import re

def validatename(cusname):

l=cusname.split()

if len(l)==3:

if l[0].isalpha() and l[1].isalpha() and l[2].isalpha():

return True

return False

def validateAdhar(AdharNo):

if len(AdharNo)==12 and AdharNo.isdigit():

return True

return False

def validatepan(PanNo):

exp='^[A-Z]{5}[0-9]{4}[A-Z]{1}$'

if re.match(exp,PanNo):

return True

return False

def validatemobno(mobno):

if len(mobno)==10 and mobno.isdigit():

return True

return False

def validategender(Gender):

if Gender=='Female' or Gender=='Male' or Gender=='Other':

return True

return False

def validateifsc(IFSCcode):

pattern="^[A-Z]{4}0[A-Z0-9]{6}$"

if re.match(pattern,IFSCcode):

return True

return False

def validatecity(user\_State,cityname):

cityd={'Maharashtra':['pune','mumbai','nagpur','nashik','nanded','solapur'],'up':['gorakhpur','Lakhnow','phulera']}

v=cityd[user\_State]

if cityname in v:

return True

return False

def validatebank(cityname,Bankname):

bn={'pune':['Axis','ICICI','Bank of India'],'mumbai':['SBI','BOM','Axis'],'nagpur':['ICICI','Axis'],'nashik':['SBI'],'gorakhpur':['Axis'],'Lakhnow':['Icici']}

v=bn[cityname]

if Bankname in v:

return True

return False

def validatedob(DOB):

date\_pattern = r'^(\d{2})/(\d{2})/(\d{4})$'

match = re.match(date\_pattern, DOB)

if match:

day, month, year = map(int, match.groups())

if 1 <= day <= 31 and 1 <= month <= 12 and 1900 <= year <= 9999:

return True

return False

class Bank:

def \_\_init\_\_(self, Bankname, IFSCcode, Gender, DOB, user\_State, AccType, PanNo, AdharNo, mobno, cusname, age, city, accno,bal):

self.Bankname = Bankname

self.IFSCcode = IFSCcode

self.Gender = Gender

self.DOB = DOB

self.user\_State = user\_State

self.AccType = AccType

self.PanNo = PanNo

self.AdharNo = AdharNo

self.mobno = mobno

self.cusname = cusname

self.age = age

self.city = city

self.accno = accno

self.bal= bal

def Deposite(self,amaunt):

self.bal+=amaunt

def Withdraw(self,amaunt):

if self.bal>=amaunt:

self.bal-=amaunt

print("Amaunt withdraw successfully")

else:

print("Insufficent balance")

def TransferAmaunt(self,ta,amaunt):

if self.bal>=amaunt:

self.bal-=amaunt

ta.Deposite(amaunt)

print(amaunt," Amaunt transfer successfuly")

else:

print("Insufficient Balance")

def Checkbalance(self):

print("Your Account Balance is: ",self.bal)

def display(self):

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

print("Customer Name:", self.cusname)

print("Mobile No:", self.mobno)

print("Gender:", self.Gender)

print("DOB:", self.DOB)

print("Age of Customer:", self.age)

print("Bank Name:", self.Bankname)

print("Account Type:", self.AccType)

print("IFSCcode:", self.IFSCcode)

print("Account No:", self.accno)

print("Adhar No:", self.AdharNo)

print("PanCard No:", self.PanNo)

print("user state:", self.user\_State)

print("City:", self.city)

print("balance:",self.bal)

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

B = []

while True:

print("1: Create Account")

print("2: Delete Account")

print("3: Show Details")

print("4: Search the Account")

print("5: Update the Account")

print("6: Deposit Amount")

print("7: Withdraw Amount")

print("8: Transfer Amount")

print("9: Check Balance")

print("10: Exit")

