









UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SECP1513 - Sec 04
TECHNOLOGY AND INFORMATION SYSTEM
ASSIGNMENT 01

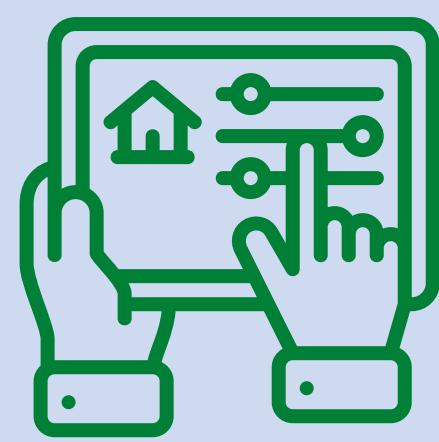
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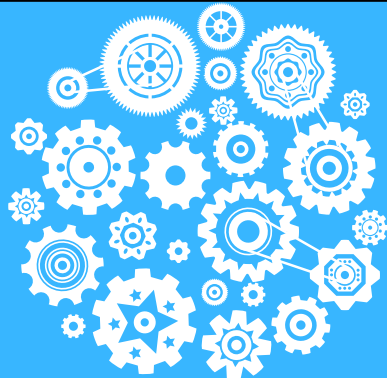
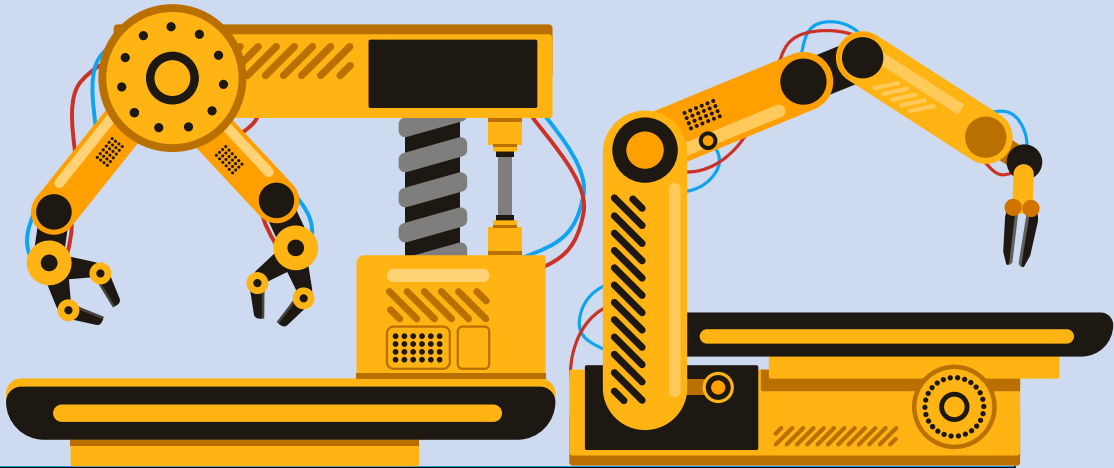
4th Industrial Revolution:Autonomous Robots



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Introduction:Autonomous Robots in 4IR

Since the dawn of Industrial Revolution,the demand of readily-produced items has been increasing with the increase of population of mankind while freeing people from menial labour.With the demand growing and not enough manpower on sight,this have gave birth to one of mankind's most practical and most controversial creations:Autonomous Robots.

