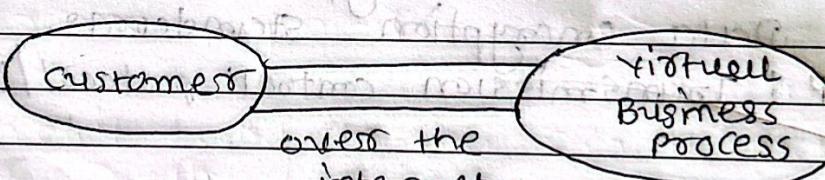


D. 19-01-24

## E-Payment and Security in details:

- Electronic payment systems are online payment system used to transfer money over the internet.
- E-payment system is a way of making transaction paying for goods and services threw an electronic medium without the use of check or cash. It also called electronic payment system or online payment system.



Customer

Virtual  
Business  
Process

over the  
internet

### 1) Credit card :-

- Involves use of credit card or debit card to make online point to set businesses.

### 2) Digital wallet :-

- Digital wallet is use to store payment ~~information~~ into securely of a transaction such as the example like Apple Pay, QR-Pay, PayPal.

### 3) Bank Transfer :-

→ Money transfer within Banks.

### 4) Cryptocurrency :-

→ digital or virtual currency like bitcoin. operates on decentralized blockchain technology.

### 5) Mobile Payment :-

→ mobile payment use on securely money transfer and use of M-Pay.

### Features of E-Payment :-

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→ Protecting customers from merchant scheme by keeping their credit card numbers unknown to merchant.

→ allowing people without credit card to connect in online transaction.

→ Protecting confidentials.

→ In some cases, providing secrets of customers.

→ Electronic Payment system must be provided :-

- ① Privacy
- ② Integrity
- ③ Authentication
- ④ Non repudiation

### Types of E-Payment :-

#### (1) Credit card :-

→ credit card use as a payment using one of most common mode of electronic payment.

→ credit card is a small plastic card with a unique number attached with an account.

→ It has also a magnetic strip embedded in it which is used to read credit card via card readers.

→ When a customer purchases products via credit card, issuer banks ~~not~~ pay on behalf of the customers and customers has a certain time period after which can pay the credit card bill.

→ Credit card usually has monthly payment cycle.

→ Following in the credit card system used there:

- (1) Card holder → customer
- (2) The Merchant → seller of product who can accept credit card payment.
- (3) The card issuer bank : card holder's bank
- (4) The acquire bank : -The merchant's bank
- (5) The card brand :- i.e. Rupay, visu, mastercard.

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### (2) Debit card :-

→ Debit card is a small plastic card with a unique number mapped with bank and account number. It requires to have bank account before getting a debit card.

→ The major difference between a debit card and a credit card is that in case of payment through. In this like that debit card the amount of gets deduct from the card's bank account immediately and there should be sufficient balance.

→ In the bank account from the transaction to be completed.

→ In case of the credit card transaction there

is no such in the banking transaction.

→ Difference between debit card and credit card :-

→ Debit card is free, the customer can carry cash and cheques.

→ Even merchant accepts a debit card process having restriction on the amount can be withdraw in a day using a debit cards help to the customer to keep his/her account.

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### (3) Smart Card :-

→ smart card is again similar to a credit card or debit card in but it has small microprocessor chip embedded in it.

→ It has the capacity to store customer's card related and/or personnel information.

→ Smart card also used to store money and the amount gets deduct after every transaction.

→ Smart card can only be access using

a PIN that every customers are assigned with.

→ Smart cards are selected as they store information ~~are~~ in encrypted format and are less expensive provides faster processing.

→ A Mondex and visa cards are example of smart cards.

### E-Money :

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→ E-money means electronic money transaction to situation where payment is done over the network and the amount get transferred from one financial body to another financial body without any involvement of a middleman.

→ E-money transactions are faster, convenient and saves a lot of time.

