

Chapter -5

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Unit 5: E-payment systems:

Online payment cards (credit cards, charge cards, debit cards, smart cards), processing cards in online, credit card payment procedure, e-micropayments, e-checking and its processing in online. Automated clearing house (ACH) network, mobile payments (Digital wallet), mobile payment participants and issues, international payments, emerging EC payment systems and issues: crypto currency, virtual currency. A case study of emerging trends in online payment system in Nepal. **6 LH**

- 1) What do you mean by Electronic Payment? What are its advantage and disadvantage?
- 2) What is e-check? How to process e-check online?
- 3) Describe mobile payment (Digital Wallet).
- 4) What are the issues of mobile payment? Describe briefly.
- 5) Explain about International Payment System.
- 6) Describe briefly about Virtual Currency.
- 7) What is Bit coin? What are its characteristics?
- 8) what is the difference between virtual currency and crupto currency?
- 9) what is charge card and smart card?
- 10) What is emicro-payment?
- 11) What is ACH?
- # Electornic payment system
 - ## Architecture
 - ### Way of Electronic payment
 - ### Feature must have
- # E-micropayments
- # E-checks
- # Mobile Payment
 - ## Types of wallets
 1. Device Based Digital Wallets
 2. Cloud Based Digital Wallets
- # International Payment System
- # Virtual Currency
- # credit card payment procedure

▼ **1) What do you mean by Electronic Payment?
What are its advantage and disadvantage?**

- Electronic payments, also known as digital payments,
- cashless transaction
- money is transferred electronically between a payer and a payee.

This encompasses various methods like:

- **Debit cards:**
Directly deduct funds from your linked bank account upon purchase.
- **Credit cards:**
Allow you to borrow money up to a limit and pay it back later, often with interest.
- **Mobile wallets:**
Utilize smartphones or other devices to store and transfer payment information.
- **Online payment platforms:**
Facilitate transactions between buyers and sellers on websites or apps.

Advantages of Electronic Payments:

- **Convenience:**
Fast, easy, and accessible from virtually anywhere with an internet connection.
- **Security:**
Often offer better security than carrying cash, with features like PINs, encryption, and fraud protection.
- **Record keeping:**
Provide a clear and easily accessible transaction history for budgeting and personal finance management.
- **Faster transactions:**
Eliminate the need for counting cash, waiting for change,

or check processing times.

- **Increased sales for businesses:**

Can expand customer reach and facilitate smoother online transactions.

Disadvantages of Electronic Payments:

- **Dependence on technology:**

Requires access to a smartphone, internet connection, or specific hardware, which can be a barrier for some individuals.

- **Limited accessibility:**

Not all businesses or individuals may have the infrastructure or willingness to accept electronic payments, especially in remote areas.

- **Security risks:**

Although generally secure, there's still a risk of data breaches or cyberattacks if proper precautions aren't taken.

- **Fees:**

Some transactions may incur processing fees, which can add up over time.

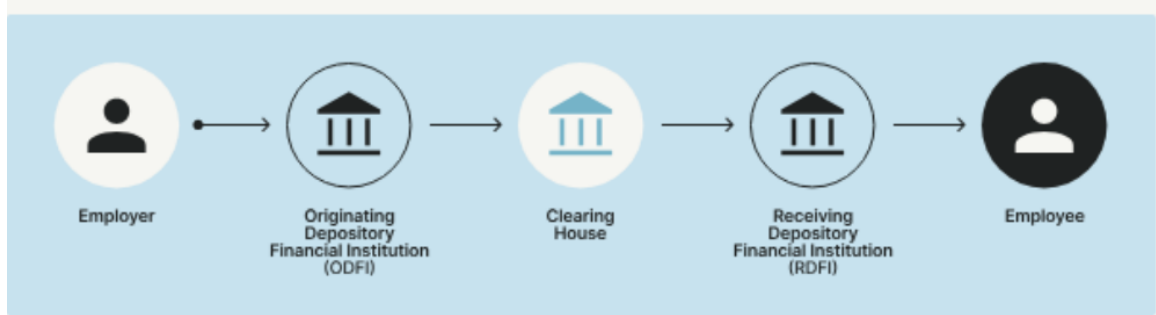
- **Potential for overspending:**

Credit cards can lead to impulse purchases and debt if not managed responsibly.

▼ 2) What is e-check? How to process e-check online?

- An **e-check**, also known as an electronic check, is essentially a digital version of a traditional paper check.
- It functions similarly, allowing you to make payments online by electronically transferring funds from your checking account to the recipient's.

- Instead of physically writing and handing over a check, it uses electronic bank transfers to complete transactions.



