Introduction to cybersecurity:

Cybersecurity:
Protecting your computer systems, network and data from unauthorized access ,digital attack and from any damage. The main goal is to ensure **Confidentiality**, **Integrity**, and **Availability** (the **CIA Triad**).

What is CIA TRIAD?
CIA is an information security model which serves as a security framework to form security policies and systems to make sure organization data is being secured, giving no access to unauthorized data and also accessible to authorized users.

The pillars of **CIA Triad**:
- **Confidentiality:** only authorized users can access specific data or assets.
  Example: A company encrypts customer credit card numbers so even if hackers steal the database, they can't read the card details.

- **Integrity:** data is verifiably correct, authentic and reliable. One way to verify data is cryptography, it is used to transform data.
  Example: A hospital uses digital signatures to verify that a patient's medical record hasn't been altered before a doctor reviews it.

- **Availability:** data is accessible to those who are authorized.
  Example: An online banking service maintains backup servers and power supplies so customers can access their accounts even during a hardware failure.

Why is the CIA TRIAD IS IMPORTANT?
- **Safeguards Critical Information and Services**
   By protecting confidentiality, maintaining data integrity, and ensuring availability, the CIA Triad keeps essential data and digital services secure from unauthorized access, tampering, or disruption.

- **Maintains Data Trustworthiness**
   Integrity ensures that information remains accurate, consistent, and reliable throughout its lifecycle. This reliability is crucial for making informed business decisions, meeting compliance requirements, and sustaining customer trust.

- **Ensures Business Continuity**
   Prioritizing availability allows authorized users to access systems and data whenever needed, enabling organizations to maintain productivity and operations. Strong availability measures also help businesses recover quickly from disruptions such as ransomware attacks, hardware failures, or power outages.