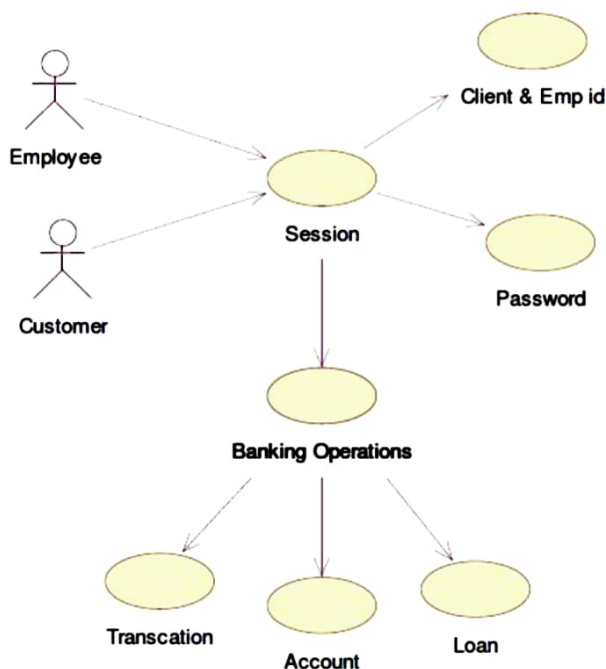


5. Demonstrate the UML representation of the Banking System's Account Transfer Process, highlighting interactions, user roles, transaction sequence, security measures, validation, exception handling, and scalability for future enhancements.

Banking System Use Case Diagram:



Actor: Customer

- **Open Account:**
The customer can initiate the process of opening a new bank account. The system collects necessary information, verifies it, and generates an account.
- **Deposit Money:**
Customers can deposit money into their accounts through various channels, such as over-the-counter transactions, ATMs, or mobile banking.
- **Withdraw Money:**
Customers can initiate a withdrawal of funds from their accounts through ATMs, over-the-counter transactions, or online banking.
- **Transfer Funds:**
Customers can transfer funds between their own accounts or to other accounts within the same bank or to external accounts.
- **Check Balance:**
Customers can check the balance of their accounts through ATMs, online banking, or by visiting a bank branch.

Actor: Bank Teller

- **Process Deposit:**
The bank teller can assist customers in processing deposits over the counter, verifying the transaction details and updating the account balance.
- **Process Withdrawal:**
The bank teller can assist customers in processing withdrawals over the counter, verifying the transaction details and updating the account balance.
- **Open Account for Customer:**
The bank teller can assist customers in opening new accounts by collecting necessary information and completing the account setup process.

Actor: System

Actor: System

➤ **Generate Monthly Statement:**

The system generates monthly account statements for customers, providing a summary of transactions and the current balance.

➤ **Verify Customer Information:**

The system verifies customer information during account opening, ensuring accuracy and compliance with regulatory requirements.

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➤ **Process Fund Transfer:**

The system processes fund transfers initiated by customers, updating the respective accounts and ensuring transaction security.

Actor: Manager

➤ **Monitor Transactions:**

The manager can monitor and review transaction logs and reports to ensure the security and compliance of the banking system.

➤ **Approve Loan Application:**

The manager has the authority to review and approve or reject loan applications submitted by customers.

