Assignment No 10 :(Class)

Aim: Write a program to ATM machine operation utilizing class, inheritance concepts for following operations (Assume customer has savings bank account with respective bank:

a. Check Balance

b. Withdraw Amount

c. Deposit Amount

d. Mini Statement

e. Change Pin

Theory: Python Classes/Objects:

Almost everything in Python is an object, with its properties and methods. A Class is like an object constructor, or a "blueprint" for creating objects.

Create a Class

To create a class, use the keyword `class`:

Example

Create a class named MyClass, with a property named x:

```
class MyC1ass:
        x=5
```

Create Object

Now we can use the class named MyClass to create objects:

Example

Create an object named pl, and print the value of x:

```
p1 = MyC1ass()
print(p1.x)
```

CODE:

```
File 1:
```

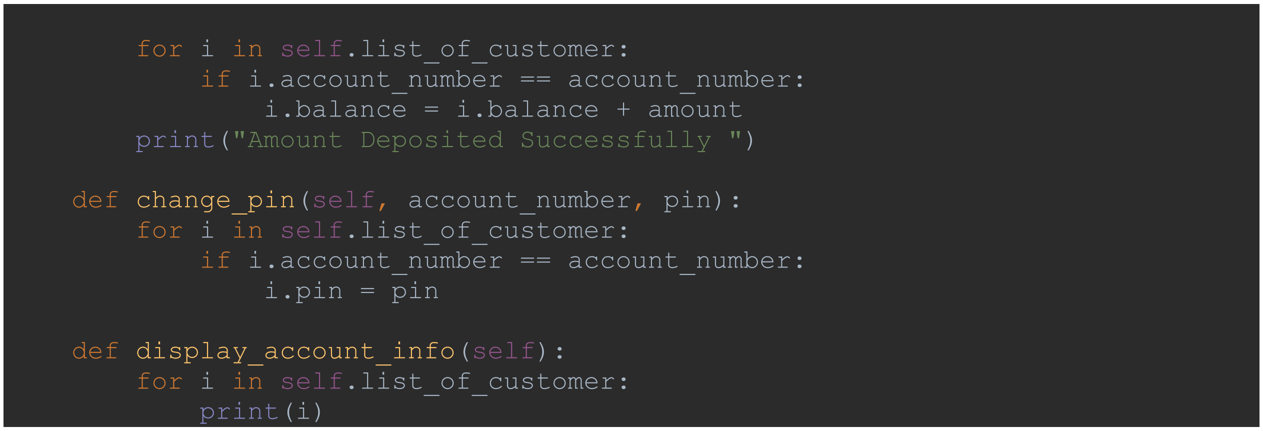
```
from AccountOperationsImpl import AccountOperationsImpl

class Account:

    def __init__(self, account_number, name, balance , pin):
        self.account_number = account_number
        self.customer_name = name
        self.balance = balance
        self.pin = pin

    def __str__(self):
        return f'Account_number : {self.account_number}, customer_name :
{self.customer_name}, ' \
               f'balance : {self.balance}, pin : {self.pin}'


    def __repr__(self):
        return str(self)

a1 = Account(1234, "Sandesh", 120000, 3456)
a2= Account(1235, "Amit", 23400, 4321)
impl = AccountOperationsImpl()
impl.add_customer(a1)
impl.add_customer(a2)
impl.display_account_info()
print("______________________________________________________________________
_")
impl.deposit_amount(1235, 20000)
impl.display_account_info()
print("______________________________________________________________________
_")
impl.withdraw_amount(1234, 60000)
impl.display_account_info()
print("______________________________________________________________________
_")
impl.change_pin(1234, 9876)
impl.display_account_info()
print("______________________________________________________________________
_")
```

file 2:

```
from abc import ABC, abstractmethod

class AccountOperations(ABC):

    @abstractmethod
    def add_customer(self, cust):
        pass

    @abstractmethod
    def check_balance(self, account_number):
        pass

    @abstractmethod
    def withdraw_amount(self, account_number, amount):
        pass

    @abstractmethod
    def deposit_amount(self, account_number, amount):
        pass

    @abstractmethod
    def change_pin(self, account_number, pin):
        pass

    @abstractmethod
    def display_account_info(self):
        pass
    def adopt_cat(self, owner):
        pass

    @abstractmethod
    def adopt_rabbit(self, owner):
        pass

    @abstractmethod
    def adopt_other_animals(self, owner):
        pass

    @abstractmethod
    def show_all_animals(self):
        pass
```

