

UNIT-IV

DATA SECURITY

What is Data Security?

Data security refers to the process of protecting data from unauthorized access and data corruption throughout its lifecycle. Data security includes data encryption, hashing, tokenization, and key management practices that protect data across all applications and platforms.

Dimensions of E-Security:

Confidentiality

Integrity

Availability

Authenticity

Non-Repudiability

Encryption

Auditability

E security Requirements:

Security is an essential part of any transaction that takes place over the internet. Customers will lose his/her faith in e-business if its security is compromised. Following are the essential requirements for safe e-payments/transactions –

- **Confidentiality** – Information should not be accessible to an unauthorized person. It should not be intercepted during the transmission.

- **Integrity** – Information should not be altered during its transmission over the network.
- **Availability** – Information should be available wherever and whenever required within a time limit specified.
- **Authenticity** – There should be a mechanism to authenticate a user before giving him/her an access to the required information.
- **Non-Repudiability** – It is the protection against the denial of order or denial of payment. Once a sender sends a message, the sender should not be able to deny sending the message. Similarly, the recipient of message should not be able to deny the receipt.
- **Encryption** – Information should be encrypted and decrypted only by an authorized user.
- **Auditability** – Data should be recorded in such a way that it can be audited for integrity requirements.

Secure Electronic Transaction:

It is a secure protocol developed by MasterCard and Visa in collaboration. Theoretically, it is the best security protocol. It has the following components –

- **Card Holder's Digital Wallet Software** – Digital Wallet allows the card holder to make secure purchases online via point and click interface.
- **Merchant Software** – This software helps merchants to communicate with potential customers and financial institutions in a secure manner.

- **Payment Gateway Server Software** – Payment gateway provides automatic and standard payment process. It supports the process for merchant's certificate request.
- **Certificate Authority Software** – This software is used by financial institutions to issue digital certificates to card holders and merchants, and to enable them to register their account agreements for secure electronic commerce.

Disposable credit number:

A **virtual credit card** is a **temporary credit card number** that you can use while shopping online. These **disposable card numbers** are designed to protect your **actual account number** from falling into the wrong hands.

Virtual credit cards can protect you from having your credit card information stolen in a data breach or through an unsecure connection. Here's what you need to know about virtual credit cards and how to use one.

How Do Virtual Credit Cards Work?

If your credit card issuer provides a virtual credit card feature, you can request one through your online account with the bank. When you do, you'll get a randomly generated card number, expiration date and security code that are tied to your actual account.

When you use the virtual credit card to check out online, the transaction will show up on your account statement as if you had used your regular card information.

Can Virtual Credit Cards Help Protect Your Identity?

Disposable card numbers can add an additional level of security in an age when retailer data breaches seem to be commonplace. If a hacker manages to get a hold of your virtual credit card information, you can simply cancel that virtual card without needing to close your entire account and get a new one.

In some cases, a virtual credit card may be designed for one use only, so if a fraudster steals the information in a data breach or through an unsecure internet connection, it'll no longer be valid.

Of course, if your credit card issuer doesn't give you the option to use a virtual credit card, that doesn't mean you're completely exposed. Thanks to the Fair Credit Billing Act, consumers are never liable for more than \$50 in unauthorized charges if their credit card is lost or stolen—and many credit card issuers offer zero-liability fraud protection on unauthorized charges.

But even if you're not on the hook for fraudulent purchases, if your credit card is lost, stolen or otherwise compromised, you'll still need to go through the dispute process, cancel your card and have a new one sent to you. With a virtual credit card, you can avoid that whole process.