

COMMERS 4.0
SHOPPING. MORE SUITABLE FOR VISITORS. SHOPEE AND LAZADA.

SMART HOME
With a combination of architecture and connection to the internet. we can remotely. as long as we are connected to the internet.

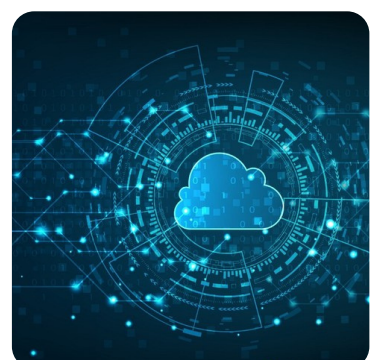**HOW MUCH OUR LIVE HAVE CHANGE FOR THE PAST FEW YEARS??**
- Example: Uber, Grab, Shoppe, Food Panda, Amazon, Conveys, all digital applications. Google: email, storage services, analytics from etc.
- We can choose and do whatever we want. creates many business opportunities

Digital Infrastructure provided by country

Iskandar Puteri Data Centre, Johor
source: TM ONE

source: eweek.com

INTERNET of THINGS
source: mythinkpositive.com

DIGITAL 2020 MALAYSIA
source: datareportal.com

OPINION AND VIEWS

Industrial Revolution 4.0 is a digital era that is completely automatic and controlled via the internet. In our opinion, this is an era that has a huge impact on our lives, coupled with the Covid-19 pandemic outbreak, which can be said to smoothen this industry. This phenomenon is not the first time this has happened, but it has already been the fourth time. So that adaptation is a mandatory thing that must be done so as not to be crushed by technology which will continue to develop.

IR 4.0 is a change in the industrial sector, in which to produce goods, use machines as driving and processing power. Where in its development is the Internet of Things (IoT) concept where a physical device or machine is connected to the internet network, Big Data, and Augmented Reality. Then Cyber Security, Artificial Intelligence, Addictive Manufacturing, Integrated Systems, and Cloud Computing.

Reflections

Innovation helps in human life because it will provide people with opportunities to improve their lives, they are provided with new technologies, products and services that can help people. For example, a smart watch that connects to the Internet and has multiple uses.

After attending the talk, we aware that it is important for the new generation to be always updated on the growth of the industry. As a student, we should notice that the revolution of the industry has given a huge impact on the working environment and culture. Hence, we should be well prepared to cope with the challenging future.

THE FUTURE OF WORK
- Invisible Analytics
- Artificial Intelligent (AI)
- Virtual Reality (VR)
- Wearables
- Drones
- 3D Printing
- Smart Home
- Video Consumption
- Connected Car
- Mobile Payments