ASSINGEMENT -1

PYTHON

[COM-501]

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*** ATM APPLICATION ***

CODE:

```
class User: # class for user

    def __init__(self, u_id, password, balance=5000): # Function for
crating new account
        self.user_id = u_id
        self.user_passowrd = password
        self.balance = balance

    def deposit(self,amount): # Function for deposit
        if amount % 100 == 0 and amount <= 100000:
            notes={2000:0, 1000:0, 500:0, 200:0, 100:0}
            d_amnt=0
            print("\nDenomination")  # Denomination on deposit
            for i in notes.keys():
                notes[i]=int(input(f"Enter no. of {i}'s notes : "))
                d_amnt+=i*notes[i]
            if amount==d_amnt:
                self.balance += amount
                return f"Deposited {amount} successfully."
            else:
                return "Invalid Denomination."
        else:
            return "Invalid Deposit amount or denomination"

    def withdraw(self,amount): # Function for withdraw
        if amount % 100 == 0 and amount <= 50000:
            if self.balance >= amount:
                self.balance -= amount
                denom_list=denomination(amount)        # denomination on
withdrawal
                d_amnt=0
                for i in denom_list.keys():
```

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                d_amnt+= i*(denom_list[i])
                print(f"{i} * {denom_list[i]} = {i*denom_list[i]}")
            print("Total Amount: ",d_amnt)
            print("Withdrew successfully.")

            if self.balance<5000:              # Notification if minimum
balance reached
                print("\t*** Notification: Maintain Minimum Balance of
5000 ***")
        else:
            print("Insufficient balance.")
    else:
        print("Invalid withdrawal amount or denomination.")

  def check_balance(self): # Function for Checking balance
    return f"Balance: {self.balance}"

  def update(self, new_password): # Function for Change password
    self.user_passowrd=new_password

def denomination(amount):      # denomination function
  notes={2000:0, 1000:0, 500:0, 200:0, 100:0}
  for i in notes.keys():
    if amount>0:
      Note = amount//i
      if Note>0:
        amount-=i*Note
        notes[i]=Note
    else:
      break
  return notes

users={} # dictionary that maintains or stores users

def user_main():  # user main function
  while True:
    print("\n\t\t***** User Main Menu ****")
```

```
    print("1. Create New Accont\n2. Login to Existing Account\n3. Back to Main Menu\n0. Exit")
    choice=input("Enter Your Choice : ")

    if choice=='1':   # Create new account
        u_id=input("Enter new id: ")
        if u_id in users.keys():
            print("User already exist.")
        else:
            n_password = input("Enter new password: ")
            u_bal = int(input("Enter Balance in account: "))
            new_user = User(u_id,n_password,u_bal)
            users.update({u_id : new_user})
            print("**** Congrulation! New Account is created *****")

    elif choice=='2':  # Existing account
        u_id=input("Enter ID: ")
        if u_id in users.keys():
            user = users[u_id]
            count=3
            while count>0:
                password = input("Enter Passowrd: ")
                if password == user.user_passowrd:
                                # users function
                    while True:
                        print("\nUser Menu:")
                        print("1. Deposit")
                        print("2. Withdraw")
                        print("3. Check Balance")
                        print("4. Change Password")
                        print("5. Logout")
                        user_choice = input("Enter your choice: ")
                        if user_choice == '1':
                            amount = int(input("Enter the deposit amount: "))
                            print(user.deposit(amount))
                        elif user_choice == '2':
```

```
                    amount = int(input("Enter the withdrawal amount: "))
                    user.withdraw(amount)
                elif user_choice == '3':
                    print(user.check_balance())
                elif user_choice == '4':
                    new_password = input("Enter new password: ")
                    user.update(new_password)
                    print("Password changed successfully.")
                elif user_choice == '5':
                    print("\n\t<---> User loged Out <--->")
                    count=-1
                    break
                else:
                    print("Invalid choice. Please try again.")
            else:
                count-=1
                if count==0:
                    print("!!!! To Many worng attemps. Account Locked !!!! ")
                else:
                    print("Wrong password. Attempt remain ",count)
        else:
            print("!!!!! User Not found. !!!!")

