LAPORAN TUGAS AKHIR SEMESTER 1
Dasar Pemrograman

ATM SYSTEM

Kelompok 6 :

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KATA PENGANTAR

Puji dan syukur kami panjatkan kepada Tuhan Yang Maha Esa, yang telah melimpahkan rahmat dan hidayah-Nya kepada kami, sehingga kami dapat menyelesaikan tugas proposal bidang studi pemrograman dengan baik.

Proposal ini telah kami susun dengan maksimal tanpa ada halangan yang berarti. Proposal ini disusun untuk memenuhi tugas akhir mata kuliah semester 1 yang diampu oleh Ibu Elah Nurlelah, S.KOM, selaku dosen mata kuliah Dasar Pemrograman. Untuk itu kami menyampaikan banyak terima kasih kepada semua pihak yang telah membantu dalam pembuatan proposal ini.

Terlepas dari semua itu, Kami menyadari sepenuhnya bahwa masih ada kekurangan baik dari segi susunan kalimat maupun tata bahasanya. Oleh karena itu kami menerima segala saran dan kritik dari pembaca agar penulis dapat memperbaiki proposal ini.

Kami berharap semoga proposal tentang pemrograman yang baik ini dapat memberikan manfaat maupun inpirasi terhadap pembaca.

Jakarta, 10 Desember 2022

Penulis,

DAFTAR ISI

BAB 1
PENDAHULUAN

1.1 Latar Belakang

Program yang kami buat adalah untuk menampilkan sistem mesin ATM dengan menggunakan prosedur coding bahasa pemrograman Python yang digabungkan dengan SQL untuk memasukkan sejumlah data yang akan disimpan kedalam sebuah database.

Program ini dibuat untuk memudahkan user dalam mengelola tabungannya seperti transfer, menabung, dan tarik tunai tanpa perlu pergi ke bank.

1.2 Identifikasi Masalah

- ➤ Menggunakan perulangan bersarang (Nested Loop)
- ➤ Mengimport dan mengatur penggunaan Modul
- ➤ Menggabungkan Python dengan SQL

1.3 Tujuan

Tujuan disusunnya laporan ini adalah untuk menyelesaikan salah satu tugas mata pembelajaran kuliah khususnya mata pelajaran Dasar Pemrograman. Mengenali atau menggunakan Visual Studio Code dan aplikasi database MySQL Workbench dengan baik serta program sederhana menggunakan Python.

BAB 2
PEMBAHASAN

2.1 Landasan Teori

➢ Array, variabel yang mempunyai indeks.
➢ Nested Loop, perulangan yang ada di dalam perulangan.
➢ Percabangan, cara yang digunakan dalam pengambilan keputusan.
➢ List & Tuple, tipe data yang berisi satu atau beberapa nilai di dalamnya.
➢ Fungsi, grup program untuk melakukan tugas tertentu yang berulang.
➢ Method, jenis fungsi khusus yang di definisikan dalam definisi kelas
➢ Modul, digunakan untuk memecah sebuah program besar agar mudah dikelola.

2.2 Analisa Masalah

➢ Program di buat melalui Visual Studio Code dan MySQL Workbench

➢ Menjalankan berbagai proses seperti transfer, menabung dan penarikan uang tunai yang diatur sesuai dengan kemauan pengguna dan dimasukkan kedalam database

