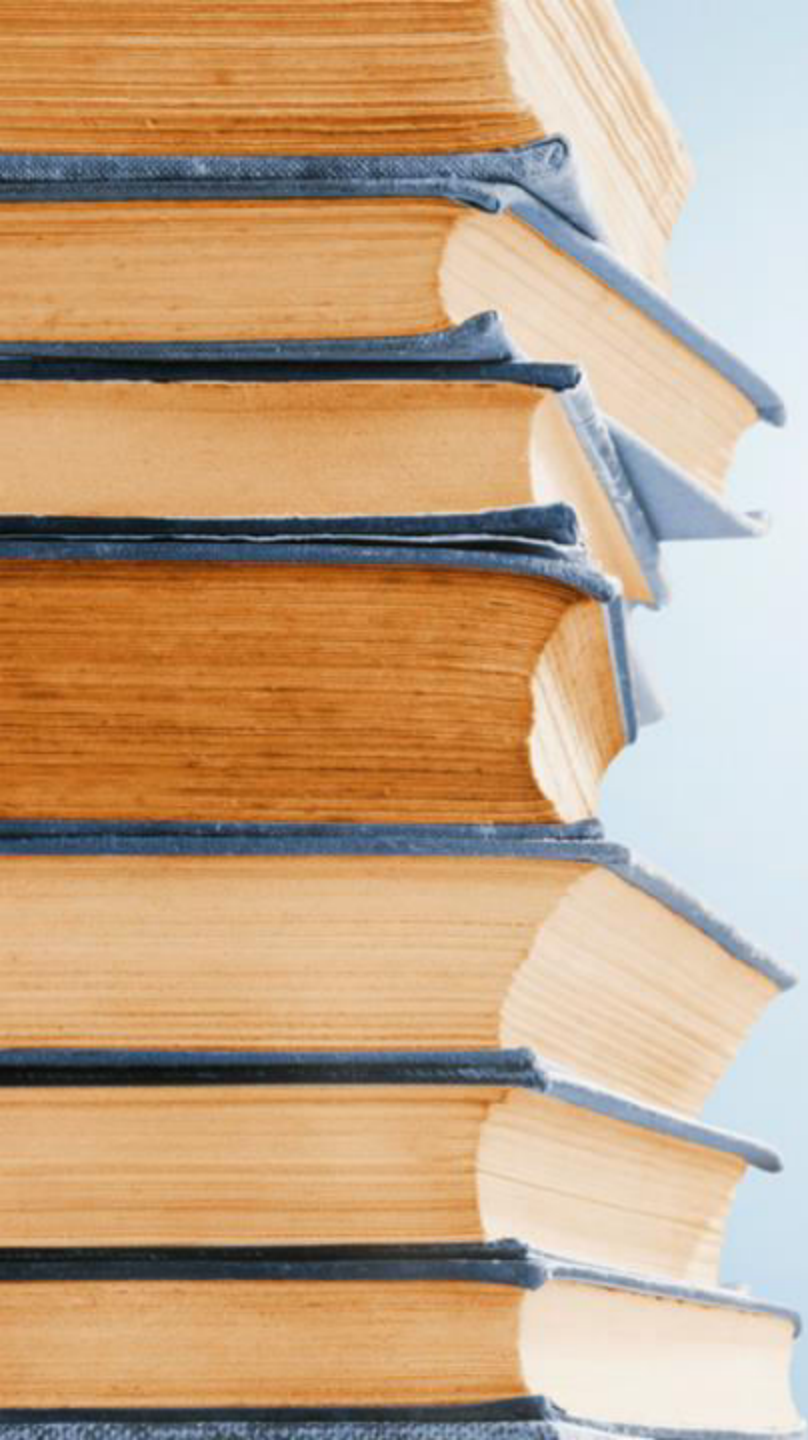
