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INTRODUCTION

The project is designed for Electricity Department Management in Python. The title of the project is Electricity Department Management System. In this project an employee can Store Details, Generate Bills of Consumers. At the same time they can Modify and Delete Consumer's Details, also details of consumer can be displayed in Python. On the Other Hand a Consumer can get information about their connection and bills.

The Project take care of Privacy: Both the Employee and Consumer requires credentials to login to their account, they get 3 attempts, if in all 3 attempts wrong credentials are entered then the account gets blocked.

SOURCE CODE

```
#Project(By Tanmay Newatia)


def vspacing():
    print("\n",end=" ")


def hspacing():
    print("\t "*10,"\t",end=" ")


def line():
    print("-"*195)


def invalin():
    print("Invalid Input, Please try again.".center(195,"!"))


def con1():
    global con,cur
    con=mysql.connector.connect(host='localhost',user='root',password='root')
    #if con.is_connected:
        #print("Connection Established.")                    #For Checking Connection with Mysql
    cur=con.cursor()


def emplogin():
    global rowcount,i,con,cur,bdata,empid,log_in_v,cur2,con2,tsli
    con1()
    con2=mysql.connector.connect(host='localhost',user='root',password='root',database='emplogindetails')
    cur2=con2.cursor()
```

```
for i in range(3,0,-1):
    vspacing()
    hspacing()
    empid=str(input("Employee ID : "))
    query='select * from emplogindetails where UserID="{}"'.format(empid)
    cur2.execute(query)
    bdata=cur2.fetchall()
    rowcount=cur2.rowcount
    if rowcount==1:
        if bdata[0][2]=="BLOCKED":
            vspacing()
            print("Sorry! Your Account is Blocked, Please request for Unblocking.".center(195,"!"))
            break
        from getpass import getpass
        hspacing()
        emppass=getpass(prompt="\t\t\t\t\t\t\t\t\t\t\t Password : ", stream=None)
        query='select * from emplogindetails where UserID="{}" and Password="{}"'.format(empid,emppass)
        cur2.execute(query)
        cur2.fetchall()
        rowcount=cur2.rowcount
        if rowcount==1:
            from time import localtime
            log_in=localtime()
            log_in_v=str(log_in[0])+"-"+str(log_in[1])+"-"+str(log_in[2])+"  "+str(log_in[3])+":"+str(log_in[4])+":"+str(log_in[5])
            tsli=(log_in[3]*60+log_in[4])*60+log_in[5]                                    #tsli:- Totalsecondlogin
            query='insert into emplogs values("{}","{}",{},{})'.format(empid,log_in_v,"NULL","NULL")
            cur2.execute(query)
```

```
            con2.commit()
            vspacing()
            print("Successfully Logged In".center(195,'='))
            vspacing()
            hspacing()
            print("Hello",empid.capitalize())
            break
        elif i!=1:
            vspacing()
            print(("Incorrect Employee ID or Password, Please try again.({} Attempts Left)".format(i-1)).center(195,'!'))
        else:
            query="update emplogindetails set account_status='BLOCKED' where UserID='{}'".format(empid)
            cur2.execute(query)
            con2.commit()
            vspacing()
            print("Account Blocked.".center(195,'='))
    elif i!=1:
        vspacing()
        print("No User Found, Please try again.({} Attempts Left)".format(i-1).center(195,'!'))
    else:
        vspacing()
        print("Sorry, You Exceed the Attempts Limit.".center(195,"="))


def cuslogin():
    global rowcount,i,cur,con,cusid,cdata,sisu,na
    vspacing()
    hspacing()
```

```
cusid=str(input("Customer ID : "))
query='select * from cuslogindetails where CustomerID="{}"'.format(cusid)
cur.execute(query)
cdata=cur.fetchall()
crowcount=cur.rowcount
while crowcount==0:
    vspacing()
    print("No Account Found. Please Try Again or Create New Account.".center(195,"!"))
    vspacing()
    hspacing()
    na=str(input("""Do you want to Sign 'U'p
                \t\t\t\t\t\t\t or Try 'A'gain
                \t\t\t\t\t\t\t or 'Q'uit? : """))
    while na not in ('U','u','A','a','q','Q'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        na=str(input("""Do you want to Sign 'U'p
                    \t\t\t\t\t\t\t or Try 'A'gain
                    \t\t\t\t\t\t\t or 'Q'uit? : """))
    if na in ("U","u"):
        break
    if na in ("a","A"):
        vspacing()
        hspacing()
        cusid=str(input("Customer ID : "))
```

```
        query='select * from cuslogindetails where CustomerID="{}"'.format(cusid)
        cur.execute(query)
        cdata=cur.fetchall()
        crowcount=cur.rowcount
    if na in ("Q","q"):
        vspacing()
        print("Thanks for Using Electricity Department Application.".center(195,"="))
        break
if crowcount!=0 or na in ("a","A"):
    for i in range(3,0,-1):
        if na not in ("a","A","U","u") and sisu not in ("I","i"):
            vspacing()
            hspacing()
            cusid=str(input("Customer ID : "))
            query='select * from cuslogindetails where CustomerID="{}"'.format(cusid)
            cur.execute(query)
            cdata=cur.fetchall()
            crowcount=cur.rowcount
        if crowcount==1:
            if cdata[0][3]=="BLOCKED":
                vspacing()
                print("Sorry! Your Account is Blocked, Please request for Unblocking.".center(195,"!"))
                break
            from getpass import getpass
            hspacing()
            cuspass=getpass(prompt="\t\t\t\t\t\t\t\t\t\t\t Password : ", stream=None)
            query='select * from cuslogindetails where CustomerID="{}" and Password="{}"'.format(cusid,cuspass)
```

```
            cur.execute(query)
            cur.fetchall()
            c2rowcount=cur.rowcount
            if c2rowcount==1:
                vspacing()
                print("Successfully Logged In".center(195,'='))
                vspacing()
                hspacing()
                print("Hello",cusid.capitalize())
                break
            elif i!=1:
                vspacing()
                print(("Incorrect Customer ID or Password, Please try again.({} Attempts Left)".format(i-1)).center(195,'!'))