→ online payments done via credit cards, debit card or smart card are example of e-money transaction.

→ Another payment popular examples - e-cash. both customer and merchant have to sign with the bank or company issuing e-cash.

# Electronic Fund Transfer

= = =  
- EFT

① 27-01-2024

- Electronic fund transfer is a very popular method to transfer money from one bank account to another bank account.
- Account can be same or different bank. fund transfer can be done using ATM or using a computer/mobile.
- Nowadays, internet based EFT is getting popular. In this case, a customer use a website produced by the bank log in the bank website and registers another bank account.
- customer bank transfer the amount to another account if it is the same bank otherwise the transfer request to ~~go~~ forward to ACH (Automated Clearing house).
- Once the amount is transferred to other customer's account the customer is notified of fund transfer by bank.

## → E-wallet

→ E-wallet is a type of electronic card which is used for transaction made online through a computer or a smart phone.

## \* what is E-check & How it works?

→ The electronic version of representation of a paper check is called E-cheque.

→ Electronic cheques are made of electronic payment.

→ E-cheques work the same as paper cheque and are a legally binding promise to pay.

→ Electronic cheque address the electronic needs the millions of businesses which today exchange traditional paper cheque with the other vendors, consumer and government.

## Working of E-cheque:

→ E-cheque works the same way as a paper cheque and are legally binding promise to pay. the payment system using digitally signed XML documents that provides mechanism to authenticate parties to a transaction.

→ E-check are define using Financial service markup language which allows for addition & deletion of documents, blocks, sign, co-sign and attachment etc.

## Advantages of e-check:

→ It seems that consumer would gain from having e-cheque available to make payments for online purchases.

→ It would be impossible for an e-check to bounce.

→ Banks can do paperless efficient transaction.

## Disadvantages:

→ The problem comes when your merchant doesn't accept e-cheque.

→ The others problem would be when you ~~can't~~ have more than one sign.

(\*) E-cash  
= =

→ The electronic representation of cash is known as electronic cash.

→ It is a digital money product that provides a ~~weight~~ way to process products and services without resorting to paper or coin currency.

\* Process of E-cash:

→ Digital cash is also used for E-money, Emoney, E-cash, digital money, digital currency, cyber currency in which person can securely pay for goods & services.

→ Electronically without involving a bank to mediate the transaction.

Advantages of E-cash:

→ quickly money transfer.

→ Transfer money from distance

→ Time saving.

→ Secure money transfer.

Disadvantages of E-commerce:

→ Poor network makes errors.

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\* Explain Payment Gateway in details:

→ Payment gateway is an online payment processing technology which helps businesses to accept credit cards and electronic cheques.

→ In other words, payment gateways are main the middle which are located between e-commerce platform and clients.

→ A payment gateway allows to few steps:

→ make and take payment quickly and easily.

→ keep your customer data information and money secure.

→ Gain trust of your customers so they are willing to handover their money.

\* To choose the right payment gateway you should follow the following guidelines:

(1) You should finalize that payment gateway which is supported in your country, not all them operate globally.

(2) You should check what payment gateways are supported better from your e-commerce platform. For ex. paypal gateway is fully supported by magento because the same group have created them.

(3) Payment gateway should be of 3.0 PCI data security platform.

(4) Do you need payment gateway and merchant account or in other services providers.

(5) You must see that charge and fees that will be deduct for the transaction.

(6) What payment method do you support? that for example visucard is a payment method, mastercard is another etc...

(7) Do you that support your type of businesses. For ex. Business that

Sell materials, selling goods, services  
etc.

\* most popular Payment gateway providers:

- (1) PayPal
- (2) Amazon Payments
- (3) Authorize Net
- (4) Google Pay

D. -7-2-24

\* Security and cyber space

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\* overview of security & cyberspace:-

→ Today, the internet has become a source of information that no country or company can ignore. It is not only used to communicate or interact.

→ But most important to operate utilize and public services such as banking or traffic.

