ATM System Monitoring

- Object-Oriented Programming (OOP) is a fundamental concept in Python, helping us structure code efficiently. One common real-world example is an ATM machine, where users interact with functionalities like creating a PIN, depositing money, withdrawing cash, and checking their balance.

- This OOP-based approach makes the ATM system secure, scalable, and efficient.

```
class Atm:
    def __init__(self):

        self.__pin = ""
        self.__balance = 0
        self.__transactions = [] # List to store transaction history

        print(id(self))
        self.__menu()

    def __menu(self):
        user_input = input("""
                    Hello, how would you like to proceed ?
                    1. Enter 1 to create pin.
                    2. Enter 2 to deposit.
                    3. Enter 3 to withdraw.
                    4. Enter 4 to check balance.
                    5. Enter 5 to view transaction history.
                    6. Enter 6 to exit.
                    Enter your choice:
        """)
        if user_input == "1":
            self.create_pin()
        elif user_input == "2":
            self.deposit()
        elif user_input == "3":
            self.withdraw()
        elif user_input == "4":
            self.check_balance()
        elif user_input == "5":
            self.view_transactions()
        else:
            print("Exit")

    def create_pin(self):
        self.__pin = input("Enter your pin: ")
        print("Pin set successfully")

    def deposit(self):
        if self.__pin == "":
            print("Please create a PIN first!")
            return  # Exit the function if no PIN is set

        temp = input("Enter your pin: ")
        if temp == self.__pin:
            amount = int(input("Enter your amount: "))
            self.__balance = self.__balance + amount
            self.__transactions.append(f"Deposited: {amount}")
            print("Deposit Successful")
        else:
            print("Invalid pin")

    def withdraw(self):
        if self.__pin == "":
            print("Please create a PIN first!")
            return

        temp = input("Enter your pin: ")
        if temp == self.__pin:
            amount = int(input("Enter your amount: "))
            if amount <= self.__balance:
                self.__balance = self.__balance - amount
                self.__transactions.append(f"Withdrew: {amount}")
                print("Operation Successful")
            else:
                print("Insufficient funds")
        else:
            print("Invalid pin")

    def check_balance(self):
        if self.__pin == "":
            print("Please create a PIN first!")
            return

        temp = input("Enter your pin: ")
        if temp == self.__pin:
            print(self.__balance)
        else:
            print("Invalid pin")

    def view_transactions(self):
        if self.__pin == "":
            print("Please create a PIN first!")
            return

        temp = input("Enter your pin: ")
        if temp == self.__pin:
            if self.__transactions:
                print("\nTransaction History")
                for transaction in self.__transactions:
                    print(transaction)
            else:
                print("No transactions yet")
        else:
            print("Invalid pin")
sbi = Atm()
```

```
2269836700000
```

```

                    Hello, how would you like to proceed ?
                    1. Enter 1 to create pin.
                    2. Enter 2 to deposit.
                    3. Enter 3 to withdraw.
                    4. Enter 4 to check balance.
                    5. Enter 5 to view transaction history.
                    6. Enter 6 to exit.
                    Enter your choice:
         1
Enter your pin:  1234
```

```
Pin set successfully
```

```
sbi.deposit()
```

```
Enter your pin:  1234
Enter your amount:  20000
```

```
Deposit Successful
```

```
sbi.withdraw()
```

```
Enter your pin:  1234
Enter your amount:  2000
```

```
Operation Successful
```

```
sbi.view_transactions()
```

```
Enter your pin:  1234
```

```

Transaction History
Deposited: 20000
Withdrew: 2000
```