            else:
                query="update cuslogindetails set account_status='BLOCKED' where CustomerID='{}'".format(cusid)
                cur.execute(query)
                con.commit()
                vspacing()
                print("Account Blocked.".center(195,'='))
                query='select * from cuslogindetails where CustomerID="{}"'.format(cusid)
                cur.execute(query)
                cdata=cur.fetchall()


def finaldec():
    global userdec
    vspacing()
    hspacing()
```

```
    userdec=str(input("Are you sure, 'Y'es/'N'o  : "))
    while userdec not in ('Y','y','N','n'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        userdec=str(input("Are you sure, 'Y'es/'N'o : "))


def databasecreator():
    global con,cur,databasename,confirmation
    con1()
    cur.execute("create database if not exists {}".format('employee'))
    databasename='employee'
    con=mysql.connector.connect(host='localhost',user='root',password='root',database=databasename)
    cur=con.cursor()


def tablecreator():
    global con,cur,databasename,tablename,columnlist,columntypelist,tabledatatype,choicetable
    cur.execute("create table if not exists cus_info(Customer_No bigint primary key,Meter_No varchar(30)
unique,Date_of_connection date not null,Name varchar(50) not null,Address varchar(200) not null,Mobile_No bigint not
null,Email_ID varchar(50) not null,Aadhar_Card_No bigint unique,BPL char(1) not null,BPLNo varchar(30) unique,Zone
varchar(30) not null,District varchar(30) not null,Tariff_Category varchar(50) not null,Sactioned_Load varchar(15) not null)")
    tablename='cus_info'
    cur.execute("create table if not exists bills(Customer_No bigint not null, Month varchar(30) not null, Billamount float not null,
foreign key bills(Customer_NO) references cus_info(Customer_No))")
    choicetable='bills'
    cur.execute("create table if not exists del_cus_info(Customer_No bigint primary key,Meter_No varchar(30)
unique,Date_of_connection date not null,Name varchar(50) not null,Address varchar(200) not null,Mobile_No bigint not
null,Email_ID varchar(50) not null,Aadhar_Card_No bigint unique,BPL char(1) not null,BPLNo varchar(30) unique,Zone
varchar(30) not null,District varchar(30) not null,Tariff_Category varchar(50) not null,Sactioned_Load varchar(15) not
null,Reason varchar(50))")
```

```
def recordcreator():
    global con,cur,databasename,tablename,columnlist,columntypelist,tabledatatype,choicetable
    cur.execute("desc {}".format(tablename))
    tabledata=list(cur.fetchall())
    rowcount=cur.rowcount                                          #no of rows from table received
    cur.execute("select Customer_No,Meter_No from {}".format(tablename))
    tabledata1=cur.fetchall()
    tdl=[]                                                         #tdl:-tabledatalist
    tdtl=[]                                                        #tdlt:-tabledatatypelist
    col=[]                                                         #col:- columnconstraintlist
    for i in range(0,rowcount):
        tdl.append(tabledata[i][0])
        tdtl.append(tabledata[i][1])
        col.append(tabledata[i][3])
    cur.execute("select * from {}".format(tablename))
    recorddata=cur.fetchall()
    rowcount=cur.rowcount
    if recorddata!=[]:
        vspacing()
        print("Last Entered Record is: ".center(195,' '))
        vspacing()
        for i in range(0,len(tabledata)):
            print("\t"*10,tabledata[i][0].center(20,' '),":",str(recorddata[rowcount-1][i]).center(20,' '))
    else:
        vspacing()
        print("No Records Present.".center(195,'-'))
```

```
while True:
    vl=[]                                                    #valuelist to be empty(assigning valuelist)
    i=0
    while i<len(tdl):
        if 'double' not in tdtl[i] and 'float' not in tdtl[i] and 'int' not in tdtl[i]:
            vspacing()
            hspacing()
            vs="Enter Value for , "+tdl[i].capitalize()+" : "                    #vs: valuestring
            if tdl[i]=="Tariff_Category":
                vst="Enter Value for , "+tdl[i].capitalize()+''' \n\t\t\t\t\t\t\t\t\t\t\t\tDO : Domestic
                                                \t\t\t\tND : Non-Domestic
                                                \t\t\t\tIN : Industrial
                                                \t\t\t\tAG : Agriculture
                                                \t\t\t\tPU : Public Utilities
                                                \t\t\t\tAD : Advertisements
                                                \t\t\t\tCS : Charging Station'''+": "
                vd=str(input(vst))
                tcd={"DO":"Domestic","ND":"Non-Domestic","IN":"Industrial","AG":"Agriculture","PU":"Public
Utilities","AD":"Advertisements","CS":"Charging Station"}
                while vd.upper() not in tcd.keys():
                    vspacing()
                    print("Invalid Data Entered, Please try again.".center(195,"!"))
                    vspacing()
                    hspacing()
                    vd=str(input(vst))
                vd=tcd[vd]
            elif tdl[i]=="Date_of_connection":
                vst="Enter Value for , "+tdl[i].capitalize()+' (YYYY-MM-DD) : '
```

```
    vd=str(input(vst))
    while len(vd)<10 or vd.isalpha():
        vspacing()
        print("Invalid Data Entered, Please try again.".center(195,"!"))
        vspacing()
        hspacing()
        vd=str(input(vst))
elif tdl[i]=="Meter_No":
    vd=str(input(vs))
    for a in range(0,len(tabledata1)):
        while vd==tabledata1[a][1]:
            vspacing()
            print("Duplicate Meter_No Entered, Please try again.".center(195,"!"))
            vspacing()
            hspacing()
            vd=str(input(vs))
else:
    vd=str(input(vs))                                                    #vd: valuedata
while len(vd)<1 or vd.isspace():
    vspacing()
    print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
    vspacing()
    hspacing()
    vd=str(input(vs))
if vd.isalnum() or vd.isalpha() or "-" in vd or "@" in vd or "." in vd or "," in vd or " " in vd:
    if "date" in tdtl[i] and "-" in vd:
        vdc="'{}'".format(vd)
```

```
                vl.append(vdc)
                i+=1
            elif vd not in ("NULL","null") and "date" not in tdtl[i]:
                vdc="'{}'".format(vd)                                   #vdc: valuedataconversion into format of
entering data into Mysql
                vl.append(vdc)                                          #vl: valuelist
                i+=1
            elif vd in ("NULL","null"):
                vl.append(vd)
                i+=1
            else:
                vspacing()
                print("Invalid Data Entered, Please try again.".center(195,"!"))
                continue
        else:
            vspacing()
            print("Invalid Data Entered, Please try again.".center(195,"!"))
            continue
    else:
        vspacing()
        hspacing()
        vs="Enter Value for , "+tdl[i]+" : "                            #vs: valuestring
        if tdl[i]=="Customer_No":
            vd=input(vs)
            for a in range(0,len(tabledata1)):
                while int(vd)==tabledata1[a][0]:
                    vspacing()
                    print("Duplicate Customer_No Entered, Please try again.".center(195,"!"))