2.3 Coding

```python
import pymysql
import random

con = pymysql.connect(host='localhost', port=3306, database='atm', user='root', password='SQLpass')

def line():
    print('*******************************************************************')
def space():
    print('*                                                                 *')

def main():
    print()
    line()
    space()
    print('*\t\t    WELCOME TO ATM SYSTEM\t\t\t*')
    space()
    line()
    print('1. Login')
    print('0. Register')

    n = int(input('\nEnter Option : '))
    PIN = ''
    Username = ''
    Amount = ''
    userACC = ''
    secure = ''

    if n == 0:
        userACC = random.getrandbits(32)
        name = input('Enter Name : ')
        pw = int(input('Enter 6 Digits PIN : '))
        dpst = int(input('Enter starting amount you want to deposite : '))
        print('\033[93m'+'Security Question!'+'\033[0m')
        conf = input('What is the name of your favorite childhood friend? : ')

        Username = name
        PIN = pw
        Amount = dpst
        secure = conf
        val = (userACC,Username,PIN,Amount,secure)
        sql = "INSERT INTO client(userACC, Username, PIN, Amount, secure) VALUES (%s, %s, %s, %s, %s)"
        cur = con.cursor()

        cur.execute(sql,val)
        # account information
        print()
        line()
        print('\033[92m'+'\t\tYour account has been created\n'+'\033[0m')
        cur.execute("""SELECT userACC FROM atm.client where PIN='%s' """ % (PIN))
        konfID = cur.fetchone()
        print('Account Number     :',konfID)
        cur.execute("""SELECT Username FROM atm.client where PIN='%s' """ % (PIN))
        konfUname = cur.fetchone()
        print('Username\t    :',konfUname)
        cur.execute("""SELECT PIN FROM atm.client where PIN='%s' """ % (PIN))
        konfPIN = cur.fetchone()
        print('PIN\t\t    :',konfPIN)
        cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (PIN))
        konfAmount = cur.fetchone()
        print('Deposite\t    :',konfAmount)
        cur.execute("""SELECT secure FROM atm.client where PIN='%s' """ % (PIN))
        konfScr = cur.fetchone()
        print('Security Question  :',konfScr)
        print('\033[93m'+"\n\t\tDON'T SHARE THIS INFORMATION !"+'\033[0m')
        line()
        con.commit()
        main()
```

```python
    elif n == 1:
        pwd = int(input('Enter your 6 digits PIN : '))
        cur = con.cursor()
        cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
        sum = cur.fetchone()
        def choice():
            print('1. Status\t\t3. Lodgement\t\t5. Change PIN')
            print('2. Withdraw\t\t4. Transfer\t\t6. Quit')

        if cur.rowcount == 1:
            print()
            line()
            print('*'+'\033[92m'+'\t\t\tLOGIN SUCCESSFUL\t\t\t'+'\033[0m'+'*')
            line()
            choice()
            act = int(input('\nEnter Option : '))
            if act == 1:
                print()
                line()
                print ('\t\tYou Have',sum,'On Your Account')
                line()
                print()
                con.commit()
                repeat()
            elif act == 2:
                print()
                line()
                print ('\t\tYou Have',sum,'On Your Account')
                line()
                wd = int(input('How much you want to withdraw : '))
                cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
                col = cur.fetchone()
                x = list(col)
                for i in x:
                    z = (int(i))
                    c = z - wd
                cur.execute("UPDATE client SET Amount='%s' where PIN='%s' " % (c,pwd))
                cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
                update = cur.fetchone()
                print()
                print('\033[92m'+'Your new balance is',update,'\033[0m')
                line()
                con.commit()
                repeat()
            elif act == 3:
                print()
                line()
                print ('\t\tYou Have',sum,'On Your Account')
                line()
                dep = int(input('How much you want to lodge : '))
                cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
                col = cur.fetchone()
                x = list(col)
                for i in x:
                    z = (int(i))
                    c = z + dep
                cur.execute("UPDATE client SET Amount='%s' where PIN='%s' " % (c,pwd))
                cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
                update = cur.fetchone()
                print()
                print('\033[92m'+'Your new balance is',update,'\033[0m')
                line()
                con.commit()
                repeat()
```

```python
            elif act == 4:
                print()
                line()
                print ('\t\tYou Have',sum,'On Your Account')
                line()
                to = input('Enter account number to transfer : ')
                tr = int(input('How much you want to transfer : '))
                cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
                d = cur.fetchone()
                x = list(d)
                for i in x:
                    z = (int(i))
                    cd = z - tr
                cur.execute("UPDATE client SET Amount='%s' where PIN='%s' " % (cd,pwd))
                cur.execute("""SELECT Amount FROM atm.client where PIN='%s' """ % (pwd))
                update = cur.fetchone()
                print()
                print('\033[92m'+'Your new balance is',update,'\033[0m')
                line()
                cur.execute("""SELECT Amount FROM atm.client where userACC='%s' """ % (to))
                k = cur.fetchone()
                x = list(k)
                for i in x:
                    z = (int(i))
                    ck = z + tr
                cur.execute("UPDATE client SET Amount='%s' where userACC='%s' " % (ck,to))
                con.commit()
                repeat()
            elif act == 5:
                change = int(input('Type New PIN : '))
                cur.execute("UPDATE client SET PIN='%s' where PIN='%s' " % (change,pwd))
                print()
                line()
                print('\033[92m'+'\t\t    Your PIN Has Been Change'+'\033[0m')
                line()
                con.commit()
                repeat()
            elif act == 6:
                end()
            else:
                print('\033[91m' + 'Incorrect Option' + '\033[0m')
                main()
        else:
            print('\033[91m' + "Account doesn't exist" + '\033[0m')
            forgetPin()
        con.commit()
    else:
        print('\033[91m' + 'Incorrect Option' + '\033[0m')
        main()


def repeat():
    print('Do you want to make another transaction ?')
    answer = input('[ y / n ] : ')
    if answer == 'y':
        main()
    elif answer == 'n':
        end()
    else:
        print('\033[91m' + 'Incorrect Option' + '\033[0m')
        repeat()


def forgetPin():
    fP = input('\nForgot PIN ? [y/n] : ' )
    if fP == 'y':
        name = input('Input your username : ')
        cur = con.cursor()
        cur.execute("""SELECT PIN FROM atm.client where Username='%s' """ % (name))
        if cur.rowcount == 1:
            change = int(input('Type New PIN : '))
            cur.execute("UPDATE client SET PIN='%s' where Username='%s' " % (change,name))
            print()
            line()
            print('\033[92m'+'\t\t    Your PIN Has Been Change'+'\033[0m')
            line()
        else:
            print('\033[91m' + 'Incorrect Username' + '\033[0m')
            forgetUname()
        con.commit()
        main()
    elif fP == 'n':
        main()
    else:
        print('\033[91m' + 'Incorrect Option' + '\033[0m')
        forgetPin()
```

```python
def forgetUname():
    fU = input('\nForgot Username ? [y/n] : ' )
    if fU == 'y':
        scr = input('What is the name of your favorite childhood friend? : ')
        cur = con.cursor()
        cur.execute("""SELECT Username FROM atm.client where secure='%s' """ % (scr))
        if cur.rowcount == 1:
            cur.execute("""SELECT Username FROM atm.client where secure='%s' """ % (scr))
            confirm = cur.fetchone()
            print('\033[92m'+'Your username is',confirm,'\033[0m')
            forgetPin()
        else:
            print()
            line()
            print('\033[91m' + "\t\tYou Can't Access Your Account" + '\033[0m')
            line()
            main()
    elif fU == 'n':
        forgetPin()
    else:
        print('\033[91m' + 'Incorrect Option' + '\033[0m')
        forgetUname()


def end():
    print()
    line()
    space()
    print('*\t\t   Thankyou and Have a Nice Day\t\t\t*')
    space()
    line()
    con.commit()
    exit()

main()
repeat()
```