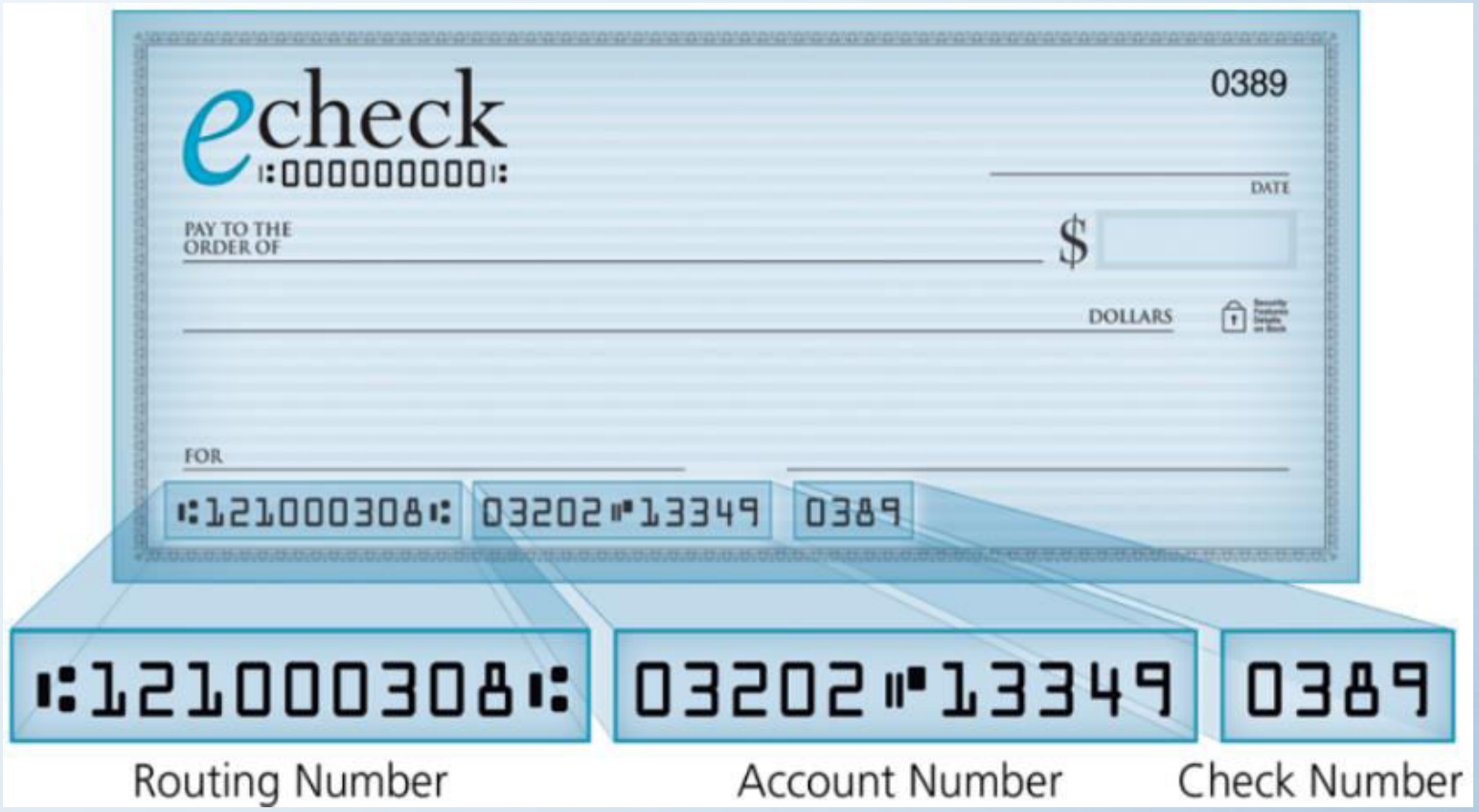