Here's how it works:

1. Initiation:

- Payer provide your bank account information through an online platform or payment gateway.
- You specify the recipient's bank account information and the amount you want to transfer.

2. Authorization:

- The platform electronically transmits a request to your bank for the specified amount.
- Your bank verifies your account balance and verifies the recipient's information.
- If everything is in order, your bank authorizes the transfer.

3. Clearing and Settlement:

- The payment information is routed through the Automated Clearing House (ACH) network, a nationwide electronic processing system for financial transactions.
- The ACH network clears the payment, ensuring the funds are debited from your account and credited to the recipient's account.
- This process usually takes one to three business days.

▼ Benefits of E-Checking:

- **Convenience:** Faster and easier than writing and mailing paper checks.
- **Security:** More secure than carrying around paper checks, which are prone to theft or loss.
- **Cost-effective:** Often cheaper than other payment methods like credit cards, with lower transaction fees.
- **Widely accepted:** Many businesses and individuals accept e-checks nowadays.

Processing e-checks online:

1. **Find a platform that accepts e-checks:** Not all online platforms accept e-checks as a payment option. Look for the e-check payment option during checkout or on the bill payment service interface.
2. **Enter your bank account information:** Provide your bank routing number and account number accurately. Ensure the information matches your checking account details.
3. **Review and confirm:** Double-check the payment amount and recipient information before submitting the transaction.
4. **Verification and processing:** The platform will verify your information and initiate the e-check transfer through the ACH network.

▼ 3) Describe mobile payment (Digital Wallet).

- Also known as a digital wallet
- Essentially your **wallet on your phone**.
- It's a secure app that allows you to store your payment information, like credit cards, debit cards, and even loyalty cards, in one place.

How it works:

1. **Store your information:**

You add your credit or debit cards to the mobile wallet app by entering the card details or scanning them using your phone's camera.

2. **Making a payment:**

When you're ready to pay at a store or online, simply hold your phone near a contactless payment terminal (often marked with a symbol like four wavy lines).

3. **Secure communication:**

Your phone communicates securely with the terminal using Near Field Communication (NFC) technology, transmitting a one-time code instead of your actual card details.

4. **Payment authorization:**

You might need to enter a PIN or use fingerprint/facial recognition to authorize the payment on your phone.

5. **Confirmation:**

You'll usually receive a notification on your phone confirming the successful payment.

Benefits of using mobile payments:

- **Convenience:** No need to carry around your physical wallet or multiple cards. Pay quickly and easily with just your phone.
 - **Security:** More secure than carrying physical cards. The actual card details are never transmitted during transactions, reducing the risk of theft or skimming.
 - **Fast and efficient:** Payments are processed quickly, eliminating the need to wait for card swipes or manual entries.
 - **Additional features:** Many mobile wallets offer additional functionalities like storing loyalty cards, coupons, and even transit passes, all in one app.
 - **Budgeting:** Some apps provide features to track your spending and manage your finances more effectively.
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▼ 4) What are the issues of mobile payment? Describe briefly.

Security concerns:

- **Data breaches:** While mobile wallets are generally secure, there's always a risk of data breaches if the app or device is compromised.
- **Lost or stolen phones:** If your phone is lost or stolen, unauthorized individuals might access your mobile wallet if proper security measures like PINs or biometrics aren't enabled.

Limited acceptance:

- **Not universally accepted:** While growing in popularity, not all stores or online merchants currently accept mobile payments.

Technical Dependency:

- **Reliance on technology:** Requires a compatible smartphone, internet connection, and NFC capability, which might not be universally accessible.
- **Battery dependence:** Your phone needs to be charged to use mobile payments.

Transaction Error

- Payer send the ammount but the receiver doesnot recieve the ammount as the money is lost in the transation

Dependence on specific platforms:

- Some wallets might only work with certain devices or operating systems.

▼ 5) Explain about International Payment System.

Network that facilitates financial transactions between

- individuals

- businesses
- banks

in different countries.

It allows for the secure and efficient transfer of money across borders, which is crucial for global trade and commerce.

Here's a breakdown of key aspects:

Types of International Payments:

- **Cross-border trade:**
Payments for goods and services between companies in different countries.
- **Remittances:**
Money sent from individuals working abroad back to their home countries.
- **International investments:**
Investments made in foreign stocks, bonds, or real estate.

Common methods used in International Payments:

- **International credit/debit cards:**
Allow international transactions at merchants or ATMs that accept them.
 - **Online payment platforms:**
Services like PayPal that facilitate online payments internationally.
 - **Wire transfers:**
Electronic transfers of funds between bank accounts, typically the most expensive and fastest option.
 - **Cash in Advance (CIA):**
 - **Letters of Credit (LCs):**
A guarantee from a bank ensuring payment to the seller upon meeting specific conditions.
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▼ 6) Describe briefly about Virtual Currency.