2.4 User Interface

Main Menu

```
**********************************************************************
*                                                                    *
*                      WELCOME TO ATM SYSTEM                          *
*                                                                    *
**********************************************************************
1. Login
0. Register

Enter Option :
```

Register (Daftar)

```
**********************************************************************
*                                                                    *
*                      WELCOME TO ATM SYSTEM                          *
*                                                                    *
**********************************************************************
1. Login
0. Register

Enter Option : 0
Enter Name : fik
Enter 6 Digits PIN : 123456
Enter starting amount you want to deposite : 50000
Security Question!
What is the name of your favorite childhood friend? : miwa


**********************************************************************
               Your account has been created

Account Number    : (1414891894,)
Username          : ('fik',)
PIN               : (123456,)
Deposite          : (50000,)
Security Question : ('miwa',)

               DON'T SHARE THIS INFORMATION !
**********************************************************************
```

Status

```
****************************************************************
*                                                              *
*                    WELCOME TO ATM SYSTEM                      *
*                                                              *
****************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456


****************************************************************
*                      LOGIN SUCCESSFUL                        *
****************************************************************
1. Status          3. Lodgement       5. Change PIN
2. Withdraw        4. Transfer        6. Quit

Enter Option : 1

****************************************************************
            You Have (50000,) On Your Account
****************************************************************

Do you want to make another transaction ?
[ y / n ] : n


****************************************************************
*                                                              *
*              Thankyou and Have a Nice Day                    *
*                                                              *
****************************************************************
```