```

```
                vspacing()
                hspacing()
                vd=input(vs)
        else:
            vd=input(vs)
        while len(vd)<1 or vd.isspace():
            print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
            vd=str(input(vs))
        if vd.isnumeric() or vd.isdecimal():
            vdc=float(vd)
            vdc=str(vd)
            vl.append(vdc)
            i+=1
        else:
            vspacing()
            print("Invalid Data Entered, Please try again.".center(195,"!"))
            continue
string=vl[0]
for i in range(1,len(vl)):
    string+=', '+vl[i]
query="insert into {} values({})".format(tablename,string)
cur.execute(query)
con.commit()
vspacing()
print("Record Saved.".center(195,'='))
vspacing()
hspacing()
```

```
        cnr=str(input("Do you want to Enter another record? ('Y'es/'N'o) : "))                    #cnr:- choice for new record
        while cnr not in ('N','n') and cnr not in ('Y','y'):
            vspacing()
            invalin()
            vspacing()
            hspacing()
            cnr=str(input("Do you want to Enter another record? ('Y'es/'N'o) : "))
        if cnr in ('N','n'):
            finaldec()
            if userdec in ('y','Y'):
                vspacing()
                print(("record entering database terminated".title()).center(195,'='))                    #"str".title()
function used
                con.close()
                logout()
                break
            if userdec in ('n','N'):
                break
        if cnr in ('Y','y'):
            vspacing()
            print("You can enter value for the record again.".center(195,'-'))



def login():
    global stage1
    vspacing()
    hspacing()
    stage1=str(input("""'E'mployee Login
```

```
                \t\t\t\t\t\t\t\t 'C'onsumer Login : """))
    while stage1 not in ('e','E','c','C','ADMIN'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        stage1=str(input("""'E'mployee Login
                    \t\t\t\t\t\t\t\t 'C'onsumer Login : """))


def shutdown():
    global stage1,userdec
    vspacing()
    hspacing()
    stage1=str(input("""'E'mployee Login
                \t\t\t\t\t\t\t\t 'C'onsumer Login
                \t\t\t\t\t\t\t\t To 'Q'uit       : """))
    while stage1 not in ('e','E','C','c','q','Q','ADMIN'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        stage1=str(input("""'E'mployee Login
                    \t\t\t\t\t\t\t\t 'C'onsumer Login
                    \t\t\t\t\t\t\t\t To 'Q'uit       : """))



def taskemp():
```

```
    global stage2
    vspacing()
    hspacing()
    stage2=str(input("""Enter 'N'ew Record
                    \t\t\t\t\t\t\t\t'B'ill Generation
                    \t\t\t\t\t\t\t\t'F'ind Consumer
                    \t\t\t\t\t\t\t\t To 'D'elete/ To 'M'odify Record : """))


def recordsearcher():
    global con,cur,databasename,columnlist,columntypelist,tabledatatype,choicetable,userdec,primarycolumn,fv,stage2
    databasecreator()
    tablecreator()
    cur.execute("desc {}".format(tablename))
    data=cur.fetchall()
    for i in range(0,len(data)):
        if data[i][3]=='PRI' or data[i][3]=='MUL':
            primarycolumn=data[i][0]
    fvs="To Find {}:-".format(primarycolumn)                    #fvs:- findingvaluestring
    choice2=0
    userdec=0
    while True:
        if choice2 in ('T','t') and userdec in ('y','Y'):
            break
        vspacing()
        hspacing()
        fv=(input(fvs))                                         #fv:- findingvalue
        while len(fv)<1 or fv.isspace() or fv.isalpha():
```

```
    vspacing()
    print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
    vspacing()
    hspacing()
    fv=(input(fvs))
if fv.isnumeric() and len(fv)>=1:
    fv=int(fv)
query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
cur.execute(query)
data1=cur.fetchall()
while data1==[]:
    if userdec in ('Y','y'):
        break
    elif userdec==0:
        cstr="""No Record Found, Please try 'A'gain,
                \t\t\t\t\t\t\t\t or 'T'erminate Database :- """
        vspacing()
        hspacing()
        choice2=str(input(cstr))
        while choice2 not in ('A','a','T','t'):
            vspacing()
            invalin()
            vspacing()
            hspacing()
            choice2=str(input(cstr))
        if choice2 in ('T','t'):
            finaldec()
```

```
            if userdec in ('y','Y'):
                vspacing()
                if stage2 in ("F","f"):
                    print(("Consumer Finding Database terminated".title()).center(195,'='))
#"str".title() function used
                    con.close()
                    logout()
                elif stage1=="ADMIN":
                    print("Customer Information Database Terminated".center(195,"="))
                    admlogout()
                break
            elif userdec in ('n','N'):
                continue
        elif choice2 in ('A','a'):
            vspacing()
            hspacing()
            fv=(input(fvs))                                    #fv:- findingvalue
            while len(fv)<1 or fv.isspace() or fv.isalpha():
                vspacing()
                print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
                vspacing()
                hspacing()
                fv=(input(fvs))
            if fv.isnumeric() and len(fv)>=1:
                fv=int(fv)
            query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
            cur.execute(query)
            data1=cur.fetchall()
```

```
if choice2 not in ('t','T'):
    vspacing()
    print("Details of Consumer Number : {} are as follows".format(fv).center(195,'-'))
    vspacing()
    for i in range(1,len(data)):
        print("\t"*10,data[i][0].center(20,' '),":- ",str(data1[0][i]).center(20,' '))
    vspacing()
    hspacing()
    choice=str(input("Do you want to fetch bills of the consumer?('Y','N') :- "))
    while choice not in ('Y','y','N','n'):
        vspacing()
        hspacing()
        invalin()
        vspacing()
        hspacing()
        choice=str(input("Do you want to fetch bills of the consumer?('Y','N') :- "))
    if choice in ('Y','y'):
        tablecreator()
        cur.execute("desc {}".format(choicetable))
        data2=cur.fetchall()
        query1="select * from {} where {}={}".format(choicetable,primarycolumn,fv)
        cur.execute(query1)
        data3=cur.fetchall()
        if data3!=[]:
            vspacing()
            print("Past Bills of Consumer Number : {} are as follows".format(fv).center(195,'-'))
            vspacing()
```

```
            print("\t"*10,"Month".center(20," "),"Billamount".center(22," "))