    elif choice=='3': # Back to main file
        return -1

    elif choice=='0':   # Exit the program
        print("\n\t**** Thanks for using our services ****\n\t**** Exit ATM Program ****")
        return 0
    else:
        print("\n<----> Invalid choice! <---->\n<--> Enter from given options <-->")

class Admin:  # Admin class
```

```
    def __init__(self, admin_id, password, balance): # Create admin
account
        self.admin_id = admin_id
        self.password = password
        self.balance = balance

    def total_balance(self): # Check total balance
        return f"Total Balance: {self.balance}"

    def deposit_cash(self, amount): # Deposite in admin account
        if amount % 100 == 0 and amount <= 300000:

            notes={2000:0, 1000:0, 500:0, 200:0, 100:0}
            d_amnt=0
            print("\nDenomination")  # Denomination on deposit
            for i in notes.keys():
                notes[i]=int(input(f"Enter no. of {i}'s notes : "))
                d_amnt+=i*notes[i]
            if amount==d_amnt:
                self.balance += amount
                print(f"Deposited {amount} successfully.")
            else:
                print("Invalid Denomination.")
            if self.balance < 75000:
                print("\t*** Notification: Balance is less than 75,000. ***")
        else:
            print("Invalid deposit amount or denomination.")

    def withdraw(self,amount): # Function for withdraw
        if amount % 100 == 0 and amount <= 500000:
            if self.balance >= amount:
                self.balance -= amount
                denom_list=denomination(amount)        # denomination on
withdrawal
                d_amnt=0
                for i in denom_list.keys():
```

```
                d_amnt+= i*(denom_list[i])
                print(f"{i} * {denom_list[i]} = {i*denom_list[i]}")
            print("Total Amount: ",d_amnt)
            print("Withdrew successfully.")
            if self.balance<75000:      # Notification if minimum
balance reached
                print("\t*** Notification: Maintain Minimum Balance of
75000 ***")
        else:
            print("Insufficient balance.")
    else:
        print("Invalid withdrawal amount or denomination.")

admins ={}   # dictionary to maintain admin details

def admin_main(): # Admin functions
    admin_id = input("Enter Admin ID: ")
    if admin_id in admins: # check valid admin id
        count=3
        while count>0:    # if password is wrong three times
            password = input("Enter Password: ")
            if admins[admin_id] == password: # Admin functions
                while True:
                    print("\n\t\t**** Admin Menu ****")
                    print("1. Total Balance")
                    print("2. Deposit Cash")
                    print("3. Withdraw Cash")
                    print("4. Logout")
                    admin_choice = input("Enter your choice: ")
                    if admin_choice == '1':
                        print(admin.total_balance())
                    elif admin_choice == '2':
                        amount = int(input("Enter the deposit amount: "))
                        admin.deposit_cash(amount)
                    elif admin_choice == '3':
                        amount=int(input("Enter the Withdraw amount: "))
                        admin.withdraw(amount)
```

```
                elif admin_choice == '4':
                    print("\n\t<----> Admin Loged Out <---->\n")
                    count=-1
                    break
                else:
                    print("Invalid choice. Please try again.")
            else:
                count-=1
                if count==0:
                    print("!!!! To Many worng attemps. Account Locked !!!!
")
                else:
                    print("Wrong password. Attempt remain: ",count)
    else:
        print("!!!! Wrong Admin Id !!!!")

''' Main program '''
if __name__=='__main__':
    print('\n\t\t*** Welcome To The ATM ***')
    print(" New Admin Account ")
    admin_id = input("Enter Admin ID: ")
    admin_pass = input("Enter Admin Password: ")
    admin_ammount = int(input("Enter Balance for Admin (Rs100-
5L): "))
    admins.update({admin_id : admin_pass})
    admin = Admin(admin_id,admin_pass,admin_ammount)
    while True:
        print("\t**** Main Menu ****")
        print("1. User\n2. Admin\n3.Exit")
        choice = input("Enter your choice: ")

        if choice=='1': # Open user functions/file

            val=user_main()
            if val==0:
                break
        elif choice=='2': # Open admin functions/file
```

```
            val=admin_main()
            if val==0:
                break
        elif choice=='3':    # Exit the program
            print("\n\t**** Thanks for using our services ****\n\t****
Exit ATM Program ****")
            break
        else:          # Wrong input/choice
            print("\n\t<----> Invalid choice! <---->\n\t<--> Enter from
given options <-->")
("Result: ",multiply(num1,num2))
        elif choice==4:
            print("Result: ",divide(num1,num2))
    elif choice==5:
        print("Exiting the calculator.Goodbye!")
        break
    else:
        print("Invalid input. Please enter a number between 1 and 5.")
```

OUTPUTS:

ADMIN:

```
                *** Welcome To The ATM ***
 New Admin Account
Enter Admin ID: ADMIN1
Enter Admin Password: adminpass
Enter Balance for Admin (Rs100-5L): 200000
```