→ As the computer network across societies and keep growing, security risk in cyberspace

→ There are four major difference in cyber security.

- (1) Application security.
  - (2) Information security.
  - (3) Disaster recovery
  - (4) Network security

## Types of cyber Security threats :-

- (1) Malware
  - (2) Phishing
  - (3) men in the middle attack
  - (4) Denial of ~~service~~ service attack
  - (5) SQL injection attacks
  - (6) Cross-site scripting
  - (7) Ransomware
  - (8) Password attack
  - (9) Trojan horses
  - (10) Drive-by download attack

① - 5-2-24

## (I) Application Security :-

→ Application Security is a encompasses major or counter majors that are taken during the development lifecycle to protect Application from threats that can come through flows in the application design, development, deployment, upgrade or maintenance.

## (2) Information Security :-

→ Information security is a protect information from unauthorized access to avoid identity theft and to protect privacy.  
major techniques used to cover these are:

A: Identification,

Authentication,

Authentication of user

B: cryptography

## (3) Disaster Recovery :

→ Disaster recovery planning a process that include performing assessment, priorities, developing recovery strategies, in case of disaster recovery.

## (4) network security :-

→ Network security in the case include activities to protect identification of data use or software mechanism in the major case safety. the network includes component of: ~~the~~

A: Antivirus, Anti spyware

B: Firewall to block unauthorized access, to your network security performance in cyber space.

## Types of Cyber Security threats:-

### (1) Malware:-

→ Malware is considered as software that developed by computer network and information security, servers and other computer network. including this protection of malware.

→ Block access to key component.

→ Install harmful software.

→ Steal valuable information.

→ can damage hardware components

D.-06-02-24

### (2) Phishing:

→ Phishing is a form of social engineering commonly used for steal user data. such as credit card number and login details.

g. Restrict and privacy of info.

### (3) Man in the middle:-

→ In man in the middle attack can modify the chats and dialogues between two individuals who communicate with each other.

g. Interfere from the third-party.

g. Modify chats.

#### (4) Denial of Service attack :-

→ In denial of service attack to attempt make digital unavailable to accept data in user login in the denial of service attack.

→ make digital assets

→ Using different IP address.

#### (5) SQL Injection attack :-

→ In SQL injection attack can access the data can easily improve add, modify, delete from the database.

→ Personnel information data.

→ Customer information

→ Trade, sectors and more system in the database

#### (6) cross-site scripting :-

→ In cross-site scripting in malicious code in different user into trusted site usually as a browser side scripting that can call the hyper text markup language.

1. Browser side script

2. Access to personal info.

### (7) Ransomware :-

→ Ransomware is a kind of malware attack that restrict access to your device or files and display pop-up messages that demand payment for the restriction to be removed.

1. Restrict access to device
2. contains malicious attachment

### (8) Password attack :-

→ Password are the main gateway to enter into your personal account to securely the password are usually connected to your life. People of price easily find and gain access to your unencrypted password.

1. Unencrypted Password
2. Enter personal account.

### (9) Trojan horse :-

→ Trojan horse are consider amongs the most dangerous type of all malware as malware as the design to steal financial info.

1. influence victim to install
2. They are specially designed to financial info.

## (10) Drive by download attack:-

→ Drive by download attack is commonly used method to spread malicious script or code on user system. This script will be automatically install in the system or might be redirect to website that controls by attackers.

1. Automatically install
2. Spread malicious script.

## (11) Kinds of crimes

- Cyber crime also refers to any activity where crime is committed using any computer system.
- Cyber criminal are publicly known as hackers.

07-02-2024

⇒ What are the different kinds of cyber crimes :-

→ Here are some of the most common way systems and network get attacked everyday :-

### (1) Identity theft :-

→ Also known as identity fraud. It starts with someone getting your identity allowing digital criminals to use identification details including your name, driver's licence number, Social security number, information and more to commit fraud.