            vspacing()
            for i in range(0,len(data3)):
                print("\t"*10,data3[i][1].center(19,' '),"  : ",str(data3[i][2]).center(19,' '))
        else:
            vspacing()
            print("No bills found.".center(195,'-'))
        vspacing()
        hspacing()
        choice1=str(input("Do you want to Search another record? ('Y','N'):- "))
    elif choice in ('N','n'):
        vspacing()
        hspacing()
        choice1=str(input("Do you want to Search another record? ('Y','N'):- "))
    while choice1 not in ('Y','y','N','n'):
        vspacing()
        hspacing()
        invalin()
        vspacing()
        hspacing()
        choice1=str(input("Do you want to Search another record? ('Y','N'):- "))
    if choice1 in ('N','n'):
        finaldec()
        if userdec in ('y','Y'):
            vspacing()
            if stage2 in ("F","f"):
                print(("Consumer Finding Database terminated".title()).center(195,'='))
#"str".title() function used
```

```
                con.close()
                logout()
            elif stage1=="ADMIN":
                print("Customer Information Database Terminated".center(195,"="))
                admlogout()
            break
        if userdec in ('n','N'):
            break
    if choice1 in ('Y','y'):
        vspacing()
        print("You can search another record.".center(195,'-'))


def billgeneration():
    global con,cur,databasename,tablename,columnlist,columntypelist,tabledatatype,choicetable,userdec,primarycolumn
    databasecreator()
    tablecreator()
    cur.execute("desc {}".format(tablename))
    data=cur.fetchall()
    for i in range(0,len(data)):
        if data[i][3]=='PRI' or data[i][3]=='MUL':
            primarycolumn=data[i][0]
    fvs="To Find {}:- ".format(primarycolumn)                    #fvs:- findingvaluestring
    choice2=0
    userdec=0
    while True:
        if choice2 in ('T','t') and userdec in ('y','Y'):
            break
```

```
vspacing()
hspacing()
fv=(input(fvs))                                          #fv:- findingvalue
while len(fv)<1 or fv.isspace() or fv.isalpha():
    vspacing()
    print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
    vspacing()
    hspacing()
    fv=(input(fvs))
if fv.isnumeric() and len(fv)>=1:
    fv=int(fv)
query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
cur.execute(query)
data1=cur.fetchall()
while data1==[]:
    if userdec in ('Y','y'):
        break
    if userdec in ('n','N'):
        vspacing()
        hspacing()
        fv=(input(fvs))                                  #fv:- findingvalue
        while len(fv)<1 or fv.isspace() or fv.isalpha():
            vspacing()
            print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
            vspacing()
            hspacing()
            fv=(input(fvs))
```

```
    if fv.isnumeric() and len(fv)>=1:
        fv=int(fv)
    query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
    cur.execute(query)
    data1=cur.fetchall()
elif userdec==0:
    cstr="""No Record Found, Please try 'A'gain,
          \t\t\t\t\t\t  or 'T'erminate Database :- """
    vspacing()
    hspacing()
    choice2=str(input(cstr))
    while choice2 not in ('A','a','T','t'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        choice2=str(input(cstr))
    if choice2 in ('T','t'):
        finaldec()
        if userdec in ('y','Y'):
            vspacing()
            print(("Bill Generation Database terminated".title()).center(195,'='))
            con.close()
            logout()
            break
        elif userdec in ('n','N'):
            continue
```

```
        elif choice2 in ('A','a'):
            vspacing()
            hspacing()
            fv=(input(fvs))                                    #fv:- findingvalue
            while len(fv)<1 or fv.isspace() or fv.isalpha():
                vspacing()
                print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
                vspacing()
                hspacing()
                fv=(input(fvs))
            if fv.isnumeric() and len(fv)>=1:
                fv=int(fv)
            query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
            cur.execute(query)
            data1=cur.fetchall()
    if choice2 not in ('t','T'):
        vspacing()
        for i in range(0,len(data)):
            print("\t"*10,data[i][0].center(20,' '),":",str(data1[0][i]).center(20,' '))
    vspacing()
    hspacing()
    dec=str(input("Do you want to generate bill of above consumer? ('Y','N') :- "))
    while dec not in ('Y','y','N','n'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
```

```
        dec=str(input("Do you want to generate bill of above consumer? ('Y','N') :- "))
    if dec in ('y','Y'):
        tablecreator()
        vspacing()
        hspacing()
        year=(input("Bill of Year :- "))
        while len(year)<4 or year.isspace():
            print("Invalid Data Entered, Please Enter Data in YYYY format.".center(195,"!"))
            year=(input("Bill of Year :- "))
        if len(year)==4 and year.isnumeric():
            year=int(year)
        vspacing()
        hspacing()
        month=eval(input("Bill of Month(s) (Month's Number) :- "))
        while len(month)<1:
            print("Invalid Data Entered, Please Enter a Month's Number.".center(195,"!"))
            month=eval(input("Bill of Month(s) :- "))

monthdic={1:"January",2:"February",3:"March",4:"April",5:"May",6:"June",7:"July",8:"August",9:"September",10:"October",11:
"November",12:"December"}
        alpmonth=''
        for i in month:
            while i not in (1,2,3,4,5,6,7,8,9,10,11,12):
                vspacing()
                print("Invalid Month entered, Please try again.".center(195,'!'))
                vspacing()
                hspacing()
                month=str(input("Bill of Month :- "))
```

```
    if i in (1,2,3,4,5,6,7,8,9,10,11,12):
        alpmonth+=monthdic[i]+"-"
alpmonth=alpmonth[0:len(alpmonth)-1]
vspacing()
hspacing()
prr=(input("Meter's Present Reading :- "))                                  #prr:- PresentReading
while len(prr)<1 or prr.isspace():
    vspacing()
    print("Invalid Data Entered / Invalid Data Entered, Please Enter Numeric Data.".center(195,"!"))
    vspacing()
    hspacing()
    prr=(input("Meter's Present Reading :- "))
if len(prr)>=1 and prr.isnumeric():
    prr=int(prr)
hspacing()
par=(input("Meter's Previous Reading :- "))                                  #par:- PastReading
while len(par)<1 or par.isspace():
    vspacing()
    print("Invalid Data Entered / Invalid Data Entered, Please Enter Numeric Data.".center(195,"!"))