- Digital currency
- **Virtual currency** is a digital representation of value that exists only electronically.
- Unlike physical money, it doesn't have a tangible form like paper bills or coins.
- Unlike traditional currencies issued and controlled by central banks, virtual currencies are:
 - **Decentralized:** Not controlled by a single entity, but often maintained through distributed networks or blockchain technology.
 - **Unregulated:** Largely unregulated by governments or financial institutions, leading to potential risks and volatility.
 - **Stored electronically:** Stored and transacted solely through digital platforms, applications, or dedicated networks.

Here are some key points about virtual currencies:

- **Sub types:** nonconvertable(closed) and convertible(open)
- **Types:**
Include cryptocurrencies like Bitcoin, Ethereum, and Litecoin, as well as other digital assets and tokens used within specific online communities.
- **Transactions:**
Occur peer-to-peer (directly between individuals)
- **Security:**
Relies on cryptography to ensure secure storage and transfer of funds.
- **Benefits:**
Potential advantages include:

- faster transaction speeds
- lower fees
- accessibility for individuals without access to traditional banking systems.

- **Challenges:**

- high volatility
- vulnerability to scams and hacks
- lack of widespread acceptance by merchants and businesses.

Virtual currencies are a rapidly evolving field with ongoing discussions about their potential benefits and risks. As the technology and regulations surrounding them develop, their future impact on global finance remains to be seen.

▼ 7) What is Bit coin? What are its characteristics?

Bitcoin, launched in 2009, is the **first and most well-known cryptocurrency**.

It's a **digital asset** designed to work as a **medium of exchange** which is decentralized

Here are some key characteristics of Bitcoin:

▼ Decentralized:

Bitcoin operates on a **distributed ledger** called a **blockchain**, which is essentially a public record of all transactions shared across a network of computers.

This eliminates the need for a central authority to verify and manage transactions.

▼ Limited Supply:

Unlike traditional currencies that can be printed infinitely by central banks

Bitcoin has a **predetermined finite supply of 21 million coins**. This scarcity is designed to contribute to its value proposition.

▼ **Secure:**

Bitcoin transactions are secured using **cryptography**, making them highly resistant to counterfeiting (fake money) and fraud.

▼ **Pseudonymous:**

While Bitcoin transactions are publicly viewable on the blockchain, they are not directly linked to individual identities.

Users interact with the network using **wallets** identified by unique codes, offering a level of anonymity.

▼ **Not widely accepted:**

Although gaining traction, Bitcoin is still not **universally accepted** as a form of payment by merchants and businesses.

▼ **Volatile:**

Bitcoin's price is **highly volatile**, meaning its value can fluctuate significantly in short periods. This volatility makes it a risky investment and not suitable for everyone.

▼ **Energy consumption:**

Mining new Bitcoins involves solving complex mathematical problems using powerful computers, requiring substantial **energy consumption**. This has raised concerns about its environmental impact.

▼ **8) what is the difference between virtual currency and crypto currency?**

Feature	Virtual Currency	Cryptocurrency
Definition	A digital medium of exchange that exists solely electronically.	A subset of virtual currency that uses cryptography for security and operates on a decentralized network like a blockchain.

Scope	Broader term encompassing various digital mediums of exchange.	Specific type of virtual currency with distinct characteristics.
Examples	Cryptocurrencies, game currencies, loyalty points	Bitcoin, Ethereum, Litecoin
Centralization	Can be centralized or decentralized.	Always decentralized.
Regulation	May or may not be regulated.	Generally unregulated.
Value stability	May not have a fixed value or be readily convertible to traditional currencies.	Often have a limited supply and fluctuating value.
Use cases	Primarily used within specific online communities or platforms.	Primarily used for peer-to-peer transactions or investment purposes.

Analogy:

- **Fruit:** Virtual Currency
- **Apples, Oranges:** Cryptocurrencies (specific types of fruit)

▼ 9) what is charge card and smart card?

Charge Card:

- **Function:** Similar to a credit card, allows you to make purchases and pay for them later. However, unlike credit cards, you **must pay the entire balance in full each month**. There's no revolving credit option, and carrying a balance over to the next month is not permitted.
- **Characteristics:**
 - Typically have **higher credit limits** compared to regular credit cards.