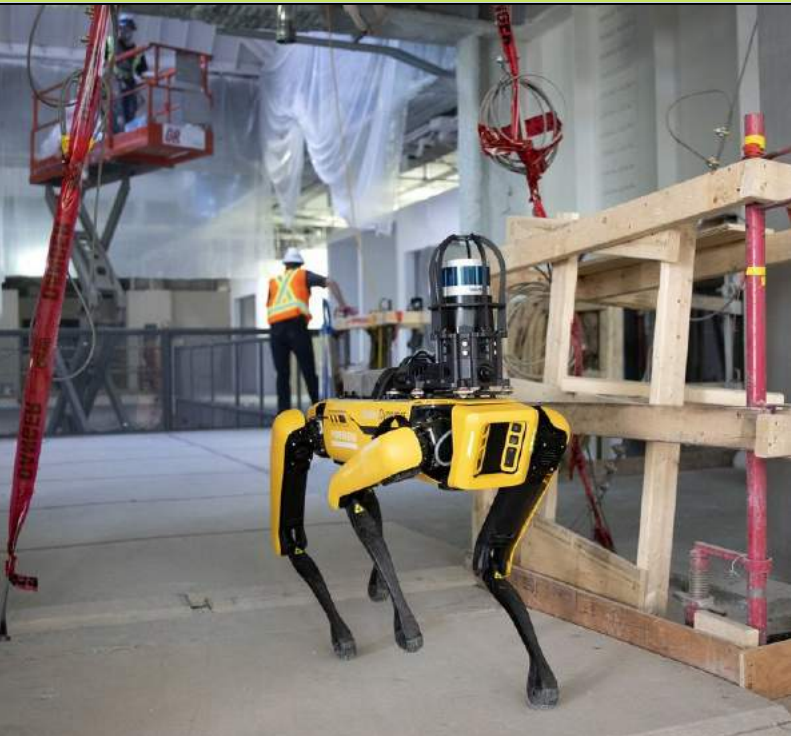
GENERAL DESCRIPTION

- Autonomous robots,in essence,is an extension of robotics.But it is geared more to creating robots that can operate and finish given tasks without the need of constant human supervision.
- These robots tend to have the support of Artificial Intelligence in the form of Machine Learning and Neural Network,this gives them the ability to quickly pick up their surroundings and learn how to perform a task with maximum efficiency.
- Some of them have mobility support such as wheels,rollers,limbs and others with the support of advanced sensors and software systems to navigate itself around,allowing them to be able to operate in larger spaces and conduct tasks that needs constant movement on significant distances.
- Originally,Autonomous robots have been used extensively on jobs that are considered as menial and repetitive such as assembling parts and carrying items.They are most likely to be seen in manufacturing and warehouse sector.
- However,recently there is a demand of autonomous robots in the service sector due to COVID-19 pandemic concerns such as sanitary reasons and workforce shortage due to lockdowns.As a result,a few autonomous robots cna be seen taking jobs as waiters,service man,barristas and even to a limited degree,cooks.



A Boon...?

- Supporters of Autonomous Robots have cited that the inclusion of robotic work force within workplaces can reduce work time of employees,giving them more likely to take on full time tasks (which is effective reduced thanks to automation),increasing work productivity while ensuring work safety.
- Despite its high initial cost for preparation (machinery,training and installation),automation allows cutting costs while retaining the high quality of products.This means that the cost saved in later time will offset the initial cost.



...Or Bane?

- Because not all people actually have the knowledge of robotics and engineering,there is a significant concern of mass unemployment due to low-skill jobs being taken over,resulting in lost of means of livelihood.
- Some pointed out that autonomous robots may be so advanced that it could tackle "traditional" and "handmade" tasks.Resulting in some debates whether robotics can achieve the same sentimentality of handmade products.