    vspacing()
    hspacing()
    par=(input("Meter's Past Reading :- "))
if len(par)>=1 and par.isnumeric():
    par=int(par)
mf=1                                                                        #mf:- MultiplicationFactor
uu=prr-par
if data1[0][12]=="Domestic":
```

```
    if data1[0][13]<="2kW":
        fr=20
    if data1[0][13]>"2kW" and data1[0][13]<="5kW":
        fr=50
    if data1[0][13]>"5kW" and data1[0][13]<="15kW":
        fr=100
    if data1[0][13]>"15kW" and data1[0][13]<="25kW":
        fr=200
    if data1[0][13]>"25kW":
        fr=250
    if uu <= 200:
        ec=3
    elif uu > 200 and uu <= 400:
        ec=4.50
    elif uu > 400 and uu <= 800:
        ec=6.50
    elif uu > 800 and uu <=1200:
        ec=7.00
    elif uu > 1200:
        ec=8.00
if data1[0][12]=="Non-Domestic":
    if data1[0][13]<="3kVA":
        fr=250
        ec=6
    if data1[0][13]>"3kVA":
        fr=250
        ec=8.5
```

```
if data1[0][12]=="Industrial":
    fr=250
    ec=7.75
if data1[0][12]=="Agriculture":
    fr=125
    ec=1.50
if data1[0][12]=="Public Utilities":
    fr=250
    ec=6.25
if data1[0][12]=="Advertisement":
    fr=250
    ec=8.50
if data1[0][12]=="Charging Station":
    ec=4.25
    fr=1
fr=fr*(len(month))
total=(uu*mf*ec)+fr+((8/100)*(fr+(uu*mf*ec)))+((3.8/100)*(fr+(uu*mf*ec)))
monthc="'{}'".format(alpmonth+","+str(year))
cur.execute("select * from {}".format(choicetable))
data2=cur.fetchall()
choice3=0
for i in range(0,len(data2)):
    if fv==data2[i][0] and (alpmonth+","+str(year))==str(data2[i][1]):
        vspacing()
        print("You cannot generate bill as it already exists.".center(195,'='))
        vspacing()
        hspacing()
```

```
            choice3=str(input("Do you want to generate another bill? ('Y','N') :- "))
        if choice3==0:
            query="insert into {} values({},{},{})".format(choicetable,fv,monthc,total)
            cur.execute(query)
            con.commit()
            vspacing()
            print("Bill Generated as Below".center(195,'-'))
            cur.execute("desc {}".format(choicetable))
            data4=cur.fetchall()
            cur.execute("select * from {}".format(choicetable))
            data3=cur.fetchall()
            vspacing()
            for i in range(0,len(data3)):
                for j in range(0,len(data4)):
                    if fv==data3[i][0] and (alpmonth+","+str(year))==str(data3[i][1]):
                        print("\t"*10,data4[j][0].center(20,' '),":- ",str(data3[i][j]).center(20,' '))
            vspacing()
            hspacing()
            choice3=str(input("Do you want to generate another bill? ('Y','N') :- "))
    if dec in ('n','N'):
            vspacing()
            hspacing()
            choice3=str(input("Do you want to generate another bill? ('Y','N') :- "))
    while choice3 not in ('Y','y','N','n'):
        vspacing()
        invalin()
        vspacing()
```

```
        hspacing()
        choice3=str(input("Do you want to generate another bill? ('Y','N') :- "))
    if choice3 in ('Y','y'):
        vspacing()
        print("You can generate another bill.".center(195,'-'))
        continue
    if choice3 in ('N','n'):
        finaldec()
        if userdec in ('Y','y'):
            vspacing()
            print("Bill Generation Database Terminated.".center(195,'='))
            logout()
            break
        if userdec in ('n','N'):
            continue


def recordmodifier():
    global con,cur,databasename,tablename,columnlist,columntypelist,tabledatatype,choicetable,primarycolumn,fv,userdec
    databasecreator()
    tablecreator()
    cur.execute("desc {}".format(choicetable))
    tabledata=list(cur.fetchall())
    rowcount1=cur.rowcount
    cur.execute("desc {}".format(tablename))
    data=list(cur.fetchall())
    rowcount=cur.rowcount                                    #no of rows from table received
    for i in range(0,len(data)):
```

```
    if data[i][3]=='PRI' or data[i][3]=='MUL':
        primarycolumn=data[i][0]
fvs="To Find {}:-".format(primarycolumn)                    #fvs:- findingvaluestring
choice2=0
userdec=0
while True:
    if choice2 in ('T','t') and userdec in ('y','Y'):
        break
    vspacing()
    hspacing()
    fv=(input(fvs))                                         #fv:- findingvalue
    while len(fv)<1 or fv.isspace() or fv.isalpha():
        vspacing()
        print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
        vspacing()
        hspacing()
        fv=(input(fvs))
    if fv.isnumeric() and len(fv)>=1:
        fv=int(fv)
    query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
    cur.execute(query)
    data1=cur.fetchall()
    query1="select * from {} where {}={}".format(choicetable,primarycolumn,fv)
    cur.execute(query1)
    data2=cur.fetchall()
    while data1==[]:
        if userdec in ('Y','y'):
```

```
        break
    if userdec in ('n','N'):
        vspacing()
        hspacing()
        fv=(input(fvs))                                    #fv:- findingvalue
        while len(fv)<1 or fv.isspace() or fv.isalpha():
            vspacing()
            print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
            vspacing()
            hspacing()
            fv=(input(fvs))
        if fv.isnumeric() and len(fv)>=1:
            fv=int(fv)
        query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
        cur.execute(query)
        data1=cur.fetchall()
        query1="select * from {} where {}={}".format(choicetable,primarycolumn,fv)
        cur.execute(query1)
        data2=cur.fetchall()
    elif userdec==0:
        cstr="""No Record Found, Please try 'A'gain,
                \t\t\t\t\t\t\t\t or 'T'erminate Database :- """
        vspacing()
        hspacing()
        choice2=str(input(cstr))
        while choice2 not in ('A','a','T','t'):
            vspacing()
```

```
    invalin()
    vspacing()
    hspacing()
    choice2=str(input(cstr))
if choice2 in ('T','t'):
    finaldec()
    if userdec in ('y','Y'):
        vspacing()
        print(("Consumer Modifying Database terminated".title()).center(195,'='))
        con.close()
        logout()
        break
    elif userdec in ('n','N'):
        continue
elif choice2 in ('A','a'):
    vspacing()
    hspacing()
    fv=(input(fvs))                                          #fv:- findingvalue
    while len(fv)<1 or fv.isspace() or fv.isalpha():
        vspacing()
        print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
        vspacing()
        hspacing()
        fv=(input(fvs))
    if fv.isnumeric() and len(fv)>=1:
        fv=int(fv)
    query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
```

```
            cur.execute(query)
            data1=cur.fetchall()
            query1="select * from {} where {}={}".format(choicetable,primarycolumn,fv)
            cur.execute(query1)
            data2=cur.fetchall()
    if choice2 not in ('t','T'):
        vspacing()
        for i in range(0,len(data)):
            print("\t"*10,data[i][0].center(20,' '),":- ",str(data1[0][i]).center(20,' '))
        if data2!=[]:
            for i in range(1,3):
                print("\t"*10,tabledata[i][0].center(20,' '),":- ",str(data2[0][i]).center(20,' '))
            for i in range(1,len(data2)):
                for j in range(1,3):
                    print("\t"*10,tabledata[j][0].center(20,' '),":- ",str(data2[i][j]).center(20,' '))
        vspacing()
        hspacing()
        dec=str(input("Do you want to modify this record? ('Y','N') :- "))
        while dec not in ('Y','y','N','n'):
            vspacing()
            invalin()
            vspacing()
            hspacing()
            dec=str(input("Do you want to modify this record? ('Y','N') :- "))
        if dec in ('n','N'):
            vspacing()
            hspacing()
```

```
        choice=str(input("Do you want to modify another record? ('Y','N') :- "))
    if dec in ('y','Y'):
        vspacing()
        hspacing()
        uc=str(input("What is to be updated?(Column Name) :- "))                    #uc:-
updatevalue'scolumn
        tdl=[]                                                  #tdl:-tabledatalist
        tdtl=[]                                                 #tdlt:-tabledatatypelist
        col=[]                                                  #col:- columncnstraintlist
        for i in range(0,rowcount):
            tdl.append(data[i][0].lower())
            tdtl.append(data[i][1].lower())
            col.append(data[i][3].lower())
        for i in range(0,rowcount1):
            tdl.append(tabledata[i][0].lower())
            tdtl.append(tabledata[i][1].lower())
            col.append(tabledata[i][3].lower())
        while uc.lower() not in tdl:
            vspacing()
            print("Incorrect Column input, please try again.".center(195,'!'))
