



BANKING SYSTEM

INTRODUCTION:

The purpose of this project is to showcase the working of a Banking system which users can:

- create a bank account
- deposit money in the account
- withdraw money from the account
- transfer money from one account to another
- view their account details
- view their transaction details
- terminate their account

It automatically records the transactions done by storing the type of transaction, the date of transaction, the amount transacted and the balance after transaction in the form of an invoice. This reduces the discrepancy of manually keeping track each of the transactions made.

The program makes use of two separate tables which are:

- acc (short for account)
- transac (short for transaction)

TABLES:

TABLE1

- Account Number (accno)
- Name
- Date of Birth (dob)
- Telephone No (telno)

accno	name	dob	telno
101	Khalil Bellamy	01/05/1983	95526426
102	Maxim Ulyanov	23/10/1965	94474612

TABLE2

- Account Number (accno)
- Transaction Type (transtype)
- Date of Transaction (dot)
- Transaction Amount (transamt)

accno	transtype	dot	transamt	balance
101	d	09/12/2002	1500	500
102	d	01/09/2003	1600	1600
101	w	25/01/2003	270	1230

FUNCTION DEFINITION:

- **CREATE ()**

User enters name, telephone number, password and an initial deposit (minimum 100, maximum 500000) after verifying that the age is above 18. An account is created which can be accessed by the generated account number and the password given earlier.

- **DEPOSIT ()**

Allows the user to deposit money (maximum 500000) into the account after logging in with the account number and password. The date of deposit is recorded.

- **WITHDRAW ()**

Allows the user to withdraw money (maximum 500000) from the account after logging in with the account number and password. The date of withdrawal is recorded.

- **TRANSFER ()**

Transfers credit from sender to receiver. The sender logs in with account number and password. The account number of the receiver and the credit is requested. The credit is transferred to the receiver after verifying that it doesn't exceed the balance of the sender. The date of transaction is noted.

- **DISPLAY ()**

All the details provided during account creation, along with the balance are displayed after the user logs in with the account number and password.

- **TRANS_D ()**

Displays transaction type (deposit or withdrawal), date of transaction, transaction amount and balance after the user logs in with the account number and password.

- **CH_PASS ()**

Assigns a new password to the account after the user logs in with the account number and password.

- **TERMINATE ()**

Terminates bank account after verification.

PROGRAM CODE:

```
import mysql.connector

from datetime import date

mycon=mysql.connector.connect(host='localhost',user='root',password='dontread
this1',database='banking')

mycursor=mycon.cursor()

def create():

    name=input('Enter your name: ')

    dob=input('Enter the your date of birth in yyyy-mm-dd format: ')

    while True:

        if int(str(date.today())[0:4])-int(dob[0:4])<18:

            print('Must be above the age of 18')

            break

        else:

            telno=int(input('Enter your telephone number: '))

            if len(str(telno))!=8:

                print('Invalid telephone number')

                print('Please re-enter your telephone number')

                telno=int(input('Enter your telephone number: '))

            else:

                passwd=input('Enter a password for your account: ')

                print('Creating an account with the given details')

                mycursor.execute('select max(accno) from acc')

                mydata=mycursor.fetchall()
```

```

    accno=mydata[0][0]+1
    print('Your Account No is: ',accno)

    cmd="insert into acc(accno,name,dob,telno,passwd)
values(%s,'%s','%s',%s,'%s')"%(accno,name,dob,telno,passwd)

    mycursor.execute(cmd)
    mycon.commit()

    dep=int(input('Enter your intial deposit: '))
    if dep<100:
        print('Minimum deposit amount 100')
        dep=100
    elif dep>500000:
        print('Maximum deposit is 500000')
        dep=500000

    tt='d'

    cmd="insert into transac(accno,transtype,dot,transamt,balance)
values(%s,'%s','%s',%s,%s)"%(accno,tt,date.today(),dep,dep)

    mycursor.execute(cmd)
    mycon.commit()

    print('Thank you for using our service')
    break

def deposit():
    while True:
        accno=int(input('Enter your account number: '))
        mycursor.execute('select * from acc where accno={}'.format(accno))
        mydata=mycursor.fetchall()