Withdraw (Penarikan)

```
**************************************************************
*                                                            *
*                  WELCOME TO ATM SYSTEM                     *
*                                                            *
**************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456


**************************************************************
*                   LOGIN SUCCESSFUL                         *
**************************************************************
1. Status          3. Lodgement          5. Change PIN
2. Withdraw        4. Transfer           6. Quit

Enter Option : 2


**************************************************************
              You Have (50000,) On Your Account
**************************************************************
How much you want to withdraw : 20000

Your new balance is (30000,)
**************************************************************
Do you want to make another transaction ?
[ y / n ] : n


**************************************************************
*                                                            *
*               Thankyou and Have a Nice Day                 *
*                                                            *
**************************************************************
```

Lodgement (Menabung)

```
**************************************************************
*                                                            *
*                  WELCOME TO ATM SYSTEM                     *
*                                                            *
**************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456


**************************************************************
*                   LOGIN SUCCESSFUL                         *
**************************************************************
1. Status          3. Lodgement          5. Change PIN
2. Withdraw        4. Transfer           6. Quit

Enter Option : 3


**************************************************************
              You Have (30000,) On Your Account
**************************************************************
How much you want to lodge : 50000

Your new balance is (80000,)
**************************************************************
Do you want to make another transaction ?
[ y / n ] : n


**************************************************************
*                                                            *
*               Thankyou and Have a Nice Day                 *
*                                                            *
**************************************************************
```

Transfer

```
**************************************************************
*                                                            *
*                   WELCOME TO ATM SYSTEM                     *
*                                                            *
**************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456


**************************************************************
*                     LOGIN SUCCESSFUL                       *
**************************************************************
1. Status           3. Lodgement        5. Change PIN
2. Withdraw         4. Transfer         6. Quit

Enter Option : 4


**************************************************************
              You Have (80000,) On Your Account
**************************************************************
Enter account number to transfer : 1791186009
How much you want to transfer : 20000

Your new balance is (60000,)
**************************************************************
Do you want to make another transaction ?
[ y / n ] : n


**************************************************************
*                                                            *
*               Thankyou and Have a Nice Day                 *
*                                                            *
**************************************************************
```

Change PIN (Ganti PIN)

```
**************************************************************
*                                                            *
*                   WELCOME TO ATM SYSTEM                     *
*                                                            *
**************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456


**************************************************************
*                     LOGIN SUCCESSFUL                       *
**************************************************************
1. Status           3. Lodgement        5. Change PIN
2. Withdraw         4. Transfer         6. Quit

Enter Option : 5
Type New PIN : 112233


**************************************************************
                 Your PIN Has Been Change
**************************************************************
Do you want to make another transaction ?
[ y / n ] : n


**************************************************************
*                                                            *
*               Thankyou and Have a Nice Day                 *
*                                                            *
**************************************************************
```

Quit

```
***************************************************************
*                                                             *
*                   WELCOME TO ATM SYSTEM                     *
*                                                             *
***************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456
Account doesn't exist

Forgot PIN ? [y/n] : n

***************************************************************
*                                                             *
*                   WELCOME TO ATM SYSTEM                     *
*                                                             *
***************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 112233

***************************************************************
*                        LOGIN SUCCESSFUL                     *
***************************************************************
1. Status           3. Lodgement          5. Change PIN
2. Withdraw         4. Transfer           6. Quit

Enter Option : 6

***************************************************************
*                                                             *
*              Thankyou and Have a Nice Day                   *
*                                                             *
***************************************************************
```

Forgot PIN (Lupa PIN)

```
***************************************************************
*                                                             *
*                   WELCOME TO ATM SYSTEM                     *
*                                                             *
***************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456
Account doesn't exist

Forgot PIN ? [y/n] : y
Input your username : fik
Type New PIN : 123456

***************************************************************
                  Your PIN Has Been Change
***************************************************************

***************************************************************
*                                                             *
*                   WELCOME TO ATM SYSTEM                     *
*                                                             *
***************************************************************
1. Login
0. Register

Enter Option :
```

