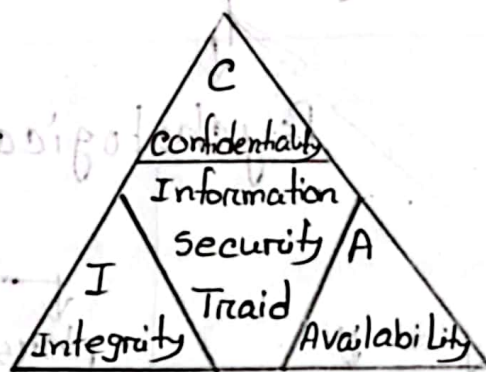


Assignment 1Security triad CIA:

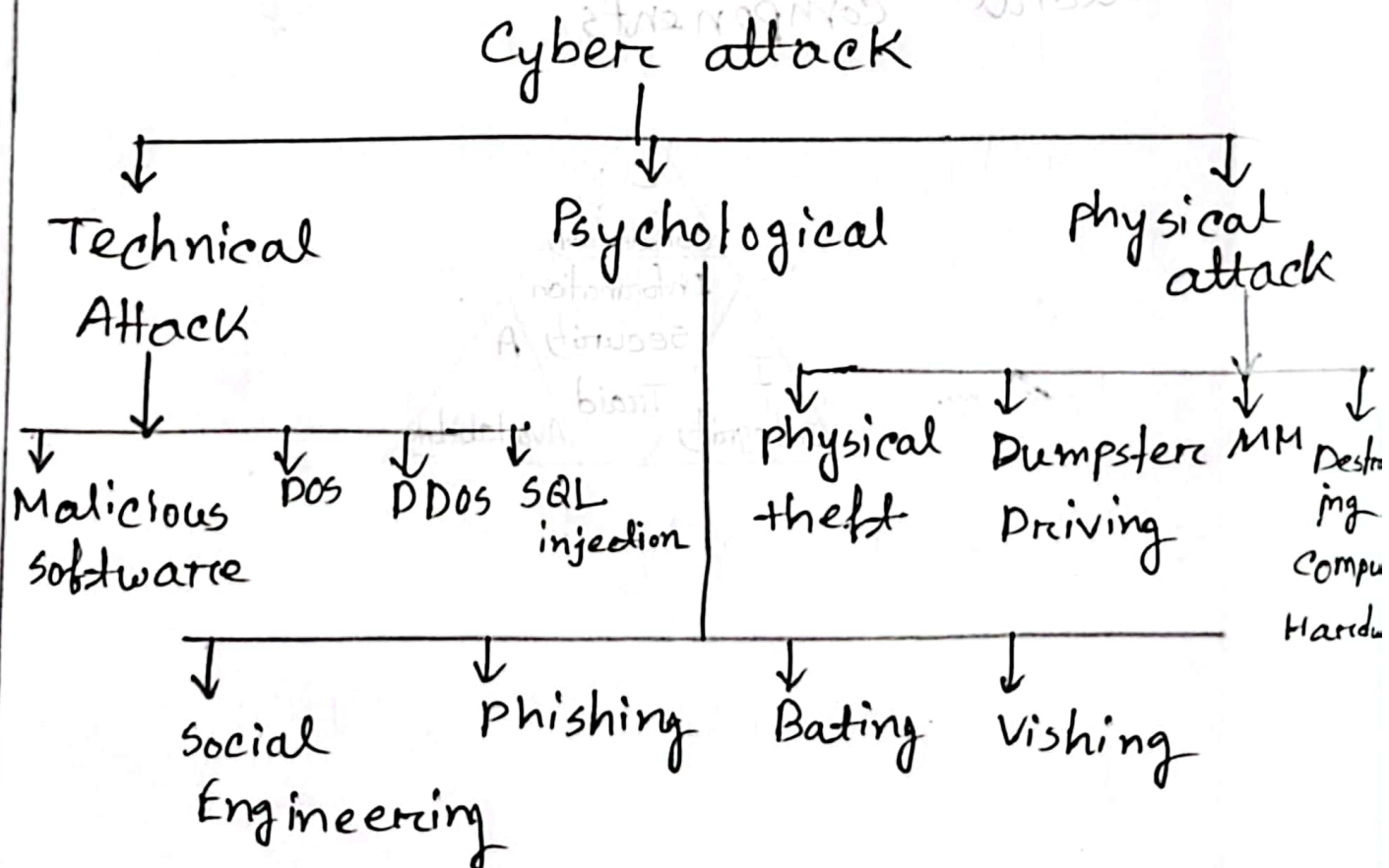
The confidentiality, Integrity and Availability is a guiding model in information security. A comprehensive information security strategy includes policies and security controls that minimize threats to these three crucial components.



Definition of cyber attack:

A cyberattack occurs when there is an unauthorized action against computer infrastructure that compromises the confidentiality, integrity or availability of its content

Types of cyber attack:



Symmetric encryption:

Symmetric encryption is a type of cryptography where the same key is used for both encryption and decryption of data.

Key points:

- Single key is for both encryption and decryption.
- faster and less complex than asymmetric encryption.
- suitable for large amount of data

Main challenge: securely sharing the key between parties.

example: AES, DES, 3DES, Blowfish, Twofish.

Asymmetric encryption:

Asymmetric encryption is a cryptography method that uses two different keys a public key and private key for encryption and decryption.

- The public key is shared openly.
- The private key is kept secret.

How it works:

→ Sender encrypts the plain text using the receiver's public key.

→ Only the receiver's private key can decrypt the ciphertext.

Example: RSA, ECC, DSA

Steganography:

Steganography is the practice of hiding secret information within an ordinary, non-secret file or message to avoid detection. The goal is to conceal the existence of the information.

Key point:

- Unlike encryption, steganography hides the existence of the message itself.
- Commonly used with images, audio files, videos or text.
- If done properly, no one will even know there is a hidden message.

How it works:

→ A secret message is embedded inside other file using special techniques.

→ The file looks normal to a casual observer.

Key point:

→ Unlike encryption, steganography hides the existence of the message itself.

→ Commonly used with images, audio files, videos or text.

→ It done properly, no one will know there is a hidden message.