```
                **** Admin Menu ****
1. Total Balance
2. Deposit Cash
3. Withdraw Cash
4. Logout
Enter your choice: 2
Enter the deposit amount: 50000

Denomination
Enter no. of 2000's notes : 20
Enter no. of 1000's notes : 10
Enter no. of 500's notes : 0
Enter no. of 200's notes : 1
Enter no. of 100's notes : 1
Invalid Denomination.
```

```
        **** Main Menu ****
1. User
2. Admin
3.Exit
Enter your choice: 2
Enter Admin ID: ADMIN1
Enter Password: adminpass

                **** Admin Menu ****
1. Total Balance
2. Deposit Cash
3. Withdraw Cash
4. Logout
Enter your choice: 1
Total Balance: 200000
```

```
                **** Admin Menu ****
1. Total Balance
2. Deposit Cash
3. Withdraw Cash
4. Logout
Enter your choice: 1
Total Balance: 200000

                **** Admin Menu ****
1. Total Balance
2. Deposit Cash
3. Withdraw Cash
4. Logout
Enter your choice: 2
Enter the deposit amount: 45000

Denomination
Enter no. of 2000's notes : 20
Enter no. of 1000's notes : 3
Enter no. of 500's notes : 4
Enter no. of 200's notes : 0
Enter no. of 100's notes : 0
Deposited 45000 successfully.

                **** Admin Menu ****
1. Total Balance
2. Deposit Cash
3. Withdraw Cash
4. Logout
Enter your choice: 1
Total Balance: 245000
```

```
        **** Main Menu ****
1. User
2. Admin
3.Exit
Enter your choice: 2
Enter Admin ID: admin1
!!!! Wrong Admin Id !!!!
        **** Main Menu ****
1. User
2. Admin
3.Exit
Enter your choice: 2
Enter Admin ID: ADMIN1
Enter Password: 123
Wrong password. Attempt remain:  2
Enter Password: 321
Wrong password. Attempt remain:  1
Enter Password: 231admin
!!!! To Many worng attemps. Account Locked !!!!
```

```
                **** Admin Menu ****
1. Total Balance
2. Deposit Cash
3. Withdraw Cash
4. Logout
Enter your choice: 4

        <----> Admin Loged Out <---->

        **** Main Menu ****
1. User
2. Admin
3.Exit
Enter your choice: 3

        **** Thanks for using our services ****
        **** Exit ATM Program ****
```

USER:

```
        **** Main Menu ****
1. User
2. Admin
3.Exit
Enter your choice: 1

                ***** User Main Menu ****
1. Create New Accont
2. Login to Existing Account
3. Back to Main Menu
0. Exit
Enter Your Choice : 1
Enter new id: abc
Enter new password: abc123
Enter Balance in account: 45000
**** Congrulation! New Account is created *****
```

```
                ***** User Main Menu ****
 1. Create New Accont
 2. Login to Existing Account
 3. Back to Main Menu
 0. Exit
 Enter Your Choice : 2
 Enter ID: abc
 Enter Passowrd: abc123
```

```
User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 3
Balance: 45000

User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 1
Enter the deposit amount: 3700

Denomination
Enter no. of 2000's notes : 1
Enter no. of 1000's notes : 1
Enter no. of 500's notes : 1
Enter no. of 200's notes : 0
Enter no. of 100's notes : 2
Deposited 3700 successfully.

User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 3
Balance: 48700
```

```
User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 3
Balance: 48700

User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 2
Enter the withdrawal amount: 4500
2000 * 2 = 4000
1000 * 0 = 0
500 * 1 = 500
200 * 0 = 0
100 * 0 = 0
Total Amount:  4500
Withdrew successfully.

User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 3
Balance: 44200
```

```
            ***** User Main Menu ****
1. Create New Accont
2. Login to Existing Account
3. Back to Main Menu
0. Exit
Enter Your Choice : 2
Enter ID: abc
Enter Passowrd: abc123

User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 4
Enter new password: 123abc
Password changed successfully.
```

```
User Menu:
1. Deposit
2. Withdraw
3. Check Balance
4. Change Password
5. Logout
Enter your choice: 5

        <---> User loged Out <--->

            ***** User Main Menu ****
1. Create New Accont
2. Login to Existing Account
3. Back to Main Menu
0. Exit
Enter Your Choice : 3
        **** Main Menu ****
1. User
2. Admin
3.Exit
Enter your choice:
```