- Often require a **higher credit score** and income level to qualify.
- May offer **rewards programs** or **travel benefits**.
- May come with **annual fees**.
- **Example:** American Express Black Card

Smart Card:

- **Function:** Not a card specifically for financial transactions, but rather a **plastic card with an embedded integrated circuit (IC) chip**. This chip can store and process information, enabling various functionalities.
- **Applications:**
 - **Credit cards:** Many credit cards are now issued as smart cards, offering enhanced security features like chip-and-pin verification.
 - **Debit cards:** Similar to credit cards, some debit cards are also smart cards.
 - **Identification cards:** Used for access control, identification purposes, or storing personal data.
 - **Public transportation:** Used for fare payment on buses, trains, etc.
- **Benefits:**
 - **Enhanced security:** Compared to traditional magnetic stripe cards, smart cards offer better protection against fraud and data breaches.
 - **Versatility:** Can be used for various applications beyond just financial transactions.
 - **Increased functionality:** Can store additional information or perform specific tasks depending on the application.

feature	Charge Card	Smart Card
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Purpose	Making purchases and paying in full each month	Storing and processing information for various applications
Financial transactions	Primarily used for financial transactions	Not specifically for financial transactions, but can be used for debit or credit card payments
Balance carryover	Not allowed	May or may not be applicable, depending on the specific application (e.g., credit cards linked to smart cards may allow balance carryover)
Credit score requirement	Typically higher	Varies depending on the application
Examples	American Express Black Card	Credit cards with chip technology, ID cards, public transport cards

▼ 10) What is emicro-payment?

While the term "e-micropayment" might seem straightforward, there isn't a universally agreed-upon definition within the financial industry. Here's what we know:

1. Potential Interpretations:

- **Micropayment made electronically:** This is the most intuitive interpretation, suggesting a very small payment (typically less than \$1 or even fractions of a cent) made online. This could apply to various situations like:
 - Paying for individual news articles instead of subscriptions.
 - Tipping content creators online for small amounts.
 - Purchasing small digital goods or services within online platforms.

- **Payment system specifically designed for microtransactions:** This interpretation suggests a dedicated system or technology optimized for handling numerous, low-value transactions efficiently. Such a system might address challenges like:
 - **High transaction fees:** Traditional payment systems can be expensive for processing tiny transactions, making them impractical for micropayments.
 - **Scalability:** Handling a large volume of very small transactions efficiently can be challenging for existing systems.

2. Lack of Consensus:

Unfortunately, there's no single, widely accepted definition or established standard for "e-micropayment." Different organizations or individuals might use the term with slightly different interpretations, making it crucial to consider the context when encountering this phrase.

3. Exploring Related Concepts:

While a specific definition for "e-micropayment" might be elusive, here are some related concepts that offer insights:

- **Micropayments:** This broader term refers to very small payments, not necessarily limited to the electronic realm. It encompasses both online and offline transactions.
- **Digital payments:** This refers to any cashless payment made electronically, including online purchases, mobile wallet payments, and online money transfers.
- **Emerging technologies:** Some emerging technologies like blockchain are being explored for their potential in facilitating micropayments efficiently and securely. However, these technologies are still evolving, and their widespread adoption for micropayments remains to be seen.

▼ 11) What is ACH?

ACH stands for **Automated Clearing House**. It's a **network** used to electronically transfer funds between bank accounts in the United States. It's a crucial system that facilitates various types of financial transactions, including:

- **Direct Deposits:** Payroll, government benefits, tax refunds, and other payments are often deposited directly into your account using the ACH network.
- **Direct payments:** You can use ACH to pay bills, send money to friends or family, or make online purchases. Many online bill payment services and merchants offer ACH as a payment option.

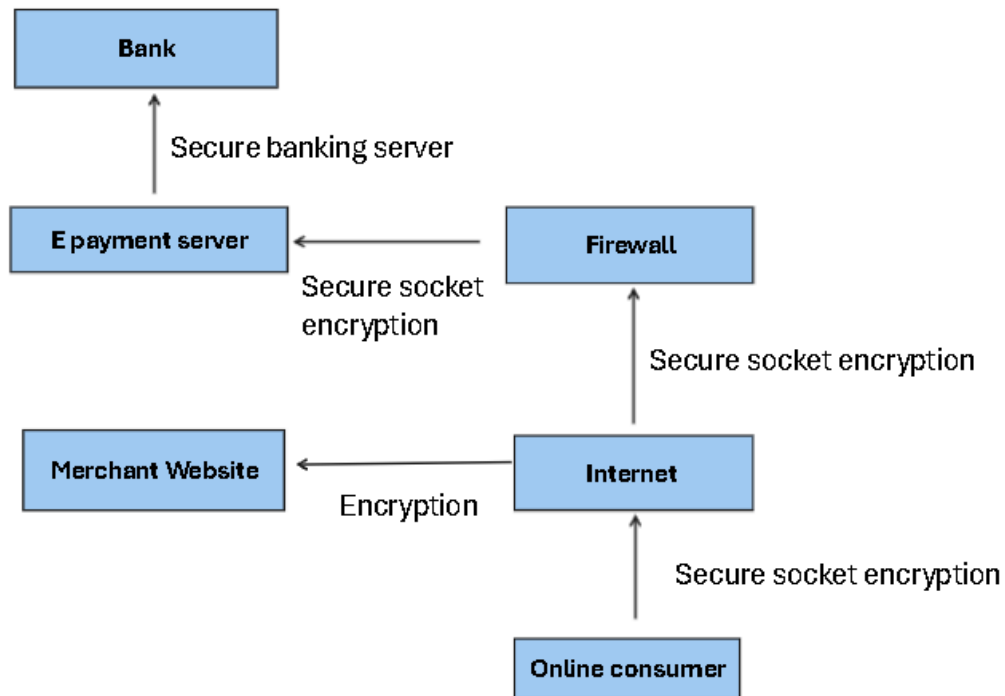
Here are some key characteristics of ACH payments:

- **Efficiency:** ACH transfers are generally faster than traditional methods like mailing checks, but not as instant as credit card transactions.
 - **Cost-effective:** ACH processing fees are typically lower compared to credit card transactions.
 - **Security:** The ACH network uses strong security measures to protect sensitive information during transactions.
 - **Widely used:** ACH is a well-established network used by millions of individuals and businesses in the United States.
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Electornic payment system

When we buy something from E-Commerce we use Electronic payment

Architecture



Way of Electronic payment

- Credit card
- Debit card
- Smart card
- Electronic fund transfer

Feature must have

1. Secure
2. International support
3. Portable
4. Transaction fee

E-micropayments

Micropayment or e-micropayment are the small payment under \$10.

From viewpoint from many vendors or merchant, credit card is too expensive for processing small payments, same for the debit card.

Used for

- Tipping content creators online for small amounts.
- Purchasing small digital goods or services within online platforms.

Micropayment Models as Frameworks:

- **Pay-As-You-Go (Direct Payment):**

This directly falls under the **direct payment** category. You access content and pay immediately, like buying a single song.

- **Prepaid (Stored Value):**

This aligns with the **stored value** concept. You pre-load funds and spend them on microtransactions, similar to a gift card.

- **Postpaid (Aggregation):**

This incorporates aspects of both **aggregation** and potentially **subscriptions**. Your micropayments are aggregated (collected) throughout a billing period and presented as a single charge, which might be bundled with other fees if it's part of a subscription service.

- **Subscriptions:**

Monthly payment.

- **A La Carte:**

This refers to the ability to purchase individual items separately, which aligns with the core idea of micropayments – paying for small, specific pieces of content.

E-checks

Automated clearinghouse (ACH)

- In the United States, the ACH Network is the national automated clearing house for electronic funds transfers. It processes financial transactions for consumers, businesses, and federal, state, and local governments. ACH processes large volumes of credit and debit transactions in batches.
- Nepal Clearing House Limited (NCHL), a subsidiary of the Central Bank of Nepal, has implemented an Electronic Check Clearing (ECC) system in the Nepal. The introduction of ECC has drastically reduced the time required to clear the checks from a few days to minutes. Currently, 140 banks and financial institutions' 1200 branches across the country use our system. Checks are cleared at the branch level itself. Integrated Solutions partnered with ProgressSoft Corporation, Jordan, for the supply and implementation of ECC solution in Nepal.
- Electronic Cheque Clearing (NCHL-ECC) is an image-based, cost-effective, MICR cheque processing and settlement solution where an original paper cheque is converted into an image for electronic processing of the financial transactions between participating member Banks/FIs. The physical movement of the cheques are truncated or stopped at the level of the presenting bank in the NCHL-ECC System. The cheque does not physically travel to the clearing house or to the paying branch as it used to do in manual clearing process, resulting in a faster and easier processing of the cheque transactions.

Mobile Payment

Types of wallets

By Usability:

- **Closed Wallets**
(limited to a specific company's ecosystem) Starbucks app
- **Semi-Closed Wallets**
(work with a network of partnered merchants)

Google Pay, Apple Pay

- **Open Wallets**
(most versatile, work with any contactless payment system)
PayPal

By Data Storage:

1. Device Based Digital Wallets

Near-field communication technology

Credential information (like credit card details) is stored securely on the user's device (phone, watch, etc.).

Examples: Apple Pay when used with a physical card stored on the phone.