CSC-370
E - Commerce
(BSc CSIT, TU)

Ganesh Khatri
kh6ganesh@gmail.com

Electronic Checks

- An electronic check, or e-check, is a form of payment made via the Internet, or another data network, designed to perform the same function as a conventional paper check.
- Additionally, it has more security features than conventional paper check including authentication, public key cryptography, digital signatures, and encryption, etc.



Electronic Checks

- Generally, the costs associated with issuing an electronic check are notably lower than those associated with paper checks
- Electronic checks can be used to make a payment for any transaction that a paper check can cover, and are governed by the same laws that apply to paper checks
- Generally, the costs associated with issuing an electronic check are notably lower than those associated with paper checks.
- Electronic checks also come with a lower risk of the associated funds being stolen, as there is no tangible item to intercept
- eChecks use the Automated Clearing House (ACH) to direct debit from a customer's checking account into a merchant's business bank account, with the help of a payments processor

How Electronic Checks work?

- In order to accept eCheck payments, a business must first obtain the customer's information including their bank routing and checking account numbers.
- This information can be obtained online, by phone, or in person via a paper form.
- Most businesses today have websites and can provide a secure form page for this customer information
- Using this information, the merchant's bank can communicate directly with a customer's bank.
- Once the funds are verified, the direct debit happens via ACH(Automated Clearing House)

How Electronic Checks work?

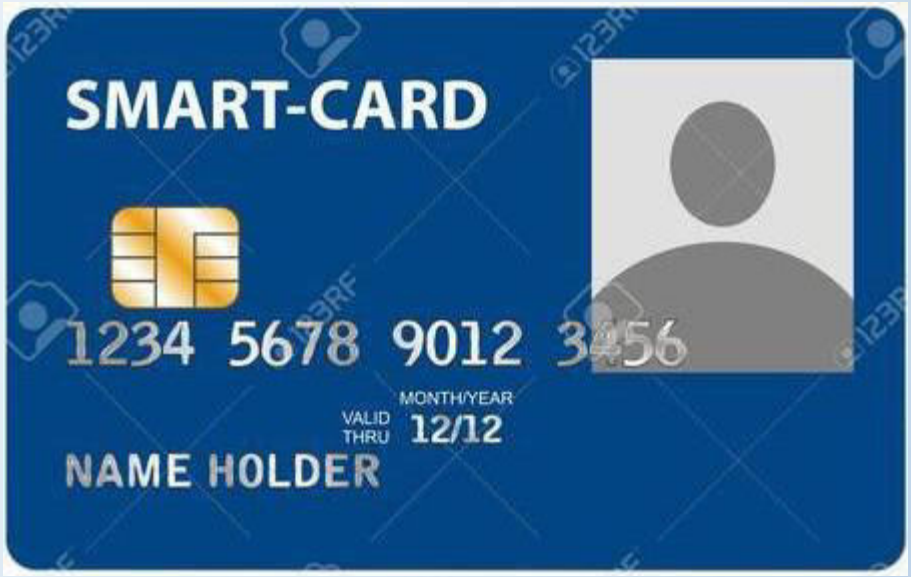
- Following are the parties involved in ACH electronic check payment processing
  1. **An originator :** The merchant cashing the eCheck. The originator initiates the direct deposit process by obtaining the necessary information from the customer
  2. **The business bank :** The originator's bank, also called the Originating Depository Financial institution (ODFI). The business bank places the ACH entry at the originator's order, aggregates payments from a variety of customers, and sends the payments in batches to an ACH operator.
  3. **An ACH operator :** The ACH operator sorts the fund request and settles the funds into the business bank.
  4. **The customer's bank :** a Receiving Depository Financial Institution (RDFI) receives the request, verifies that the funds are available, debits the customer's account and credits the business account.

Benefits of Electronic Checks

- Saves you time with your deposits - no more bank runs or long teller lines
- Lowers traditional bank fees, like per item deposit and returned item fees
- Funds you quickly
- Secures your customer’s personal and bank account information by returning the original item to the check writer
- Expandable equipment is simple and user friendly

