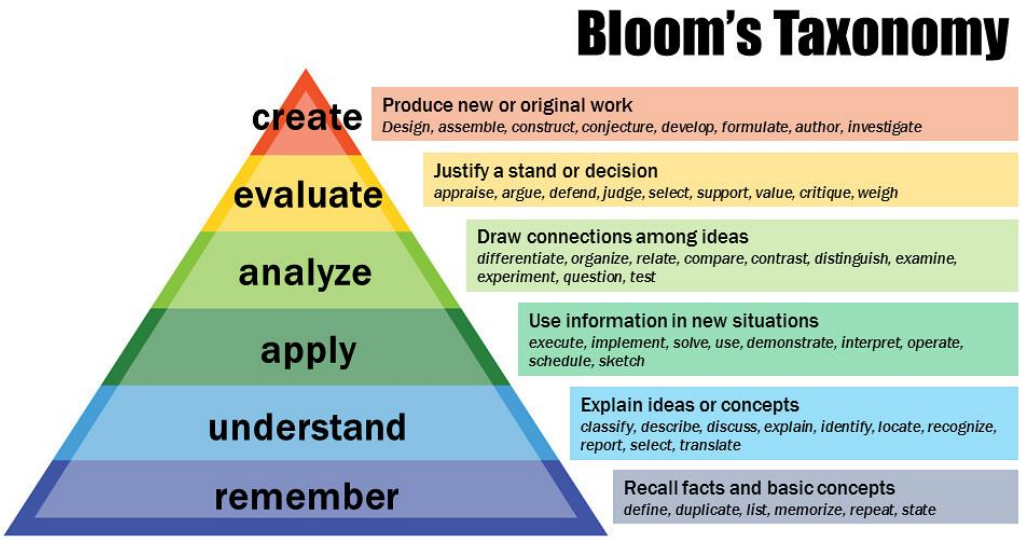
Bloom's Taxonomy

(Just ignore this heading)



The following four are base

Data

Raw facts, figures or symbols yani aisi info jis ka **meaning na ho** or is py koi processing na hui ho.

Data refers to raw facts, figures, or symbols that have no inherent meaning by themselves.

Information

Information is what we get after processing data.

Information is **derived from data** by organizing, structuring, or interpreting it to make it meaningful. It adds context, relevance, and purpose to data, enabling understanding. Information answers the questions of who, what, where, and when.

Knowledge

Knowledge results from synthesizing and analyzing information to gain understanding, insights, or expertise. It involves the application of information, experience, and expertise to solve problems or make decisions. It also helps in understanding the relationship between pieces of information.

Wisdom

It involves the ability to apply knowledge and experience wisely to make sound decisions, solve complex problems, and navigate life effectively.

Parents are often wise even if they have less knowledge.

What is Security?

Types of Security

Physical Security

Personal Security

Operations Security

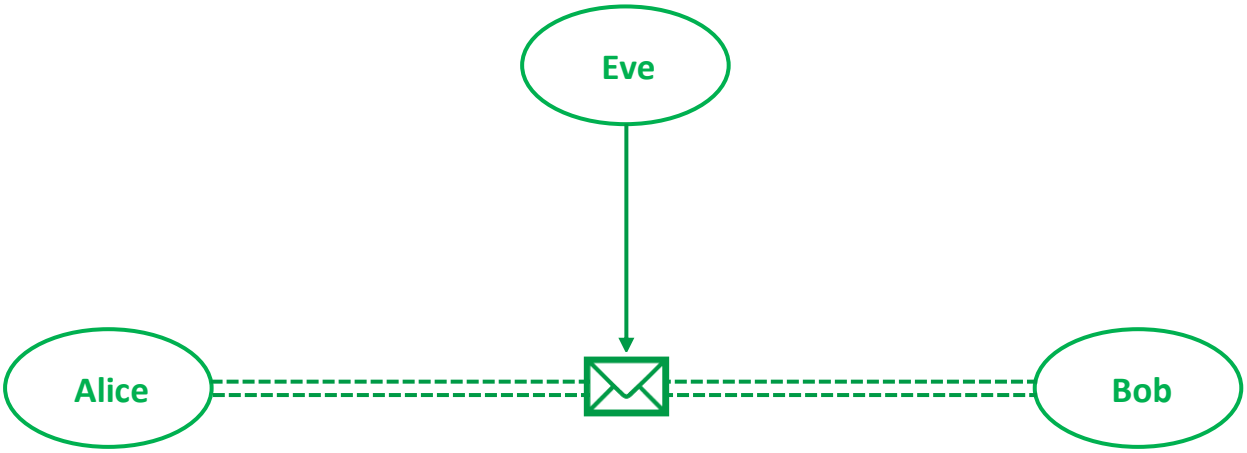
Communications Security

Network Security

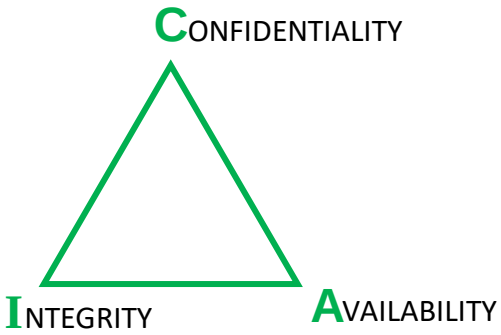
1. Secure
2. Monitor
3. Test
4. Improve

Information Security

Alice and Bob Model



CIA (imp question)



Confidentiality
To achieve this, data should be encrypted

Integrity
Should not change

Should tell where it is coming from

Availability
It should be available 24/7

NSTISSC Model (McCumbers Cube)
Stands for: National Security Telecommunications and Information Systems Security Committee.

Goals
- What do you want to achieve?
- CIA

Information States
- TSP

Safe guards / Security Measures
- HTP

TSP
It stands for Transmission, Storage and Processing

- Transmission
    - Data going from one place to another
    - It achieves C and I in CIA
- Processing Data
    - Data analysis
- Storage
    - Hardware
    - Mapping Techniques (memory storage algorithms)
        - Associative mapping
        - Direct mapping
        - Double associative mapping

HTP
It stands for Human Factor, Technology and Policies

- Human Factor
    - Human Security
    - Personal Security
    - Security of people containing important information. It is very important.
- Technology
    - Latest technology should be used

- Policy
    - No compromise on policies

Malware and Cyber Attacks

Types:

1) **Phishing**
2) **SQL Injection**
3) **Denial of Service (DOS)**
4) **Distributed Denial of Service (DDOS)**
5) **Man-in-middle Attack**
6) **Ransomware**
7) **Spyware**
8) **Adware**
9) **Virus**

Types of Hackers

1) **White Hat Hacker**
2) **Black Hat Hacker**
3) **Grey Hat Hacker**
4) **Red Hat Hacker**

Encryption

Cryptography

Terms you need to know

1) **Encryption**
2) **Decryption**
3) **Plain Text/ message**
4) **Cipher**
5) **Key**

Define Algorithms

- General Purpose
- Efficient (high efficiency)
- Finite (kum instructions hon)
- Definite (instructions ka size kum ho)

- Correct
- It should have an input
- It should have an output

Digital Signature