Device-Based Digital Wallets

- These are proximity payment systems enabled by near-field communication (NFC) technology.
- On the consumer side, the system requires that the mobile device being used is equipped with NFC antenna and an integrated chip or a smart card inside the phone that holds payment card information (credit or debit).
- On the merchant's side, it requires a specialized NFC reader used to recognize the chip when the chip comes within a short distance of the reader and a network for handling the payment.
- Essentially, a buyer first enters his or her credit card information into the wallet app on the phone prior to shopping. At the time of the purchase, the buyer then "waves" the specially equipped mobile phone near a reader to initiate a payment. The reader collects the info and passes to the payment network. The card is charged and the purchase is complete.
- These proximity payments are also called contactless payments where the phone plays the surrogate roll of a contactless card with a chip.
- The most popular are PayPal wallet (paypal.com), Apple Pay (apple.com/apple-pay), and Android Pay (android.com/pay).

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2. Cloud Based Digital Wallets

QR (quick Response) code or barcode

Cloud-Based Digital Wallets

- An alternative to device-based mobile wallets is cloud-based mobile wallets. The infrastructure for these wallets is not as onerous as a system based on NFC.
- Basically, a customer enrolls his or her card with a secure Web service. Requests for payments are made to the service and charged to enrolled card(s).
- In this way no card information is transmitted during a purchase. Instead, transactions are initiated by scanning a barcode or Quick Response (QR) code created specifically for the customer and stored and displayed on the smartphone by wallet app. A QR code is a 2D barcode consisting of a collection of black square dots placed on a square grid with a white background.
- What is required on the merchant's end is a barcode or QR code image reader that is networked into the service via the Web. The whole system operates much like the way PayPal operates without using a Web page with a PayPal button to start the process. Instead, it's started when the code is scanned. As a point of fact, PayPal employs a cloud-based mobile wallet instead of device-based.

Credential information is stored on a secure server maintained by the wallet provider. This allows access from any device with the wallet app. Examples: PayPal, Venmo (where credit card details are stored by the provider).

International Payment System

Of the options you listed, Visa, Mastercard, Discover, and American Express are credit card networks, while PayPal is an online payment platform. Here's a brief overview of each:

- **Visa and Mastercard** are the two largest credit card networks in the world. They process payments between banks and merchants, and also issue their own credit cards directly to consumers. They are accepted by millions of merchants worldwide.
 - **American Express** is another major credit card network that also issues its own cards. However, American Express cards are not as widely accepted as Visa and Mastercard.
 - **Discover** is a credit card network that primarily operates in the United States. Discover cards are not as widely accepted as Visa and Mastercard, but they may offer some unique benefits, such as cash back rewards programs.
 - **PayPal** is an online payment platform that allows users to send and receive money electronically. PayPal can be used to shop online, send money to friends and family, or even pay for bills. Unlike credit cards, PayPal does not require you to provide your credit card information to merchants when you shop online.
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Virtual Currency

credit card payment procedure

The credit card payment procedure involves several steps behind the scenes to ensure a smooth and secure transaction. Here's a breakdown of the typical flow:

At the Merchant's End:

1. **Transaction Initiation:** You present your credit card (physically swiping it, inserting a chip, or tapping contactless) or enter your card details online for the purchase amount.
2. **Data Transmission:** The merchant's point-of-sale (POS) system or payment gateway securely captures your card information and encrypts it.
3. **Authorization Request:** The encrypted data is sent to the merchant's acquirer (payment processor). The acquirer then forwards it to the appropriate card network (Visa, Mastercard, etc.).

Network and Issuer Bank Involvement:

1. **Authorization Processing:** The card network routes the request to your card's issuing bank (the bank that issued your credit card).
2. **Approval or Decline:** The issuing bank verifies your account information, checks your available credit limit, and determines if the transaction is legitimate based on fraud checks. The bank then sends an approval or decline message back to the network.

Response and Completion:

1. **Authorization Response:** The network transmits the approval or decline message to the merchant's acquirer.
2. **Transaction Completion:** If approved, the acquirer sends a final message to the merchant's POS system, and the transaction is complete. You might receive a receipt or confirmation.
3. **Settlement and Funding:** At the end of the day (or batch), the merchant submits all approved transactions for settlement. The acquirer sends the details to the card network, which debits your issuing bank for the total amount.
4. **Cardholder Billing:** Your issuing bank includes the transaction amount in your next monthly credit card

statement. You'll have a due date to make a minimum payment or pay the balance in full.

Additional Points:

- This is a simplified overview, and the exact process might vary depending on the specific payment method (chip and pin vs. swipe) and technologies involved.
- Security measures like encryption and fraud checks are crucial throughout the process to protect your card information.

I hope this explanation clarifies the credit card payment procedure!

Previous Year Questions

▼ **7.Explain cryptocurrency with its legal provisions in Nepal. How is it different from virtual currency?**

→**Cryptocurrency** is a digital or virtual currency secured by cryptography, making it difficult to counterfeit and resistant to centralized control.

→Think of it as digital gold, but instead of being mined from the earth, it's mined using computational power to solve complex mathematical problems.

