```
class ATM:
    def _init_(self):
        self.accounts = {}
        self.current_account = None

    def create_account(self, account_number, pin):
        if account_number in self.accounts:
            print("Account already exists.")
        else:
            self.accounts[account_number] = {'pin': pin, 'balance': 0, 'transactions':
[]}
            print("Account created successfully.")

    def authenticate(self, account_number, pin):
        if account_number in self.accounts and self.accounts[account_number]
['pin'] == pin:
            self.current_account = account_number
            print("Authentication successful.")
            return True
        else:
            print("Authentication failed.")
            return False

    def check_balance(self):
        balance = self.accounts[self.current_account]['balance']
        print(f"Your balance is ${balance}")

    def deposit(self, amount):
        if amount > 0:
            self.accounts[self.current_account]['balance'] += amount
            self.accounts[self.current_account]['transactions'].append(f"Deposited
${amount}")
            print(f"${amount} has been deposited. Your new balance is $
{self.accounts[self.current_account]['balance']}")
        else:
            print("Deposit amount must be positive.")

    def withdraw(self, amount):
        if amount > self.accounts[self.current_account]['balance']:
            print("Insufficient funds.")
        elif amount <= 0:
            print("Withdrawal amount must be positive.")
        else:
            self.accounts[self.current_account]['balance'] -= amount
            self.accounts[self.current_account]['transactions'].append(f"Withdrew
${amount}")
            print(f"${amount} has been withdrawn. Your new balance is $
```

```
{self.accounts[self.current_account]['balance']}")

    def transfer(self, to_account, amount):
        if to_account not in self.accounts:
            print("Recipient account does not exist.")
        elif amount > self.accounts[self.current_account]['balance']:
            print("Insufficient funds.")
        elif amount <= 0:
            print("Transfer amount must be positive.")
        else:
            self.accounts[self.current_account]['balance'] -= amount
            self.accounts[to_account]['balance'] += amount
            self.accounts[self.current_account]
['transactions'].append(f"Transferred ${amount} to account {to_account}")
            self.accounts[to_account]['transactions'].append(f"Received ${amount}
from account {self.current_account}")
            print(f"${amount} has been transferred to account {to_account}. Your
new balance is ${self.accounts[self.current_account]['balance']}")

    def view_transactions(self):
        transactions = self.accounts[self.current_account]['transactions']
        if transactions:
            print("Transaction history:")
            for transaction in transactions:
                print(transaction)
        else:
            print("No transactions found.")

    def start(self):
        print("Welcome to the ATM")
        while True:
            print("\nPlease select an option:")
            print("1. Create account")
            print("2. Login")
            print("3. Exit")
            choice = input("Enter option number: ")

            if choice == '1':
                account_number = input("Enter account number: ")
                pin = input("Enter PIN: ")
                self.create_account(account_number, pin)
            elif choice == '2':
                account_number = input("Enter account number: ")
                pin = input("Enter PIN: ")
                if self.authenticate(account_number, pin):
                    while True:
                        print("\nPlease select an option:")
```

```
                print("1. Check balance")
                print("2. Deposit")
                print("3. Withdraw")
                print("4. Transfer")
                print("5. View transactions")
                print("6. Logout")
                choice = input("Enter option number: ")

                if choice == '1':
                    self.check_balance()
                elif choice == '2':
                    amount = float(input("Enter amount to deposit: "))
                    self.deposit(amount)
                elif choice == '3':
                    amount = float(input("Enter amount to withdraw: "))
                    self.withdraw(amount)
                elif choice == '4':
                    to_account = input("Enter recipient account number: ")
                    amount = float(input("Enter amount to transfer: "))
                    self.transfer(to_account, amount)
                elif choice == '5':
                    self.view_transactions()
                elif choice == '6':
                    self.current_account = None
                    print("Logged out successfully.")
                    break
                else:
                    print("Invalid option. Please try again.")
            elif choice == '3':
                print("Thank you for using the ATM. Goodbye!")
                break
            else:
                print("Invalid option. Please try again.")

if _name_ == "_main_":
    atm = ATM()
    atm.start()
```