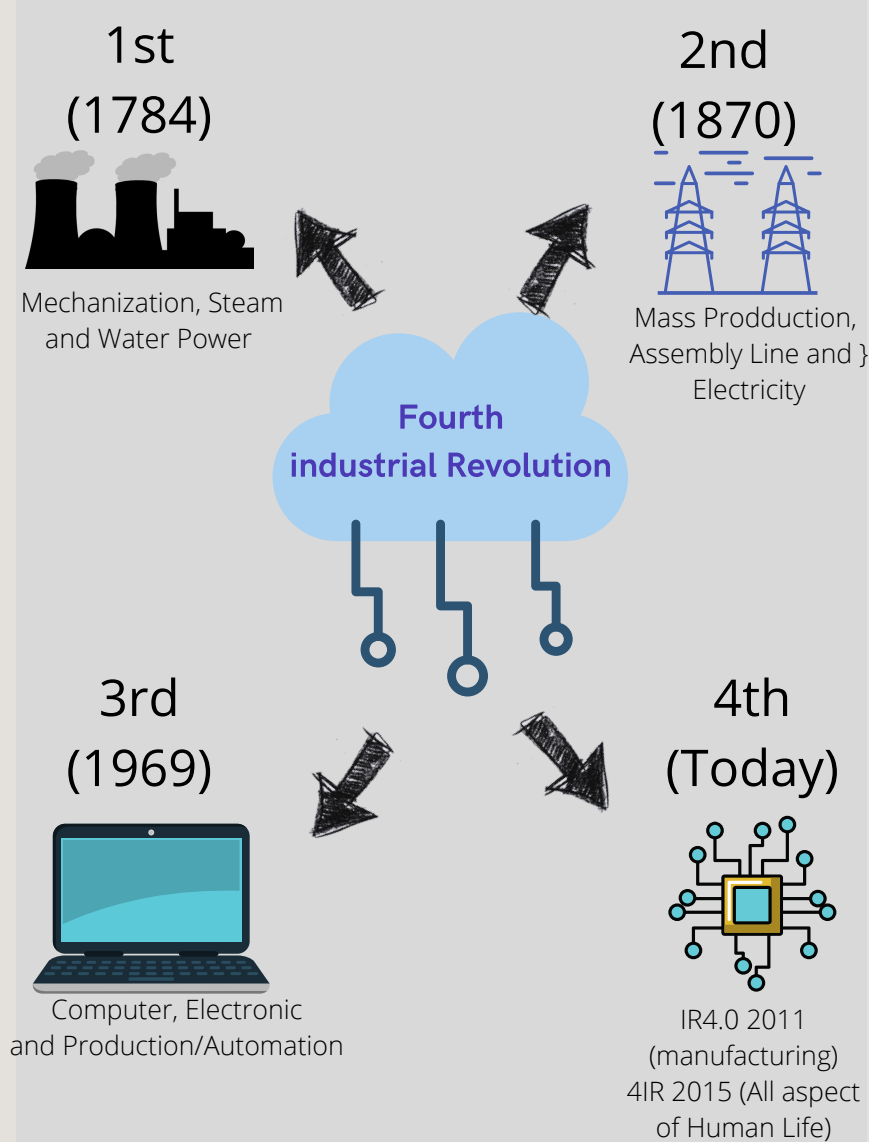
Reflection

The birth of Autonomous Robots have brought change to the society in many ways and began popularizing in many sectors.While there are those who are applauding its birth,there also those who are skeptical of it.However,it also the thing that inspired people to innovate new ideas or technology,contributing to the overall development of mankind.Therefore, students and graduates shall be trained to utilize the benefits and take the lead in the revolution.People also need to learn more about this emerging technology and adapt so that they can join the wave of technological revolution without being "abandoned" by the ever-changing era of now.



Telekom Malaysia Berhad or TM is the Malaysia's leading integrated telco which provide the national connectivity and digital infrastructure in our country. TM is the one who drives the Digital Nation agenda for Malaysia by connecting Malaysians with enriched digital lifestyle and protecting nation's sovereignty from intruder outside and inside of Malaysia. To adapt with the evolution of 4IR, TM developed the Network Operations Centre or TM NOC that gives visibility of network incidents and security threats by operating 24 hours daily to ensure the service to customer.