Legal provisions in Nepal:

Cryptocurrency is currently **illegal** in Nepal. In September 2021, the Nepal Rastra Bank (NRB) issued a notice prohibiting any activities related to virtual currency, cryptocurrency, and network marketing. This includes:

- Trading or exchanging cryptocurrency
- Mining cryptocurrency
- Holding or possessing cryptocurrency
- Promoting or advertising cryptocurrency

The government's main concerns regarding cryptocurrency are:

- **Financial instability:** Volatility and potential for money laundering and fraud.
- **Lack of regulation:** Absence of clear legal frameworks to protect consumers and prevent illegal activities.

Differences between cryptocurrency and virtual currency:

Cryptocurrency:

- Uses distributed ledger technology (blockchain)
- Secured by cryptography
- decentralized
- eg:
 - bitcoin
 - altcoin

Virtual currency:

- May not use blockchain technology
- centralized or decentralized
- Often tied to a real-world asset or currency
- eg :
 - wow gold
 - bitcoin

▼ 10. "The use of electronic payment systems has significantly increased in Nepal in recent years". In this context, explain the trend of cashless transaction in Nepal along with the benefits and downsides of digital payment systems and cashless economy.

Cashless Boom in Nepal: Riding the Digital Wave

→The statement you provided perfectly summarizes the rising trend of cashless transactions in Nepal.

→Let's dive deeper into this exciting shift, exploring its motivations, benefits, and potential downsides:

Factors Driving the Trend:

- **Government Push:** Initiatives like Jan Dhan Yojana and Digital Nepal drive financial inclusion and promote digital platforms.
- **Mobile Revolution:** Widespread smartphone penetration and improved internet access make digital payments accessible and convenient.
- **Economic Growth:** Increasing disposable income fosters adoption of convenient financial services.
- **Private Sector Innovation:** Fintech companies offer diverse and user-friendly digital payment solutions.

Benefits of Digital Payments:

- **Convenience and Speed:** Transactions are instantaneous and accessible anytime, anywhere.
- **Reduced Costs:** Eliminates printing, transportation, and handling expenses of cash.
- **Record Keeping :** Digital records provide better financial tracking and accountability.
- **Financial Inclusion:** Brings unbanked and underbanked populations into the formal financial system.
- **Economic Efficiency:** Promotes faster circulation of money and fosters a cashless economy.

Downsides to Consider:

- **Digital Divide:** Lack of access to internet or smartphones for some demographics creates an exclusionary barrier.

- **Cybersecurity Threats:** Increased exposure to hacking, fraud, and data breaches requires robust security measures.
- **Technical Dependence:** System outages or technical glitches can disrupt transactions and cause inconvenience.
- **Financial Literacy Gap:** Lack of understanding of digital tools and financial products can lead to misuse or exploitation.
- **Job Displacement:** Automation of cash handling tasks in banks and businesses might lead to job losses.

→Overall, Nepal's embrace of digital payments signifies a progressive step towards a more inclusive and efficient financial system.

→By acknowledging and addressing the challenges alongside the opportunities, the country can navigate this exciting transformation and pave the way for a prosperous digital future.

▼ 6.What is virtual currency? Explain the different types of virtual currencies popular in the market.

- Virtual currencies, also known as cryptocurrencies
- digital assets designed to work as a medium of exchange, using cryptography for security.
- Unlike traditional currencies issued by governments, virtual currencies operate independently and are decentralized, meaning there's no central bank or authority controlling them.
- This makes them a fascinating and complex phenomenon in the financial world.

Here's an introduction to different types of virtual currencies popular in the market, along with visuals to enhance understanding:

1. Bitcoin (BTC):

- The granddaddy of them all, Bitcoin was the first successful cryptocurrency, launched in 2009 by the mysterious Satoshi Nakamoto.
- Its blockchain technology provides secure and transparent transaction record-keeping.
- Bitcoin is known for its limited supply of 21 million coins, contributing to its high value and volatility.

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Bitcoin logo

2. Ethereum (ETH):

- Second only to Bitcoin in market capitalization,
- Ethereum is a versatile platform that enables smart contracts (self-executing agreements) and decentralized applications.
- Its native token, Ether (ETH), is used for transactions on the Ethereum network.
- Ethereum's flexibility has fostered a thriving ecosystem of dApps in various sectors like finance, gaming, and supply chain management.

