

Task 3

Cyber Security foundations

In this task, I got to take an online course on cyber security. This introduced me to a new platform where I can learn with the help of online courses.

The Introduction to Cyber Security free online course is ideal for anyone interested in the field. You can build foundations in one of the most demanded fields.

In today's online world, everyone is susceptible to cyber-attacks due to which learning cybersecurity becomes essential to identify the various cyber threats, vulnerabilities, and attacks on systems, networks, or data. The need for cybersecurity professionals has never been higher than it is today. Through this Introduction to Cyber Security free online course, I got to discover the world of cybersecurity and its impact on the modern world. I was introduced to the foundations of Computer Security such as the Design of Secure Systems, Goals, critical concepts of Cybersecurity, widespread attacks, Buffer Overflow, Cryptography, Types of Cryptography, Designing a security system, case studies, etc. in this free Cyber Security course.

Cyber Security, also known as information security, is the process of protecting computer systems and networks from disclosing organizations' and individuals' data, theft, or damage to hardware, software, and electronic data. I got to know better about Cyber Security. Identify threats, protect the information, detect attacks and intrusions, respond to attacks and intrusions, recover database and information security and rebuild defence against intrusions. These are the essential concepts of cyber security. I also learned about various prerequisites to learning cyber security.

The core motivation for hackers is to steal the passwords, bank details, and customer details for ransom or sell data to competitors or on the dark web. This course helped me to understand different types of attacks with examples. I also learnt about ransomware attacks. A botnet attack is a sweeping cyberattack by a malware-infected system. These are controlled remotely, turning compromised devices into zombies for botnet controllers. I learned the measures to take care to avoid such malware. Phishing attacks involve communicating data to the customers pretending to be a legal source while they are not. This is usually done via mail to steal sensitive data like credit card details or install malware in the user's system.

Cryptography is the science of securing sensitive and confidential data by encrypting them. The encrypted data can only be accessed by those who have access to the key for decrypting it. It is hard, but not impossible, to break into the security key anyway. Secret key cryptography, hash function, and public-key cryptography are the

three broadly divided types of cryptography. I got an in-depth understanding of these types.

Symmetric key cryptography is also known as symmetric encryption since the same key is used for both encryption and decryption functions. I learned the procedure and now I can explain symmetric key cryptography in a detailed manner. When the data is transferred over the internet, it has to remain the same when delivered without alterations like additions and deletions to the message. This is msg integrity.

Public-key cryptography is also known as asymmetric cryptography, where a pair of keys are used to encrypt and decrypt, respectively. Generating these keys depends on the algorithms used. I learned about Security goals & Its Implementations - Authentication & authorisation, and confidentiality.

Design a Security System -Data is secured based on its size, usability, access, and availability. Every system has an algorithm designed to secure it. This course helped me to understand the security system's design and demonstrate an example. A buffer overflow occurs when the data overrun the buffer boundary or overwrites the adjacent memory location. Every system is susceptible to vulnerability. Buffer overflow is one of them.

Whatsapp attack is one of the commonly suspected cyber attacks. It gave a demonstration of the cyber attack with the WhatsApp attack case study.

Through this course, I got to learn in-depth about cyber security, a field in which I always had a great interest. Even though, some things were new, with the help of this course I got to understand them easily without any difficulty.

Below is the link to my course completion certificate:

https://olympus1.mygreatlearning.com/course_certificate/TCACEJTJ