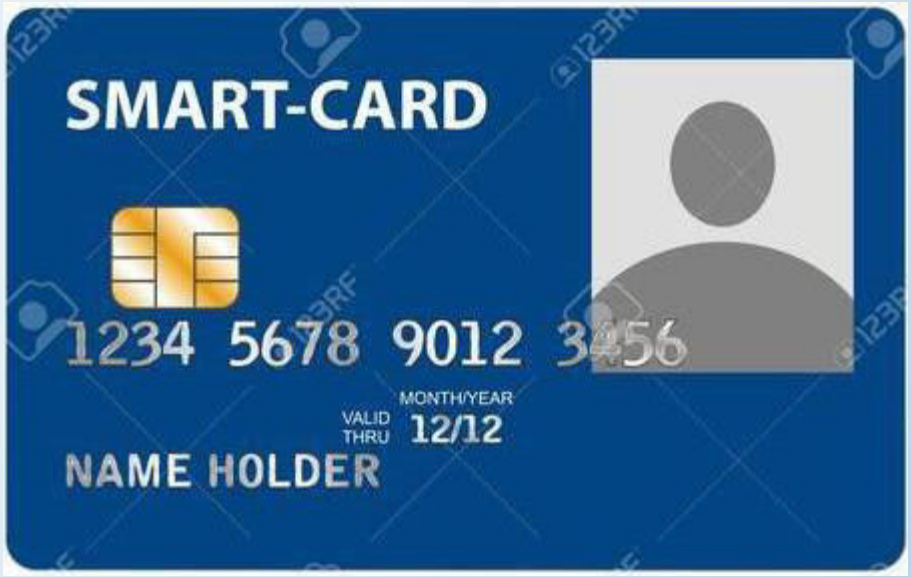
Smart Cards

- A smart card is a device that includes an embedded integrated circuit chip (ICC) that can be either a secure microcontroller or equivalent intelligence with internal memory or a memory chip alone
- The card connects to a reader with direct physical contact or with a remote contactless radio frequency interface.
- With an embedded microcontroller, smart cards have the unique ability to store large amounts of data, carry out their own on-card functions (e.g., encryption and mutual authentication) and interact intelligently with a smart card reader



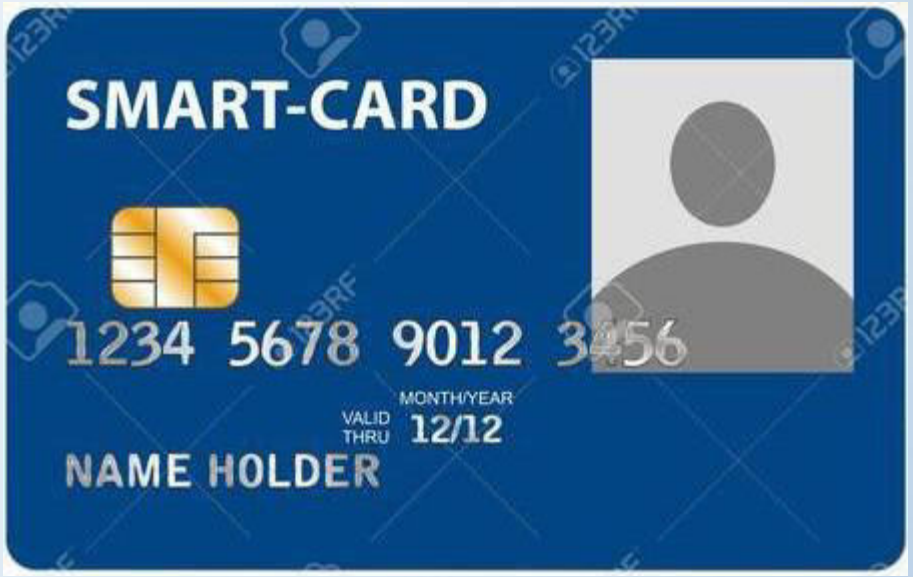
Smart Cards

- Smart card technology is available in a variety of form factors, including plastic cards, fobs, subscriber identity modules (SIMs) used in GSM mobile phones and etc
- Based on the working mechanism, there are three types of smart cards :
  - Contact Smart Card
  - Contactless Smart Card
  - Hybrid Smart Card