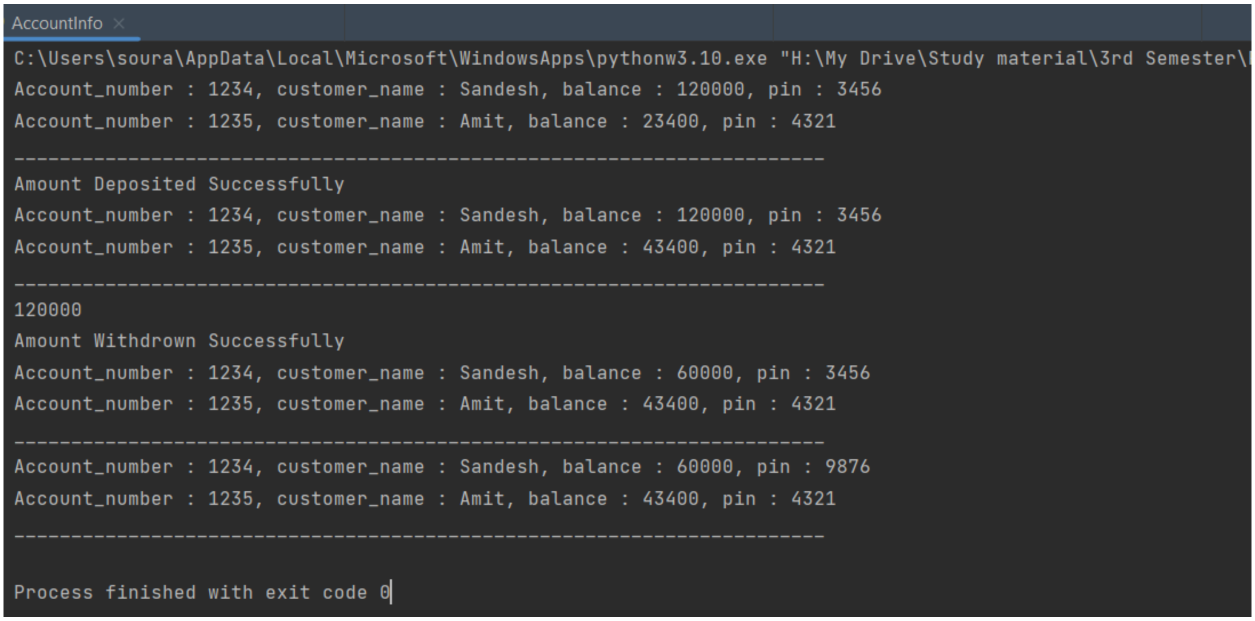
file 3:

```
from AccountOperations import AccountOperations
class AccountOperationsImpl(AccountOperations):
    list_of_customer = []

    def add_customer(self, cust):
        self.list_of_customer.append(cust)


    def check_balance(self, account_number):
        for i in self.list_of_customer:
            if i.account_number == account_number:
                print(i)


    def withdraw_amount(self, account_number, amount):

        for i in self.list_of_customer:
            if i.account_number == account_number:
                print(i.balance)
                i.balance = i.balance-amount
        print("Amount Withdrown Successfully ")


    def deposit_amount(self, account_number, amount):
```



```python
        for i in self.list_of_customer:
            if i.account_number == account_number:
                i.balance = i.balance + amount
        print("Amount Deposited Successfully ")

    def change_pin(self, account_number, pin):
        for i in self.list_of_customer:
            if i.account_number == account_number:
                i.pin = pin

    def display_account_info(self):
        for i in self.list_of_customer:
            print(i)
```

OUTPUT:



```
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\pythonw3.10.exe "H:\My Drive\Study material\3rd Semester\
Account_number : 1234, customer_name : Sandesh, balance : 120000, pin : 3456
Account_number : 1235, customer_name : Amit, balance : 23400, pin : 4321

-----------------------------------------------------------------------
Amount Deposited Successfully
Account_number : 1234, customer_name : Sandesh, balance : 120000, pin : 3456
Account_number : 1235, customer_name : Amit, balance : 43400, pin : 4321

-----------------------------------------------------------------------
120000
Amount Withdrown Successfully
Account_number : 1234, customer_name : Sandesh, balance : 60000, pin : 3456
Account_number : 1235, customer_name : Amit, balance : 43400, pin : 4321

-----------------------------------------------------------------------
Account_number : 1234, customer_name : Sandesh, balance : 60000, pin : 9876
Account_number : 1235, customer_name : Amit, balance : 43400, pin : 4321

-----------------------------------------------------------------------

Process finished with exit code 0
```

Conclusion: Hence, we have learned the implementation of Class and OOP in python.