Actor: ATM

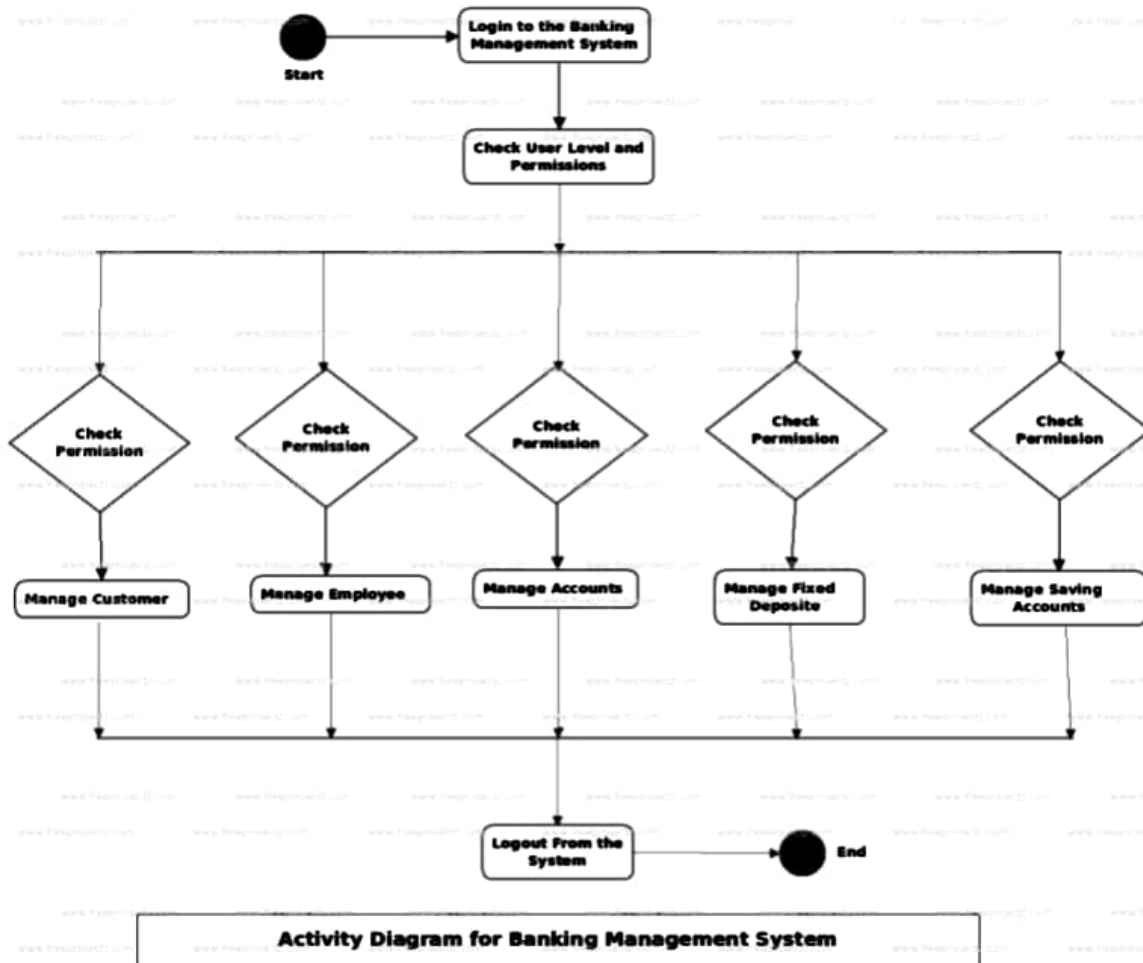
➤ **Dispense Cash:**

The ATM dispenses cash to customers who request withdrawals, updating account balances accordingly.

➤ **Accept Deposits:**

- The ATM allows customers to deposit cash or checks, updating account balances accordingly.
- This use case diagram provides an overview of the interactions between different actors and the banking system, capturing the primary functionalities and transactions in a typical banking environment.

Activity diagram for a Banking System:



Activity: Customer Account Management

➤ Open Account:

The customer initiates the account opening process by providing necessary information. The system verifies the information, generates an account, and sends a confirmation to the customer.

➤ Deposit Money:

The customer chooses the deposit option and specifies the amount. The system updates the account balance accordingly and generates a deposit confirmation.

Activity: Fund Transfer

➤ Transfer Funds:

The customer selects the fund transfer option, specifies source and destination accounts, and provides the transfer amount. The system verifies the accounts and updates the balances of both accounts.

Activity: Withdrawal**➤ Withdraw Money**

The customer requests a withdrawal, specifying the amount. The system checks the account balance, processes the withdrawal, and updates the account balance accordingly.

Activity: Banking Operations**➤ Monthly Statement Generation**

The system periodically generates monthly statements for each customer, summarizing transactions and providing the current balance.

➤ Loan Application

The customer applies for a loan. The system reviews the application, checks eligibility, and either approves or rejects the loan. A notification is sent to the customer.

Activity: Bank Teller Operations**➤ Over-the-Counter Transactions:**

A bank teller assists customers in processing transactions such as deposits and withdrawals over the counter. The teller verifies details, updates the account balance, and issues relevant receipts.

➤ New Account Setup:

The bank teller assists in the account opening process, collecting necessary information, verifying it, and completing the account setup.

Activity: ATM Transactions**➤ ATM Withdrawal:**

The customer uses an ATM to withdraw cash. The system verifies the account and dispenses cash while updating the account balance.

➤ ATM Deposit:

The customer deposits money through an ATM. The system verifies the deposit and updates the account balance.

Activity: System Maintenance**➤ Security Checks:**

The system regularly conducts security checks to ensure the integrity of customer data and protect against unauthorized access.

Database Maintenance:

➤ Routine maintenance tasks are performed on the database to optimize performance and ensure data integrity.

➤ This activity diagram illustrates the flow of activities within a banking system, highlighting interactions between customers, the system, bank tellers, and ATMs. It provides a comprehensive view of the key processes and operations involved in managing customer accounts and conducting banking transactions.