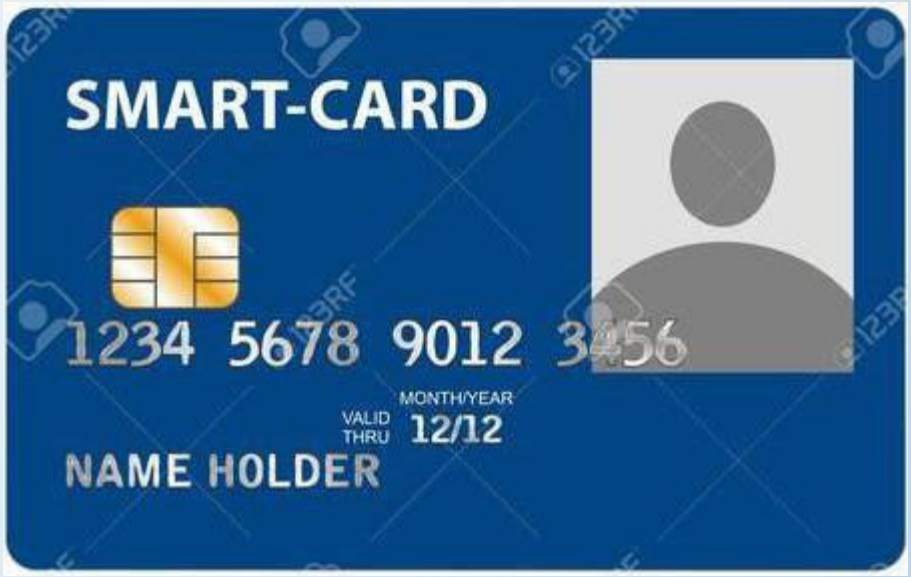
Smart Cards

- **Contact Smart Card :**
  - most common smart cards in use.
  - ATM cards, most credit cards, SIM cards etc fall into this category.
  - the cards should be inserted into card readers, it reads the information stored on the contact pad and carry out transactions as required



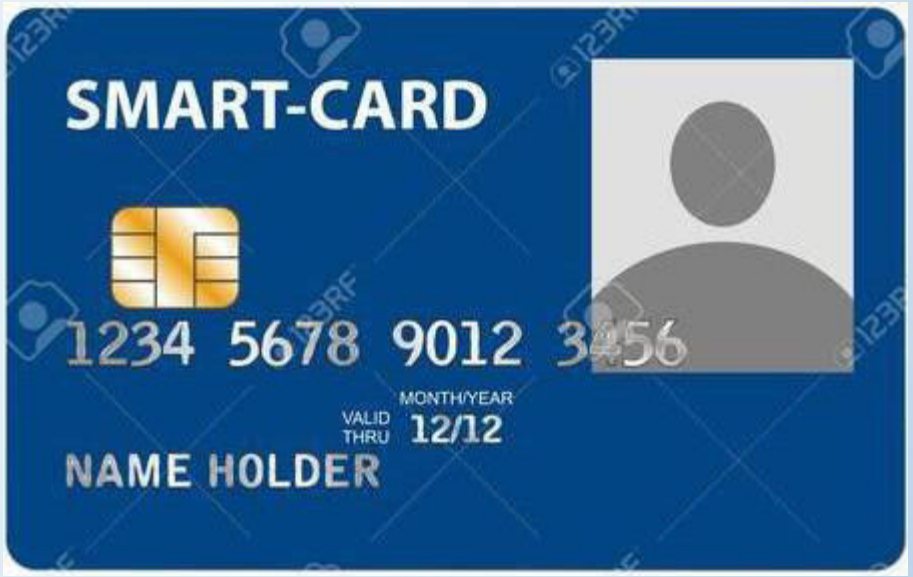
Smart Cards

- **Contactless Smart Card :**
  - these cards do not require a reader.
  - It works using Near Field Communication technology or using radio frequencies which establishes wireless communication between the smart card and card reader.