### (2) Illegal data :-

→ The internet is full of illegal content. This includes all data restricted by international law from around the world.

→ Ex. Illegal content includes child and animal related materials, selling drugs online and copyright materials (such as videos, music, books, softwares etc...).

### (3) Crime against the individuals :-

→ Crime against the individual refers to those crimes which are committed against the wish of an individual to cause certain harms to them like physical harm or mental harm.

→ For example harassment, kidnapping etc.

→ But in cyber crimes the nature of crime against individuals changes a little bit and takes the form of

Cyber bullying, child abuse, fraud, cyber threats.

→ Ex. A few cybercrimes against individuals are: harassment via electronic mails, cyber stalking, cheating, unauthorized control / access over computer system, email spoofing, fraud etc..

(4) Crime against government or organization :-

→ There are certain cyber crimes committed to international governments or organizations. These cyber crimes are mainly committed for the purpose of Terror among the people of particular country.

→ Cyber crimes against governments includes cyber attacks on the govt. websites, military website or cyber terrorism.

→ In this kind of cyber crime, criminal hack government or organization website, government firm, and military websites then circulate propaganda against or threats.

→ Ex of Cyber crimes :

- ① Unauthorized access / control over computer system.

② Cyber terrorism against the govt.  
or organizations.

D. 8-2-24

### (5) Crime against Society

→ those cyber crimes which affects the society at large are known as cyber crimes against society.

→ These unlawful acts are committed with the intention of causing harm or such ~~attention~~ intrusion to the cyber space which will automatically affect the large number of people of society.

→ The main target of these types of crimes is public at large and social interest.

The cyber crimes against society includes the following types of crimes :-

(1) Sale of illegal articles

(2) Online gambling

(3) Web jacking

(4) Trafficking

### (6) Crime against Property :-

→ Business and consumer using computer and the internet to create transmit and store information in the electronic forms instead of traditional forms.

→ This type of cyber crimes includes cyber tracking to steal information of other organization or to steal information, someone's bank details or use software to gain access to an organization's website etc.

→ In cyber crime, the hacker steals a person's bank details to gain access to funds, make purchases online to get people to give away these information.

→ They could also copy kind of malicious software to gain access a webpage with confidential information.

This type of crimes includes tracking of computer property crimes (copyright, trademark, etc.) cyber crimes against property includes computer tracking, transmitting virus, unauthorized access control over computer system, internet threats.

\* What is credit card fraud?

→ Credit card fraud is a wide-ranging term for theft and fraud committed using a credit card or any similar payment mechanism as a fraudulent source of fund in a transaction.

→ The purpose may be to obtain goods without pay or to obtain unauthorized funds from an account.

→ Credit card fraud is also and adjust to friendly thefts.

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Types of fraud:

- 1) Counterfeit frauds
- 2) Lost or stolen cards
- 3) No card frauds
- 4) Non-Refunds frauds
- 5) Identity theft frauds

1) Counterfeit frauds:

→ 37% of all funds lost threw credit card frauds.

→ To make fake cards, criminals use the newest technology to 'skim' information content on magnetic strip of cards and to

Pass security features such as holograms.

### (2) Lost or Stolen card:

→ cards stolen from their card holders or lost by them account for 23% of all cards founds.

→ obtained cards are stolen from the work-place, gym center and unattended vehicles.

### (3) No card founds:

→ 20% of all the losses is completed without the physical card in hand.

→ This can happen by giving your credit card information on phone to tele-markets and descriptive internet sites that are promoting the sells of non-existent goods and services.

### (4) Non-Receipt founds:

→ It is responsible for 7% of all losses.

→ It occurs when new or replaced card mailed by your card company or stolen cards during the process of being mailed.

## (5) ~~me~~ Identity theft frauds :

→ Accounts for 4% of all losses and occurs when criminals supply for a card using someone's identity and info.

→ JTs that frauds my work places like theft example social medias etc..