            vspacing()
            hspacing()
            uc=str(input("What is to be updated?(Column Name) :- "))
        if uc.lower() in ('month',"billamount"):
            vspacing()
            hspacing()
            ov=str(input("Present Value of '{}' :- ".format(uc)))                   #ov:- old value of column
            while len(ov)<1 or ov.isspace():
```

```
            print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
            ov=str(input("Present Value of '{}' :- ".format(uc)))
        ov="'{}'".format(ov)
        vspacing()
        hspacing()
        uv=str(input("New Value of '{}' :- ".format(uc)))
        while len(uv)<1 or uv.isspace():
            print("No Data Entered / Invalid Data Entered, Please Enter Numeric Data.".center(195,"!"))
            uv=str(input("New Value of '{}' :- ".format(uc)))
        uv="'{}'".format(uv)
        query="update {} set {}={} where {}={} and {}={}".format(choicetable,uc,uv,uc,ov,primarycolumn,fv)
        cur.execute(query)
        con.commit()
    elif uc.lower() in tdl:
        vspacing()
        hspacing()
        uv=str(input("New Value of '{}' :- ".format(uc)))                                   #uv:- udpatevalue
        while len(uv)<1 or uv.isspace():
            print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
            uv=str(input("New Value of '{}' :- ".format(uc)))
        uvc=uv.split(" ")                                                                   #uvc:- updatevalueconversion
        uvc="0".join(uvc)
        uv="'{}'".format(uv)
        if uvc.isalnum and uv not in ("NULL","null"):
            query="update {} set {}={} where {}={}".format(tablename,uc,uv,primarycolumn,fv)
            cur.execute(query)
            con.commit()
```

```
            vspacing()
            print("Changes Saved.".center(195,'='))
            vspacing()
            hspacing()
            choice=str(input("Do you want to modify another record? ('Y','N') :- "))
        while choice not in ('Y','y','N','n'):
            vspacing()
            invalin()
            vspacing()
            hspacing()
            choice=str(input("Do you want to modify another record? ('Y','N') :- "))
        if choice in ('N','n'):
            finaldec()
            if userdec in ('y','Y'):
                vspacing()
                print(("Consumer Modifying Database terminated".title()).center(195,'='))
#"str".title() function used
                con.close()
                logout()
                break
            if userdec in ('n','N'):
                continue
        if choice in ('Y','y'):
            vspacing()
            print("You can modify another record.".center(195,'-'))


def recordremover():
    global con,cur,databasename,tablename,columnlist,columntypelist,tabledatatype,choicetable,primarycolumn,fv,userdec
```

```
databasecreator()
tablecreator()
cur.execute("desc {}".format(tablename))
data=cur.fetchall()
for i in range(0,len(data)):
    if data[i][3]=='PRI' or data[i][3]=='MUL':
        primarycolumn=data[i][0]
fvs="To Find {}:-".format(primarycolumn)                    #fvs:- findingvaluestring
choice2=0
userdec=0
while True:
    if choice2 in ('T','t') and userdec in ('y','Y'):
        break
    vspacing()
    hspacing()
    fv=(input(fvs))                                         #fv:- findingvalue
    while len(fv)<1 or fv.isspace() or fv.isalpha():
        vspacing()
        print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
        vspacing()
        hspacing()
        fv=(input(fvs))
    if fv.isnumeric() and len(fv)>=1:
        fv=int(fv)
    query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
    cur.execute(query)
    data1=cur.fetchall()
```

```
while data1==[]:
    if userdec in ('Y','y'):
        break
    if userdec in ('n','N'):
        vspacing()
        hspacing()
        fv=(input(fvs))                                    #fv:- findingvalue
        while len(fv)<1 or fv.isspace() or fv.isalpha():
            vspacing()
            print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
            vspacing()
            hspacing()
            fv=(input(fvs))
        if fv.isnumeric() and len(fv)>=1:
            fv=int(fv)
        query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
        cur.execute(query)
        data1=cur.fetchall()
    elif userdec==0:
        cstr="""No Record Found, Please try 'A'gain,
                \t\t\t\t\t\t\t\t or 'T'erminate Database :- """
        vspacing()
        hspacing()
        choice2=str(input(cstr))
        while choice2 not in ('A','a','T','t'):
            vspacing()
            invalin()
```

```
    vspacing()
    hspacing()
    choice2=str(input(cstr))
if choice2 in ('T','t'):
    finaldec()
    if userdec in ('y','Y'):
        vspacing()
        print(("Consumer Deleting Database terminated".title()).center(195,'='))
        con.close()
        logout()
        break
    elif userdec in ('n','N'):
        continue
elif choice2 in ('A','a'):
    vspacing()
    hspacing()
    fv=(input(fvs))                                          #fv:- findingvalue
    while len(fv)<1 or fv.isspace() or fv.isalpha():
        vspacing()
        print("No Data Entered / Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
        vspacing()
        hspacing()
        fv=(input(fvs))
    if fv.isnumeric() and len(fv)>=1:
        fv=int(fv)
    query="select * from {} where {}={}".format(tablename,primarycolumn,fv)
    cur.execute(query)
```

```
            data1=cur.fetchall()
    if choice2 not in ('t','T'):
        vspacing()
        for i in range(0,len(data)):
            print("\t"*10,data[i][0].center(20,' '),":- ",str(data1[0][i]).center(20,' '))
        vspacing()
        hspacing()
        dec=str(input("Do you want to delete this record? ('Y','N') :- "))
        while dec not in ('Y','y','N','n'):
            vspacing()
            invalin()
            vspacing()
            hspacing()
            dec=str(input("Do you want to delete this record? ('Y','N') :- "))
        if dec in ('n','N'):
            vspacing()
            hspacing()
            choice=str(input("Do you want to delete another record? ('Y','N') :- "))
        if dec in ('Y','y'):
            vspacing()
            hspacing()
            reason=str(input("Enter Reason for Deletion: "))
            while len(reason)<1:
                vspacing()
                print("No Data Entered / Invalid Data Entered, Please try again.".center(195,"!"))
