Need for Security

Basic Concepts

1. What & how we should protect the various things on the computer, computer network & the biggest network of them all, the Internet.

→ 1. Two typical examples of such security mechanisms are as follows;

→ provide a User identification & password to every User & use the information to authenticate a User.

→ Encode information stored in the database in some fashion, so that it is not visible to Users who do not have the right permission.

Security Attacks

1. **Automating Attacks** :-
   The speed of computers make several attacks worthwhile for miscreants.
2. **Privacy concerns** :-
   - Collecting information about people & later (mis) using it is turning out to be a huge problem these days. So, called data mining applications gathering pieces & results all pieces of details about individuals.
3. **Distance does not Matter** :-
   Thieves would rather attack banks, because

banks had money.. because of digitisation from inside computers & moves done by using computer N/ws.

1.3. Security Approaches

1.3.1 Trusted Systems :-

→ A Trusted System is a computer System that can be trusted to a Specified extend to enforce a Specified Security policy.

→ Trusted system were initially of primary interest to the military.

→ They have spanned across various areas, most prominently in the banking & financial community but the concept never caught on.

often refered to as Reference Monitor

1.3.2 Security Models :-

1. NO Security
In this, the approach could be a decision to implement no security at all.
2. Security through Obscurity
A System is secure simply because nobody knows about its existence & contents. Many ways an attacker can come to know about it
3. Host Security
Security for each host is enforced individually.
4. Network security
Host Security is tough to achieve as Organizations

1.3.3 Security Management practices

- Affordability → how much money & effort does this security implementation cost.
- functionality → what is the mechanism & providing security.
- cultural issues → Does the policy complement the people's expectations, working style & beliefs.
- Legality → Does the policy meet the legal requirements.

CNSS Model

Committee on National Security Systems is a three-dimensional security model which has now become a standard security model for many of the currently operating information systems.

The CNSS Model has 3 goals of security

1. Confidentiality
2. Integrity
3. Availability

1. Confidentiality → Specifies that only the sender & the intended recipient(s) should be able to access the contents of a message. Gets compromised if an unauthorized person is able to access a message.