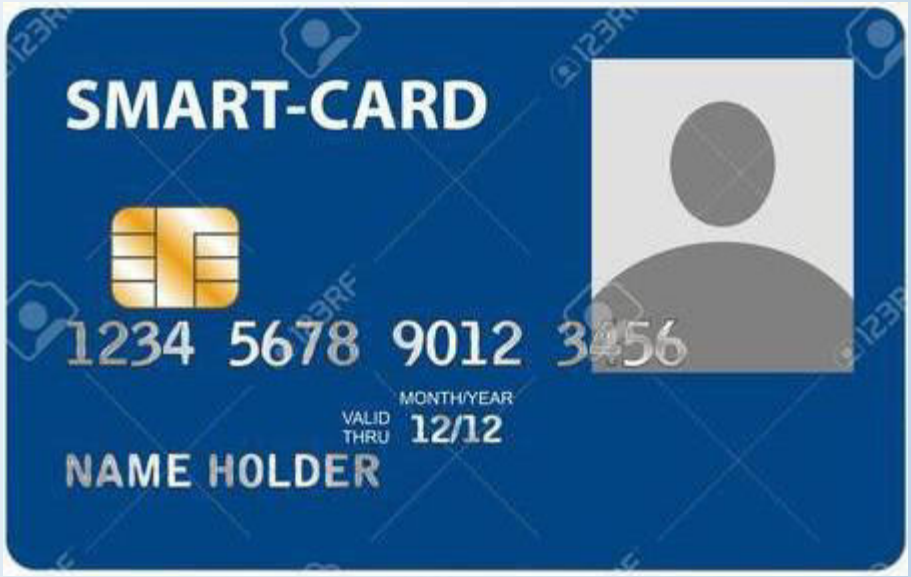
Smart Cards

- **Hybrid Smart Card :**
  - Hybrid cards are cards with dual capacity.
  - These cards can work both on contact and contactless card readers.
  - These cards are quite rare in use
  - This type of smart card can has two chips, one with a contact interface and one with a contactless interface
  - **A dual-interface card** has a single chip with both contact and contactless interfaces and it is possible to access the same chip using either a contact or contactless interface



Applications of Smart Cards

- **Secure identity applications :**
  - employee ID badges, citizen ID documents, electronic passports, driver's licenses, online authentication devices
- **Healthcare applications :**
  - citizen health ID cards, physician ID cards, portable medical records cards
- **Payment applications :**
  - contact and contactless credit/debit cards, transit payment cards
- **Telecommunications application :**
  - GSM Subscriber Identity Modules, pay telephone payment cards



Debit and Credit Cards

- **Debit Cards :**
- Debit cards are smart payment card that makes payment by deducting money directly from a consumer’s checking account.
- that makes payment by deducting money directly from a consumer’s checking account, rather than via loan from a bank
- They provide a convenient alternative to cash, especially if you do a lot of shopping online
- Unlike credit cards, your bank balance goes down with each debit card transaction, so you’re less likely to overspend

Debit and Credit Cards

- **Debit Cards : Benefits**
- Avoid fees and service charges
- Stay accountable for your spending
- Faster payments / Instant Cash

Debit and Credit Cards

- **Credit Cards :**
- A credit card is a card issued by a financial institution, typically a bank, and it enables the cardholder to borrow funds from that institution
- Cardholders agree to pay the money back, with interest, according to the institution's terms
- The problem arises, when you don’t pay the balance in full and are charged interest as well
- People generally use credit cards because you can spend more than you have while using debit cards - or postpone paying, at least and you typically get better rewards and better protection than you do with debit cards

Debit and Credit Cards

- **Credit Cards : Advantages**
- **Convenience :** Credit cards can save your time and trouble - no searching for an ATM or keeping cash on-hand
- **Record keeping :** Credit card statements can help you track your expenses. Some cards even provide year-end summaries that really help out at tax time
- **Low-cost loans :** You can use revolving credit to save today (e.g. at a one-day sale), when available cash is a week away
- **Instant cash :** Cash advances are quick and convenient, putting cash in your hand when you need it.
- **Build positive credit :** Controlled use of a credit card can help you establish credit for the first time or rebuild credit if you've had problems in the past as long as you stay within your means and pay your bills on time

Debit and Credit Cards

- **Credit Cards : Advantages**
- **Purchase protection :** Most credit card companies will handle disputes for you. If a merchant won't take back a defective product, check with your credit card company

Debit and Credit Cards

- **Credit Cards : Disadvantages**
- **Overuse :** Revolving credit makes it easy to spend beyond your means
- **Paperwork :** You'll need to save your receipts and check them against your statement each month. This is a good way to ensure that you haven't been overcharged
- **High-cost fees :** Your purchase will suddenly become much more expensive if you carry a balance or miss a payment
- **Unexpected fees :** Typically, you'll pay between 2 and 4 percent just to get the cash advance; also cash advances usually carry high interest rates
- Deepening your debt