                vspacing()
                hspacing()
```

```
            reason=str(input("Enter Reason for Deletion: "))
        cur.execute("insert into
del_cus_info(customer_no,meter_no,date_of_connection,name,address,mobile_no,email_id,aadhar_card_no,bpl,bplno,zone,d
istrict,tariff_category,sactioned_load) select * from {} where {}={}".format(tablename,primarycolumn,fv))
        con.commit()
        cur.execute("update del_cus_info set reason='{}' where {}={}".format(reason,primarycolumn,fv))
        con.commit()
        cur.execute("delete from {} where {}={}".format(choicetable,primarycolumn,fv))
        con.commit()
        query="delete from {} where {}={}".format(tablename,primarycolumn,fv)
        cur.execute(query)
        con.commit()
        vspacing()
        print("Record Deleted".center(195,'='))
        vspacing()
        hspacing()
        choice=str(input("Do you want to delete another record? ('Y','N') :- "))
    while choice not in ('Y','y','N','n'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        choice=str(input("Do you want to delete another record? ('Y','N') :- "))
    if choice in ('N','n'):
        finaldec()
        if userdec in ('y','Y'):
            vspacing()
```

```
            print(("Consumer Deleting Database terminated".title()).center(195,'='))
#"str".title() function used
            con.close()
            logout()
            break
        if userdec in ('n','N'):
            continue
        if choice in ('Y','y'):
            vspacing()
            print("You can delete another record.".center(195,'-'))


def admin():
    global admchoice
    vspacing()
    hspacing()
    admchoice=str(input("""Enter 'N'ew Employee ID
                \t\t\t\t\t\t\t\t'U'nblocking/'B'locking Employee ID
                \t\t\t\t\t\t\t\t'C'hecking Customer Information
                \t\t\t\t\t\t\t\tEmployee 'W'orking Hours: """))
    while admchoice.lower() not in ('n','u','b','c','w','password'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        admchoice=str(input("""Enter 'N'ew Employee ID
                \t\t\t\t\t\t\t\t'U'nblocking/'B'locking Employee ID
                \t\t\t\t\t\t\t\t'C'hecking Customer Information
                \t\t\t\t\t\t\t\tEmployee 'W'orking Hours: """))
```

```
def admlogout():
    global admchoice
    vspacing()
    hspacing()
    admchoice=str(input("""Enter 'N'ew Employee ID
                        \t\t\t\t\t\t\t\t'U'nblocking/'B'locking Employee ID
                        \t\t\t\t\t\t\t\t'C'hecking Customer Information
                        \t\t\t\t\t\t\t\tEmployee 'W'orking Hours
                        \t\t\t\t\t\t\t\t To 'L'ogout      : """))
    while admchoice not in ('N','n','B','b','u','U','c','C','W','w','L','l','password'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        admchoice=str(input("""Enter 'N'ew Employee ID
                            \t\t\t\t\t\t\t\t'U'nblocking/'B'locking Employee ID
                            \t\t\t\t\t\t\t\t'C'hecking Customer Information
                            \t\t\t\t\t\t\t\tEmployee 'W'orking Hours:
                            \t\t\t\t\t\t\t\t To 'L'ogout      : """))


def logout():
    global stage2
    vspacing()
    hspacing()
    stage2=str(input("""Enter 'N'ew Record
                    \t\t\t\t\t\t\t\t'B'ill Generation
```

```
                \t\t\t\t\t\t\t\t'F'ind Consumer
                \t\t\t\t\t\t\t\t To 'D'elete/ To 'M'odify Record
                \t\t\t\t\t\t\t\t To 'L'ogout      : """))
    while stage2 not in ('N','n','B','b','F','f','D','d','M','m','L','l'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        stage2=str(input("""Enter 'N'ew Record
                        \t\t\t\t\t\t\t\t'B'ill Generation
                        \t\t\t\t\t\t\t\t'F'ind Consumer
                        \t\t\t\t\t\t\t\t To 'D'elete/ To 'M'odify Record
                        \t\t\t\t\t\t\t\t To 'L'ogout      : """))

#Maincode
import mysql.connector

vspacing()
print("Electricity Department of India".center(195,'='))
stage1,stage2,i,cdec,rowcount,userdec=0,0,0,0,100,0
cdata=["BLOCKED"]
while True:
    if cdata==[] or cdata[0][3]=="BLOCKED" or stage1 in ('q','Q') or cdec in ('Y','y','N','n'):
        break
    if stage2 in ('L','l'):
        shutdown()
        while stage1 in ('Q','q'):
```

```
        finaldec()
        if userdec in ('Y','y'):
            vspacing()
            print(("Program Terminated.").center(195,'='))
            break
        elif userdec in ('N','n'):
            shutdown()
    if stage2==0:
        login()                                                    #stage1
    stage2=0
    if stage1 in ('E','e'):
        emplogin()
        if i==1 and rowcount==0:
            break
        if bdata[0][2]=="BLOCKED":
            break
        while stage1 in ('E','e'):
            while stage2 in ('L','l'):
                finaldec()
                if userdec in ('Y','y'):
                    from time import localtime
                    log_out=localtime()
                    log_out_v=str(log_out[0])+"-"+str(log_out[1])+"-"+str(log_out[2])+"
"+str(log_out[3])+":"+str(log_out[4])+":"+str(log_out[5])
                    tslo=(log_out[3]*60+log_out[4])*60+log_out[5]                                    #tslo:-
Totalsecondlogout
                    tws=tslo-tsli                                                  #tws:- totalworkseconds
                    twm=tws//60                                                    #twm:- totalworkminute
```

```
        tws=tws-(twm*60)
        twh=twm//60
        twm=twm-(twh*60)
        work_time=str(twh)+":"+str(twm)+":"+str(tws)
        query="update emplogs set log_out='{}' where UserID='{}' and log_in='{}'".format(log_out_v,empid,log_in_v)
        query2="update emplogs set work_time='{}' where UserID='{}' and log_in='{}'".format(work_time,empid,log_in_v)
        cur2.execute(query)
        cur2.execute(query2)
        con2.commit()
        con2.close()
        vspacing()
        print("Successfully Logged Out.".center(195,'='))
        break
    elif userdec in ('N','n'):
        logout()
if stage2 in ('L','l'):
    break
if stage2==0 and rowcount==1:
    taskemp()
while stage2 not in ('N','n','B','b','F','f','D','d','M','m') and rowcount==1:
    vspacing()
    invalin()
    taskemp()
while stage2 in ('N','n'):                                  #stage2
    vspacing()
    print("Record Entering Database Initiated.".center(195,'='))
    databasecreator()
```

```
            tablecreator()
            recordcreator()
        while stage2 in ('B','b'):
            vspacing()
            print("Bill Generation Database Initiated.".center(195,'='))
            billgeneration()
        while stage2 in ('F','f'):
            vspacing()
            print("Consumer Finding Database Initiated.".center(195,'='))
            recordsearcher()
        while stage2 in ('D','d') or stage2 in ('M','m'):
            if stage2 in ('D','d'):
                vspacing()
                print("Consumer Deletion Program Initiated.".center(195,'='))
                recordremover()
            elif stage2 in ('M','m'):
                vspacing()
                print("Consumer Details Modifying Program Initiated.".center(195,'='))
                recordmodifier()

na=0                                                    #conpart
while stage1 in ('C','c'):
    con2=mysql.connector.connect(host='localhost',user='root',password='root',database='employee')
    cur2=con2.cursor()
    con1()
    cur.execute("create database if not exists cuslogindetails")
    con=mysql.connector.connect(host='localhost',user='root',password='root',database='cuslogindetails')
```

```
    cur=con.cursor()
    cur.execute("create table if not exists cuslogindetails(CustomerNo bigint(20) primary key, CustomerID char(50) unique,
Password char(50) not null, account_status varchar(30) default 'ACTIVE')")
    if na==0:
        vspacing()
        hspacing()
        sisu=str(input("""Sign 'U'p
                    \t\t\t\t\t\t\t\t or Sign 'I'n :- """))                    #sisu:- SignIn SignUp
        while sisu not in ('U','u','I','i'):
            vspacing()
            print("Invalid Input, Please try again.".center(195,'!'))