Forget Username (Lupa Username)

```
******************************************************************
*                                                                *
*                     WELCOME TO ATM SYSTEM                       *
*                                                                *
******************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 112233
Account doesn't exist

Forgot PIN ? [y/n] : y
Input your username : jo
Incorrect Username

Forgot Username ? [y/n] : y
What is the name of your favorite childhood friend? : miwa
Your username is ('fik',)

Forgot PIN ? [y/n] : y
Input your username : fik
Type New PIN : 112233

    ************************************************************
                    Your PIN Has Been Change
    ************************************************************

    ************************************************************
    *                                                          *
    *                 WELCOME TO ATM SYSTEM                     *
    *                                                          *
    ************************************************************
1. Login
0. Register

Enter Option : █
```
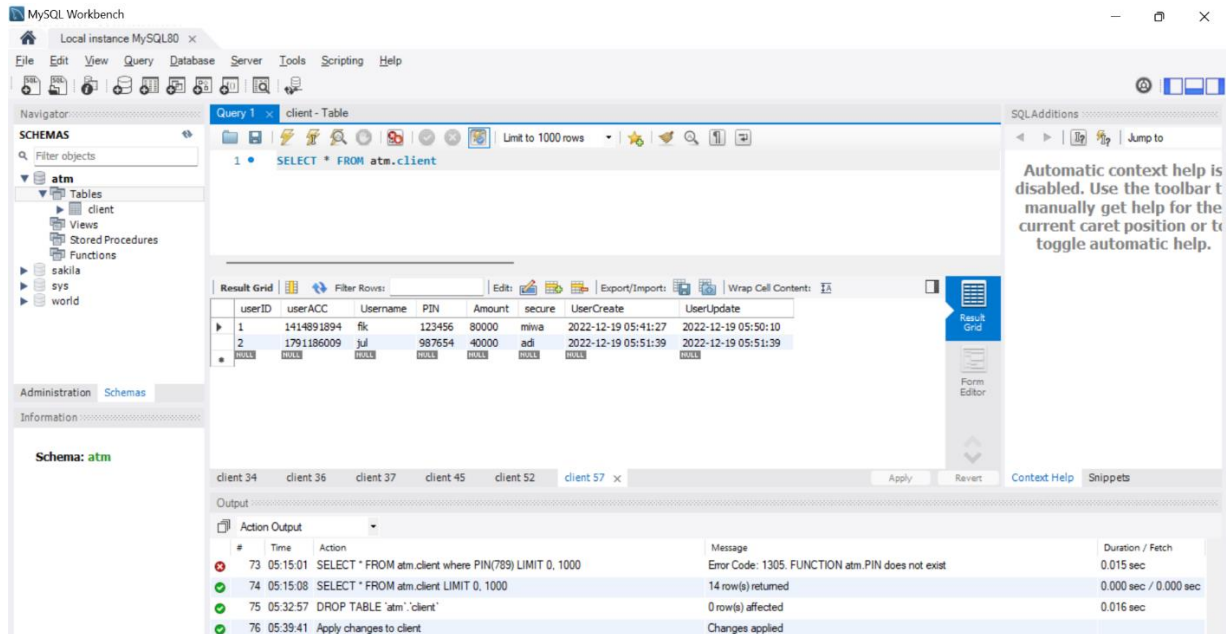
Forget Security Question (Lupa pertanyaan keamanan)

```
******************************************************************
*                                                                *
*                     WELCOME TO ATM SYSTEM                       *
*                                                                *
******************************************************************
1. Login
0. Register

Enter Option : 1
Enter your 6 digits PIN : 123456
Account doesn't exist

Forgot PIN ? [y/n] : y
Input your username : re
Incorrect Username

Forgot Username ? [y/n] : y
What is the name of your favorite childhood friend? : ki

    ************************************************************
                 You Can't Access Your Account
    ************************************************************

    ************************************************************
    *                                                          *
    *                 WELCOME TO ATM SYSTEM                     *
    *                                                          *
    ************************************************************
1. Login
0. Register

Enter Option : █
```

Database

BAB 3
PENUTUP

Dari pembahasan di atas dapat disimpulkan bahwa program berbasis Python yang kami buat hampir sama dengan mesin atm pada umumnya. Letak perbedaanya yaitu program kami dijalankan dengan command prompt, data pengguna akan masuk ke dalam database MySQL.

Kami menambahkan fitur dimana ketika lupa pin, pengguna bisa mengatasinya secara manual di sistem atm ini. Dimana diharuskan untuk mengisi pertanyaan keamanan untuk menghindari pencurian akun.

Demikian proposal yang kami buat, kami harap proposal ini bisa bermanfaat bagi semuanya dan dapat menambah pengetahuan mengenai bagaimana menjalankan mesin ATM dalam Visual Studio Code serta cara kerja dari sebuah database. Sekian dan terimakasih.