Choice = int(input("Enter your Choice: "))

if Choice == 1:

accno = len(B) + 1 # Auto-generate account number

while True:

cusname=input("Enter your name ")

if validatename(cusname):

break

else:

print("invalid name...Please Enter correct name")

while True:

user\_State = input("Enter Your State : ")

cityname = input("Enter Your city: ")

if validatecity(user\_State,cityname):

break

else:

print("Invalid")

while True:

mobno = input("Enter the mobile no: ")

if validatemobno(mobno):

break

else:

print("invalid mobile no please enter it correctly")

while True:

AdharNo = input("Enter Adhar no: ")

if validateAdhar(AdharNo):

break

else:

print("Invalid adhar no please enter correct adhar number ")

while True:

PanNo = input("Enter pan no: ")

if validatepan(PanNo):

break

else:

print("Invalid pan no please enter it correctly")

while True:

Gender = input("Enter Gender of customer: ")

if validategender(Gender):

break

else:

print("Invalide Gender")

while True:

DOB = input("Enter the DOB of Customer: ")

if validatedob(DOB):

break

else:

print("Invalid Date of Birth")

age = int(input("Enter the age of customer: "))

while True:

cityname=input("Enter city for Account opening")

Bankname = input("Enter the bank name: ")

if validatebank(cityname,Bankname):

break

else:

print("In that city bank branch is not available")

AccType = input("Enter the account type: ")

while True:

IFSCcode = input("Enter the IFSC code: ")

if validateifsc(IFSCcode):

break

else:

print("Invalide IFSC code please enter it correctly ")

bal=int(input("Enter the amaunt: "))

bk = Bank(Bankname, IFSCcode, Gender, DOB, user\_State, AccType, PanNo, AdharNo, mobno, cusname, age, cityname, accno,bal)

B.append(bk)

print("Your Account has been successfully created.")

elif Choice == 2:

# Implement account deletion logic

Acc=int(input('Enter account no you want to delete :'))

for i in B:

if i.accno==Acc:

B.remove(i)

elif Choice == 3:

for account in B:

account.display()

elif Choice == 4:

# Implement account search logic

print("press I to search by name ")

print("press II to search by Account No ")

ch=input("Enter your Choice: ")

if ch=='I':

nm=input("Enter the name which you want to search :")

for i in B:

if i.cusname==nm:

i.display()

elif ch=='II':

A=int(input("Enter the Account No which you want to search :"))

for i in B:

if i.accno==A:

i.display()

else:

print("Invalid Choice")

elif Choice == 5:

# Implement account update logic

UA=int(input("Enter the Account No "))

for i in B:

if i.accno == UA:

print("Enter I to update name ")

print("Enter II to update age ")

print("Enter III to update Address ")

ch=input("Enter your choice ")

if ch=='I':

n=input("Enter updated name: ")

i.cusname=n

elif ch=='II':

a=int(input("enter updated age: "))

i.age=a

elif ch=='III':

Ad=input("Enter updated Address :")

i.Address=Ad

else:

print("Invalid choice")

elif Choice == 6:

# Implement deposit logic

acc = int(input("Enter Account No: "))

amount = int(input("Enter the amount: "))

for i in B:

if i.accno == acc:

i.Deposite(amount)

print("Amount deposited successfully.")

elif Choice == 7:

# Implement withdrawal logic

Acc=int(input("Enter Account No :"))

amaunt=int(input("Enter the amaunt: "))

for i in B:

if i.accno==Acc:

i.Withdraw(amaunt)

else:

print("invalid account no")

elif Choice == 8:

# Implement transfer logic

sa=int(input("Enter your Account No :"))

for i in B:

if i.accno==sa:

ta=int(input("Enter Account no where you want to transfer a amount :"))

for j in B:

if j.accno==ta:

amaunt=int(input("Enter amaunt you want to transfer:"))

i.TransferAmaunt(j,amaunt)

elif Choice == 9:

# Implement balance check logic

Acc=int(input("Enter Account no :"))

for i in B:

if i.accno==Acc:

i.Checkbalance()

elif Choice == 10:

print("Thank You visit again !!!!")

break

else:

print("Invalid Choice. Please Enter a Correct Choice")