1 INTRODUCTION TO 4IR



2 HOW DOES TM SUPPORT 4IR?

- TM has a data centres which are used to keep all the informations of end users. Data centres are located in a prime location, Cyberjaya and Klang Valley. It provides a high maintenance managed services for the society
- TM One by TM is a virtual private cloud services enabling to secure all of the files and informations given by clients.
- Internet of Things(IoT) created by TM also helps our society to stay connected and enabling us to exchange informations by using the connected devices



3 PERKS OF DIGITAL TRANSFORMATION

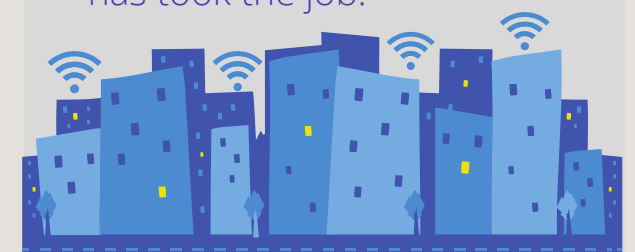


- Improves efficiency of business process that could save time, money and resources.
- Better experience in terms of gaming for a high end graphics.
- Businesses become more flexible by choosing the right software for the company and integrate the software properly.

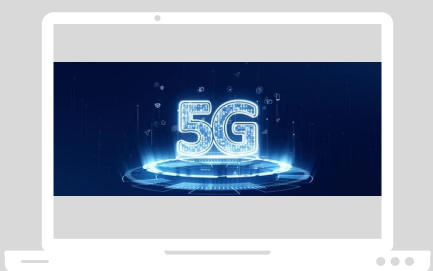
4 SMART CITY



- Technology to respond and cover the needs of citizen for a better lifestyle.
- Increase the optimization of an organisation towards a successful company.
- Smart Water Integrated Management System(SWIMS) is one of the technologies that equipped with smart meter,sensors,mobility and apps.
- 5G are implemented in a smart city for faster connectivity
- Saving cost for an organization or company as technologies has took the job.

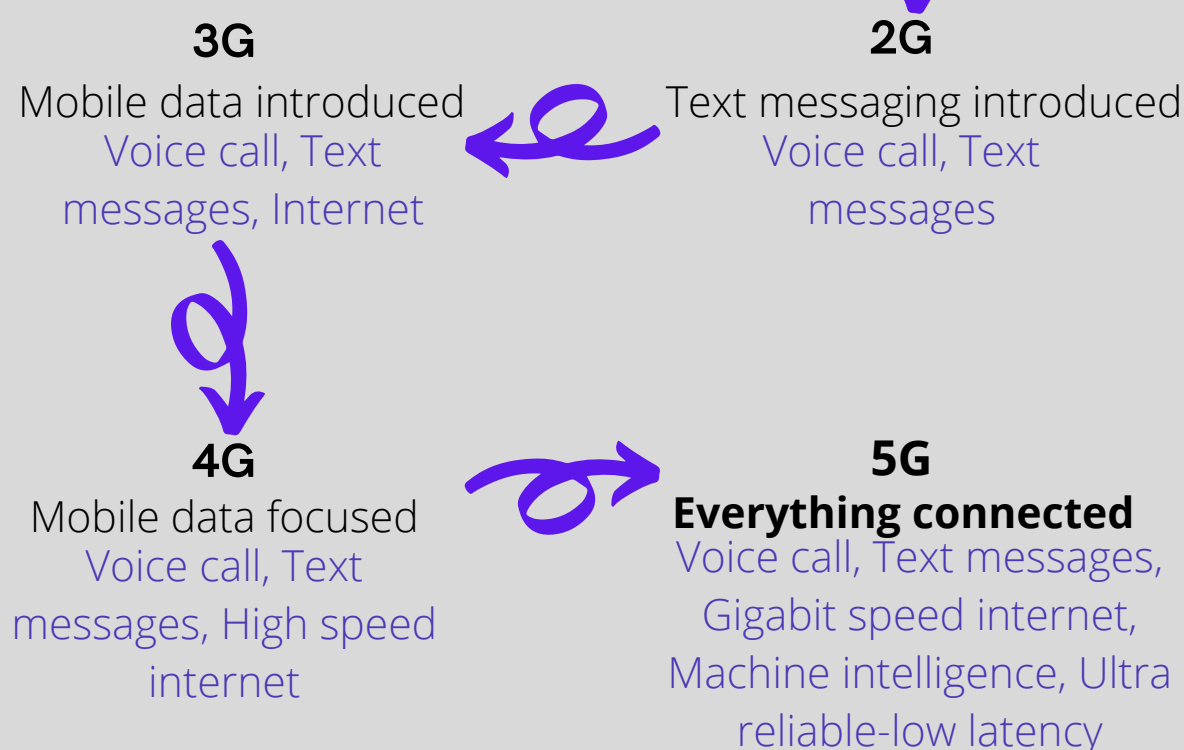
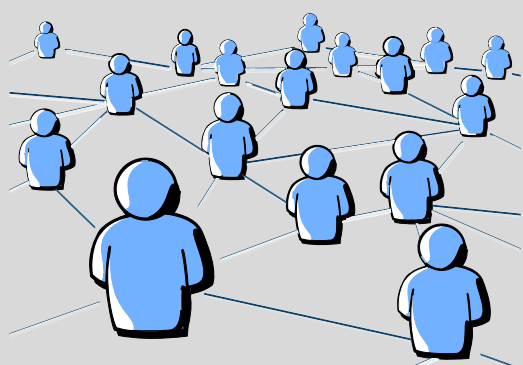


