Session: Real World Cybersecurity Concepts

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Learning Objectives:

- Define Cybersecurity and give an example of real life uses.

- Explain the CIA triad.

- Give examples of real life cybersecurity use cases.

Quote
A boat, beneath a sunny sky
Lingering onward dreamily
In an evening of July ------
Children three that nestle near,
Eager eye and willing ear, ...
- Lewis Carroll, Through the Looking Glass

Can you guess the secret in the Quote?
1. What is Cybersecurity?

cybersecurity - “the state of being protected against the criminal use of electronic data, or the measures taken to achieve this.” It can include the following functions:

(A) Cryptography.
(B) Threat and vulnerability assessment, including risk management.
(C) Web security.
(D) Cybersecurity training, education, and management.
(E) Computer forensics.

2. The CIA triad

(1) cybersecurity = security of cyberspace.

(2) cyberspace = information systems and networks – the Internet!

(1) + (2) = (3) ⇒ Therefore, cybersecurity = security over the Internet with the goal of protecting resources.

(4) Security can be defined in terms of the Confidentiality, Integrity, and Availability (CIA) triad.

(3) + (4) = (5) ⇒ Therefore, cybersecurity = availability, integrity and confidentiality over the Internet in the face of attacks with the goal of protecting resources.
3. The Cast of Characters

**Alice and Bob are the good guys**

**Trudy is the bad “guy” →**

4. Categorize these WhatsApp security breaches using the CIA triad

- **In a major data breach, numbers of WhatsApp web users found on Google search 15 Jan 2021**
  - The WhatsApp on Desktop (Web) application allegedly exposes personal mobile numbers on Google Search.

- **WhatsApp Fined $266 Million Over Data Transparency Breaches 2 Sept 2021**
  - Facebook Inc.’s WhatsApp was ordered to pay a 225 million-euro ($266 million) penalty for failing to be transparent about how it handled personal information.

- **WhatsApp users urged to update app after detecting serious security breach 9 Dec 2021**
  - The security breach involves unauthorized access to computer data, applications, networks or devices and it results in information being accessed without authorization.

- **WhatsApp users are being warned to change their passwords after a recent security breach 10 Jan 2022**
  - Users could have been victims of “phishing” attack, which aims to steal information such as passwords by providing a fake login page.
5. Safe Practices

- **Use stronger passwords (Password Generator) with a password manager**
  - A password manager app, like Dashlane, will solve this problem by managing, organizing, and encrypting all of your passwords and helping you keep tabs on the strength of those passwords.

- **Use Two-Factor Authentication**
  - 2FA requires adding an additional element for validation, like your fingerprint, a PIN number, a security question, or a hardware device.
  - Use an authenticator app, like Authy or Google Authenticator.

- **Keep your personal data offline**
  - Women are already cautious about what they post online, but a service called Safe Shepherd proactively removes your personal information from the Internet and marketing databases, preventing spam, unwanted marketing calls, identity theft, and cyberstalking.

- **Turn your phone into your bodyguard**
  - If you've even felt afraid to walk around alone at night or somewhere unfamiliar, an app called Noonlight (formerly known as SafeTreK) is useful.
  - It's a mobile app that will call the police and send them to your exact location in the event of an emergency.
  - You could also try apps like Guardly, Circle of 6, MyForce, Panic Guard or other panic button apps.

- **Look for the green lock icon**
  - Before online shopping check if the site address shows it is https or carries an image of a lock.
  - Be careful at public Wi-Fi hotspots. Use authentic websites.

**Summary**

In this lesson, you should have learned how to:

- Define Cybersecurity
- Explain the components of the CIA triad
- Identify cybersecurity safe practices