**1.What is Encryption?**

Encryption converts data into an unreadable format, ensuring only those with the appropriate decryption key can access it. It’s crucial for securing data during transfer (e.g., over the internet) and storage (e.g., on servers).

## 2.What is Hashing?

Hashing is a one-way process that converts input data into a fixed-length string (hash). It’s commonly used to verify data integrity, detect tampering, and securely store passwords. Unlike encryption, hashes cannot be reversed to reveal the original data.

**3.When hashing and encryption are used?**

1. **Encryption:** Use to secure data in transit (e.g., HTTPS connections and emails or web traffic with SSL/TLS.). Encryption ensures only authorized users with decryption keys can access the data.
2. **Hashing:** Use to verify data integrity or store passwords securely. For example, hash uploaded files to detect modifications or securely store user passwords in databases.