5



EVOLUTION OF MOBILE NETWORK

- Fifth generation of mobile network evolution
- Adopted by more than 170 country
- Things can be done at much faster rate
- Higher throughput per connection and wide range
- Opens up a wide range of use cases such as Massive Machine Type Communication(mMTC),Enhanced Mobile Broadband(eMBB) and Ultra-reliable and low latency coommunication(uRLLC)
- Use cases of 5G network :
 - 1.Smart Agriculture
 - 2.UNESCO 8K virtual reality
 - 3.Smart Vehicle System



6 REFLECTION

I believe that 4IR has brought so much to our lives as a community to ease our work in daily life. As an example, 5G has brought so many advantages in healthcare which enables long-range operation with its low latency communication. Everyone no matter who they are has to take part and play their own role in this evolution of technologies for a better civilization.



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Introduction

- We often hear about cyber-attacks in the news. From security breaches to ransomware, these types of events are a growing problem. And it's not just online either—in-person hacks can be a serious concern, too. Just how bad is this situation? And what can you do to protect yourself and your company from attacks?
- Digital Forensics and Incident Response (DFIR) is a field within cybersecurity that focuses on the identification, investigation, and remediation of cyberattacks.



What is Cyberattack

- A cyber attack is an attempt to disable computers, steal data, or use a breached computer system to launch additional attacks. Cybercriminals use different methods to launch a cyber attack that includes malware, phishing, ransomware, man-in-the-middle attack, or other methods

Why Cyberattack happen

- Cyber attacks are usually either criminally or politically motivated. Adversaries can be either a private person, state actor or a criminal organization. But the main answer to why these attacks even happen, is to look at the goals behind each of them