```

```
if mycursor.rowcount!=0:
    passwd=input('Enter your password: ')
    if mydata[0][-1]==passwd:
        dep=int(input('Enter the amount you would like to deposit: '))
        tt='d'
        if dep>500000:
            print('Maximum deposit exceeded')
            dep=500000
        mycursor.execute('select * from transac where accno={}'.format(accno))
        mydata=mycursor.fetchall()
        balance=mydata[-1][-1]
        cmd="insert into transac(accno,transtype,dot,transamt,balance)
values(%s,'%s','%s',%s,%s)"%(accno,tt,date.today(),dep,balance+dep)
        mycursor.execute(cmd)
        mycon.commit()
        print('Transaction complete')
        break
    else:
        print('Incorrect Password')
        break
else:
    print('Invalid account no')
    break
def withdraw():
    while True:
```



```
accno=int(input('Enter your account number: '))
mycursor.execute('select * from acc where accno={}'.format(accno))
mydata=mycursor.fetchall()
if mycursor.rowcount!=0:
    passwd=input('Enter your password: ')
    if mydata[0][-1]==passwd:
        wit=int(input('Enter the amount you would like to withdraw (not more
than 500000): '))
        tt='w'
        if wit>500000:
            print('Max withdraw is 500000')
            wit=500000
        mycursor.execute('select * from transac where accno={}'.format(accno))
        mydata=mycursor.fetchall()
        balance=mydata[-1][-1]
        if wit>balance:
            print('Withdrawal amount is higher than balance')
            break
        else:
            cmd="insert into transac(accno,transtype,dot,transamt,balance)
values(%s,'%s','%s',%s,%s)"%(accno,tt,date.today(),wit,balance-wit)
            mycursor.execute(cmd)
            mycon.commit()
            print('Transaction complete')
            break
```

```
else:
```

```
    print('Incorrect Password')
```

```
    break
```

```
else:
```

```
    print('Invalid account no')
```

```
    break
```

```
def display():
```

```
    accno=int(input('Enter your account number: '))
```

```
    mycursor.execute('select * from acc where accno={}'.format(accno))
```

```
    mydata=mycursor.fetchall()
```

```
    if mycursor.rowcount!=0:
```

```
        passwd=input('Enter your password: ')
```

```
        if mydata[0][-1]==passwd:
```

```
            print()
```

```
            print('Name: ', mydata[0][1])
```

```
            print('Date of Birth: ',mydata[0][2])
```

```
            print('Telephone No: ',mydata[0][3])
```

```
            mycursor.execute('select * from transac where accno={}'.format(accno))
```

```
            mydata=mycursor.fetchall()
```

```
            print('Balance: ',mydata[-1][-1])
```

```
        else:
```

```
            print('Incorrect Password')
```

```
    else:
```

```
        print('Invalid account no')
```

```
def terminate():
```

```
accno=int(input('Enter your account number: '))
mycursor.execute('select * from acc where accno={}'.format(accno))
mydata=mycursor.fetchall()
if mycursor.rowcount!=0:
    passwd=input('Enter your password: ')
    if mydata[0][-1]==passwd:
        mycursor.execute('delete from acc where accno={}'.format(accno))
        mycon.commit()
        mycursor.execute('delete from transac where accno={}'.format(accno))
        mycon.commit()
        print("Account terminated")
    else:
        print('Incorrect Password')
else:
    print('Invalid account no')
def transfer():
    while True:
        accno1=int(input('Enter your account number: '))
        mycursor.execute('select * from acc where accno={}'.format(accno1))
        mydata1=mycursor.fetchall()
        if mycursor.rowcount!=0:
            passwd=input('Enter your password: ')
            if mydata1[0][-1]==passwd:
                accno2=int(input('Enter the account number to which you want to
transfer: '))
```

```

mycursor.execute('select * from acc where accno={}'.format(accno2))
mydata1=mycursor.fetchall()
if mycursor.rowcount!=0:
    tran=int(input('Enter the amount you would like to transfer: '))
    mycursor.execute('select * from transac where
accno={}'.format(accno1))
    mydata1=mycursor.fetchall()
    balance1=mydata1[-1][-1]
    if tran>balance1:
        print('Transfer amount is higher than balance')
        break
    else:
        tt='w'
        cmd1="insert into transac(accno,transtype,dot,transamt,balance)
values(%s,'%s','%s',%s,%s)"%(accno1,tt,date.today(),tran,balance1-tran)
        mycursor.execute(cmd1)
        tt='d'
        mycursor.execute('select * from transac where
accno={}'.format(accno2))
        mydata2=mycursor.fetchall()
        balance2=mydata2[-1][-1]
        cmd2="insert into transac(accno,transtype,dot,transamt,balance)
values(%s,'%s','%s',%s,%s)"%(accno2,tt,date.today(),tran,balance2+tran)
        mycursor.execute(cmd2)
        mycon.commit()
        print('Transaction complete')