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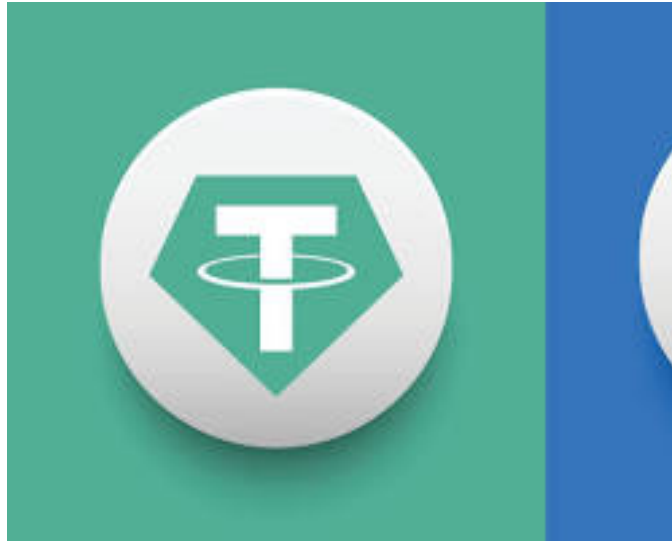


Ethereum logo

3. **Stablecoins (USDT, USDC):**

- Designed to address the price volatility of other cryptocurrencies,
- stablecoins are pegged to real-world assets like the US dollar or gold.
 - These are cryptocurrencies designed to have a **stable price**, unlike other cryptocurrencies that can fluctuate wildly.
- This makes them ideal for transactions and storing value without the constant price fluctuations.
- Popular stablecoins include Tether (USDT) and USD Coin (USDC).

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Tether and USD Coin logos

4. **Altcoins:**

- This term encompasses (surround) all other cryptocurrencies besides Bitcoin and Ethereum.
- Thousands of altcoins exist, each with its unique features and goals.
- Some altcoins focus on privacy, scalability, or specific industry applications.
- Examples include Litecoin (LTC), Ripple (XRP), and Dogecoin (DOGE).

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Litecoin, Ripple, and Dogecoin logos

Exploring Beyond the Surface:

While these are just a few popular examples, the world of virtual currencies is vast and ever-evolving. It's crucial to remember that investing in any virtual currency carries significant risks due to their volatility and unregulated nature. Thorough research and understanding of the technology and individual projects are essential before making any investment decisions.

▼ 6.What is e-checking? Describe its working mechanism

What is e-checking?

- It's a digital version of a paper check, also known as an electronic check, online check, or internet check.
- It functions as a direct debit payment, where funds are transferred directly from the payer's checking account to the payee's account.
- It offers a convenient, secure, and cost-effective way to make payments online.

How e-checking works:

1. Authorization:

- The payer initiates the transaction by providing their bank account information (account number and routing number) and authorizing the payment.
- This authorization can be done through various forms, such as online payment forms, digital signatures, or check images.

2. ACH Network:

- The payment information is securely transmitted through the Automated Clearing House (ACH)

network, an electronic payment system used by financial institutions in the U.S.

3. Clearing and Settlement:

- The ACH network processes the transaction, verifying account information, funds availability, and ensuring compliance with regulations.
- It then transfers the funds from the payer's bank account to the payee's bank account.

4. Funds Availability:

- The funds typically become available to the payee within 1-3 business days, similar to the clearing time for paper checks.

Virtual currencies, a subset of digital currencies, come in various forms, each with its own purpose and characteristics. Here's a breakdown of some popular types:

1. Cryptocurrencies:

* These are the most well-known virtual currencies. They use cryptography for security and operate on decentralized networks like blockchain, which eliminates the need for a central authority like a bank. Popular examples include:

- * **Bitcoin (BTC):** The first and most famous cryptocurrency, known for its volatility and limited supply.
- * **Ether (ETH):** The native currency of the Ethereum blockchain platform, often used for smart contracts and decentralized applications (dApps).

2. Stablecoins:

* Designed to address the price volatility issue of cryptocurrencies, stablecoins are pegged to a stable asset like the US dollar or gold. This aims to maintain a relatively steady value. Examples include:

- * **Tether (USDT):** One of the most popular stablecoins, pegged to the US dollar.
- * **USD Coin (USDC):** Another leading stablecoin, also backed by the US dollar.

3. Utility Tokens:

* These tokens provide access to specific features or functionalities within a particular blockchain-based platform or project. They don't necessarily function as a currency on their own but hold value within the specific ecosystem. Examples include:

- * **Basic Attention Token (BAT):** Used on the Brave browser platform for rewarding users and content creators.
- * **Filecoin (FIL):** Used on the Filecoin network for decentralized data storage.

4. Central Bank Digital Currencies (CBDCs):

* These are digital versions of traditional fiat currencies issued and controlled by central banks. They are still under development but aim to offer benefits like faster transactions and improved financial inclusion.

Examples (in pilot stages):

- * **Digital Yuan (e-CNY):** China's pilot CBDC program.