Importance of Incident Responders in Cyberattacks

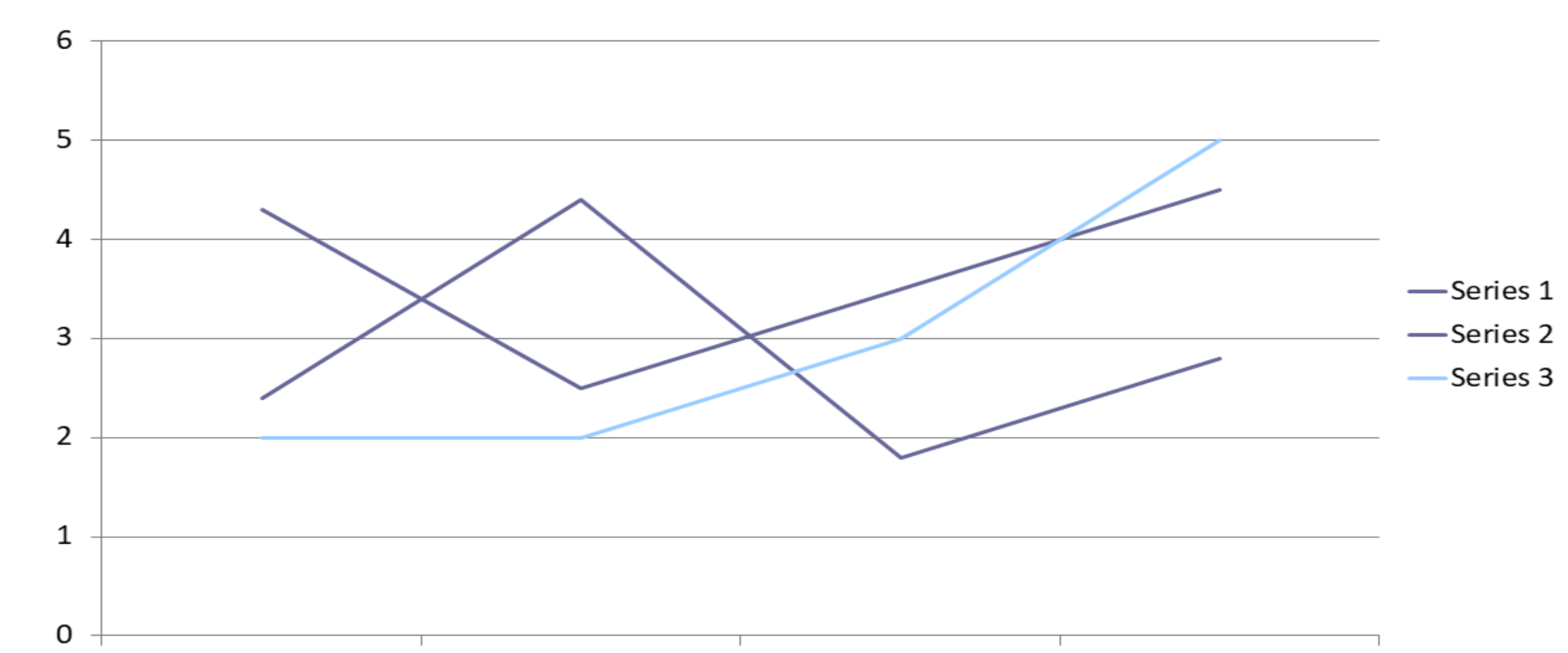
- Therefore, an incident response (IR) plan helps an organization mitigate risk, contain a threat, and recover from an attack. The plan is typically made up of policies and procedures to enable in-house cyber experts to identify, control and respond to a breach or attack
- The faster your organization can detect and respond to a data breach or even security incidents

Importance of Digital Forensics in Cyberattacks

- Digital forensics can help identify what was stolen, and help trace whether the information was copied or distributed
- Identifying the cause and possible intent of a cyber attack
- Safeguarding digital evidence used in the attack before it becomes obsolete
- increasing security hygiene, retracing hacker steps, and finding hacker tools

Cyberattacks Today

- Identifying the cause and possible intent of a cyber attack Safeguarding digital evidence used in the attack before it becomes obsolete increasing security hygiene, retracing hacker steps, and finding hacker tools Searching for data access/exfiltration
- The most popular vulnerabilities for attackers this quarter were breaches in the Microsoft Exchange Server software (Proxy Logon) and the outdated file sharing program Accellion FTA



Summary

- Digital Forensics and Incident Response (DFIR) is a field within cybersecurity that focuses on the identification, investigation, and remediation of cyberattacks. ... Incident Response: The overarching process that an organization will follow in order to prepare for, detect, contain, and recover from a data breach

Reflection

- Digital forensics and incident response is an important part of business and law enforcement operations. It is a philosophy supported by today's advanced technology to offer a comprehensive solution for IT security professionals who seek to provide fully secure coverage of a corporation's internal systems.
- For this reason, many businesses are turning to DFIR to ensure the security of their most vulnerable and critical platform technology, like cloud services, devices and more. In the following article, we'll review DFIR, including:

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