```

```

        break
    else:
        print('Invalid account no')
        break
    else:
        print('Incorrect Password')
        break
    else:
        print('Invalid account no')
        break
def trans_d():
    accno=int(input('Enter your account number: '))
    mycursor.execute('select * from acc where accno={}'.format(accno))
    mydata=mycursor.fetchall()
    if mycursor.rowcount!=0:
        name=mydata[0][1]
        passwd=input('Enter your password: ')
        if mydata[0][-1]== passwd:
            mycursor.execute('select * from transac where accno={}'.format(accno))
            mydata=mycursor.fetchall()
            print()
            print('Name: ',name)
            print()
            print('TransType'+'\t','DateOfTrans'+'\t','TransAmt'+'\t','Balance')
            for x in range(len(mydata)):

```

```
tt=mydata[x][1]
if tt=='d':
    tt='Deposit '
else:
    tt='Withdrawal'
dot=str(mydata[x][2])+'\t'*2
ta=str(mydata[x][3])
bal=mydata[x][4]
ta+=' '*(8-len(ta))+'\t'
print(tt+'\t',dot,ta,str(bal)+'\t')
```

```
else:
```

```
    print('Incorrect password')
```

```
else:
```

```
    print('Invalid account no')
```

```
def ch_pass():
```

```
    accno=int(input('Enter your account number: '))
```

```
    mycursor.execute('select * from acc where accno={}'.format(accno))
```

```
    mydata=mycursor.fetchall()
```

```
    x=input('Enter your existing password: ')
```

```
    if mydata[0][-1]==x:
```

```
        while True:
```

```
            z=input('Enter the new password: ')
```

```
            y=input('Confirm the new password: ')
```

```
            if y!=z:
```



```
        print('Try again')
        break
    else:
        mycursor.execute("update acc set passwd='{}' where
accno={}".format(y,accno))
        mycon.commit()
        print('Password changed')
        break
    else:
        print ('Incorrect password')

print('Welcome To Axios Holdings')
while True:
    print()
    print('M E N U')
    print('1. Create Account')
    print('2. Deposit')
    print('3. Withdraw')
    print('4. Transfer')
    print('5. Display Account Details')
    print('6. Display Transaction Details')
    print('7. Change Password')
    print('8. Terminate')
    print('9. Exit')
    ch=int(input('Enter your choice: '))
```

```
if ch==1:
    create()
elif ch==2:
    deposit()
elif ch==3:
    withdraw()
elif ch==4:
    transfer()
elif ch==5:
    display()
elif ch==6:
    trans_d()
elif ch==7:
    ch_pass()
elif ch==8:
    terminate()
elif ch==9:
    print('Thank You For Using Our Service')
    break
else:
    print('Invalid Choice')
    break
mycon.close()
```

INPUT/OUTPUT:

Welcome To Axios Holdings

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 1

Enter your name: Max Weston

Enter your date of birth in yyyy-mm-dd format: 2005-04-04

Must be above the age of 18

M E N U

1. Create Account

2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 1

Enter your name: Max Weston

Enter your date of birth in yyyy-mm-dd format: 1999-04-04

Enter your telephone number: 0

Invalid telephone number

Please re-enter your telephone number

Enter your telephone number: 69026131

Enter your telephone number: 69026131

Enter a password for your account: west1uk

Creating an account with the given details

Your Account No is: 103

Enter your initial deposit: 0

Minimum deposit amount 100

Thank you for using our service

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 5

Enter your account number: 103

Enter your password: west1u

Incorrect Password

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 5

Enter your account number: 103

Enter your password: west1uk

Name: Max Weston

Date of Birth: 1999-04-04

Telephone No: 69026131

Balance: 100

M E N U

1. Create Account
2. Deposit
3. Withdraw

4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 6

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 6

Enter your account number: 103

Enter your password: west1uk

Name: Max Weston

TransType	DateOfTrans	TransAmt	Balance
Deposit	2021-01-30	100	100

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 2

Enter your account number: 103

Enter your password: west1uk

Enter the amount you would like to deposit: 2500

Transaction complete

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 3

Enter your account number: 103

Enter your password: west1uk

Enter the amount you would like to withdraw (not more than 500000): 3000

Withdrawal amount is higher than balance

M E N U

1. Create Account
2. Deposit
3. Withdraw

4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 3

Enter your account number: 103

Enter your password: west1uk

Enter the amount you would like to withdraw (not more than 500000): 250

Transaction complete

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate

9. Exit

Enter your choice: 6

Enter your account number: 103

Enter your password: west1uk

Name: Max Weston

TransType	DateOfTrans	TransAmt	Balance
Deposit	2021-01-30	100	100
Deposit	2021-01-30	2500	2600
Withdrawal	2021-01-30	250	2350

M E N U

1. Create Account

2. Deposit

3. Withdraw

4. Transfer

5. Display Account Details

6. Display Transaction Details

7. Change Password

8. Terminate

9. Exit

Enter your choice: 5

Enter your account number: 102

Enter your password: maximluvsrus128

Name: Maxim Ulyanov

Date of Birth: 2001-10-01

Telephone No: 94474612

Balance: 1600

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 6

Enter your account number: 102

Enter your password: maximluvsrus128

Name: Maxim Ulyanov

TransType	DateOfTrans	TransAmt	Balance
Deposit	2019-06-30	1600	1600

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 4

Enter your account number: 102

Enter your password: maximluvsrus128

Enter the account number to which you want to transfer: 103

Enter the amount you would like to transfer: 2000

Transfer amount is higher than balance

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 4

Enter your account number: 102

Enter your password: maximluvsrus128

Enter the account number to which you want to transfer: 103

Enter the amount you would like to transfer: 1000

Transaction complete

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 6

Enter your account number: 102

Enter your password: maximluvsrus

Incorrect password

M E N U

1. Create Account
2. Deposit
3. Withdraw

4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 6

Enter your account number: 102

Enter your password: maximluvsrus128

Name: Maxim Ulyanov

TransType	DateOfTrans	TransAmt	Balance
Deposit	2019-06-30	1600	1600
Withdrawal	2021-01-30	1000	600

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details

6. Display Transaction Details

7. Change Password

8. Terminate

9. Exit

Enter your choice: 6

Enter your account number: 103

Enter your password: west1uk

Name: Max Weston

TransType	DateOfTrans	TransAmt	Balance
Deposit	2021-01-30	100	100
Deposit	2021-01-30	2500	2600
Withdrawal	2021-01-30	250	2350
Deposit	2021-01-30	1000	3350

M E N U

1. Create Account

2. Deposit

3. Withdraw

4. Transfer

5. Display Account Details

6. Display Transaction Details

7. Change Password

8. Terminate

9. Exit

Enter your choice: 5

M E N U

1. Create Account

2. Deposit

3. Withdraw

4. Transfer

5. Display Account Details

6. Display Transaction Details

7. Change Password

8. Terminate

9. Exit

Enter your choice: 5

Enter your account number: 101

Enter your password: iamkhalil07

Name: Khalil Bellamy

Date of Birth: 2000-09-09

Telephone No: 95526426

Balance: 1230

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 7

Enter your account number: 101

Enter your existing password: iamkhalil07

Enter the new password: speyside12%

Confirm the new password: speyside12

Try again

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 7

Enter your account number: 101

Enter your existing password: iamkhalil07

Enter the new password: speyside12%

Confirm the new password: speyside12%

Password changed

M E N U

1. Create Account

2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 5

Enter your account number: 101

Enter your password: iamkhalil07

Incorrect Password

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate

9. Exit

Enter your choice: 5

Enter your account number: 101

Enter your password: speyside12%

Name: Khalil Bellamy

Date of Birth: 2000-09-09

Telephone No: 95526426

Balance: 1230

M E N U

1. Create Account

2. Deposit

3. Withdraw

4. Transfer

5. Display Account Details

6. Display Transaction Details

7. Change Password

8. Terminate

9. Exit

Enter your choice: 8

Enter your account number: 103

Enter your password: west1uk

Account terminated

M E N U

1. Create Account
2. Deposit
3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 5

Enter your account number: 103

Invalid account no

M E N U

1. Create Account
2. Deposit

3. Withdraw
4. Transfer
5. Display Account Details
6. Display Transaction Details
7. Change Password
8. Terminate
9. Exit

Enter your choice: 9

Thank You For Using Our Service