            vspacing()
            hspacing()
            sisu=str(input("""Sign 'U'p
                        \t\t\t\t\t\t\t\t or Sign 'I'n :- """))
    if na in ("u","U"):
        sisu="U"
        na=0
    if sisu in ('I','i'):
        cuslogin()
        if na in ("u","U"):
            continue
        if cdata==[] or cdata[0][3]=="BLOCKED":
            break
        if rowcount==0 and i==1:
            break
        cur.execute("select customerno from cuslogindetails where customerid='{}'".format(cusid))
        data=cur.fetchall()
```

```
        cusno=data[0][0]

        cur2.execute("desc cus_info")

        data3=cur2.fetchall()

        cur2.execute("select customer_no from cus_info")

        data2=cur2.fetchall()

        query="select
Customer_no,Meter_no,date_of_connection,Name,Address,Mobile_no,Email_id,Zone,District,Tariff_Category,Sactioned_Load
from cus_info where customer_no={}".format(cusno)

        cur2.execute(query)

        data4=cur2.fetchall()

        cur2.execute("select month, billamount from bills where customer_no={}".format(cusno))

        data5=cur2.fetchall()

        vspacing()

        print("Your Details".center(195,'-'))

        vspacing()

        j=0

        for i in range(0,len(data3)):

            if data3[i][0].lower() in
("customer_no","meter_no","date_of_connection","name","address","mobile_no","email_id","zone","district","tariff_category
","sactioned_load"):

                print("\t"*10,str(data3[i][0]).center(20,' '),":",str(data4[0][j]).center(20,' '))

                j+=1

        vspacing()

        hspacing()

        cdec=str(input("Do you want to Check your past bills? ('Y','N') :- "))

        if cdec not in ('Y','y','N','n'):

            vspacing()

            invalin()

            vspacing()
```

```
        hspacing()
        cdec=str(input("Do you want to Check your past bills? ('Y','N') :- "))
    if cdec in ('Y','y'):
        if data5==[]:
            vspacing()
            print("No Bills Present.".center(195,'-'))
        else:
            vspacing()
            print("Your Past Bills are as follows :- ".center(195,'-'))
            vspacing()
            print("\t"*10,"Month".center(20," "),"Billamount".center(20," "))
            vspacing()
            for i in range(0,len(data5)):
                print("\t"*10,data5[i][0].center(19,' '),"  : ",str(data5[i][1]).center(19,' '))
    vspacing()
    print("Thank you for using Electricity Department Application.".center(195,'='))
    con.close()
    con2.close()
    break
if sisu in ('U','u'):
    con=mysql.connector.connect(host='localhost',user='root',password='root',database='cuslogindetails')
    cur=con.cursor()
    cur2.execute("select customer_no from cus_info")
    data2=str(cur2.fetchall())
    cur.execute("select customerno from cuslogindetails")
    data=cur.fetchall()
    cur.execute("select customerid from cuslogindetails")
```

```
data1=cur.fetchall()
vspacing()
print("Kindly Enter Below Details: ".center(195,"-"))
vspacing()
hspacing()
cusno=(input("Customer Number :- "))
while len(cusno)<1 or cusno.isspace() or cusno.isalpha():
    vspacing()
    print("Invalid Data Entered, Please Enter Valid Data.".center(195,"!"))
    vspacing()
    hspacing()
    cusno=(input("Customer Number :- "))
while str(cusno) not in str(data2):
    vspacing()
    print("Customer Number not Found, Please try again.".center(195,'-'))
    vspacing()
    hspacing()
    cusno=str(input("""Customer Number
                \t\t\t\t\t\t\t or 'E'xit:- """))
    while cusno not in str(data2) and cusno not in ('E','e'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        cusno=str(input("""Customer Number
                    \t\t\t\t\t\t\t or 'E'xit:- """))
    if cusno in ('E','e'):
```

```
        vspacing()
        print("Sign Up Page Closed.".center(195,"="))
        break
    if str(cusno) in str(data) and str(cusno) in str(data2):
        vspacing()
        print(("Customer Number: "+str(cusno)+", CustomerID already registered.").center(195,'-'))
        continue
    if cusno not in ('E','e'):
        vspacing()
        hspacing()
        cusid=str(input("Customer ID :- "))
        while cusid in data1:
            vspacing()
            print("Sorry! Customer ID is not available, Please choose another one.".center(195,'-'))
            vspacing()
            hspacing()
            cusid=str(input("Customer ID :- "))
        vspacing()
        hspacing()
        cuspass=str(input("Create Password :- "))
        hspacing()
        ccuspass=str(input("Confirm Password :- "))
        while cuspass!=ccuspass:
            vspacing()
            print("Create Password and Confirm Password Didn't Matched, Please try Again.".center(195,"!"))
            vspacing()
            hspacing()
```

```
            cuspass=str(input("Create Password :- "))
            hspacing()
            ccuspass=str(input("Confirm Password :- "))
        if cuspass==ccuspass:
            query="insert into cuslogindetails values({},'{}','{}','{}')".format(int(cusno),cusid,cuspass,"ACTIVE")
            cur.execute(query)
            con.commit()
            vspacing()
            print("Account Successfully Signed Up.".center(195,"-"))
            continue
userdec=0
while stage1=="ADMIN":
  if userdec in ('y','Y'):
    con.close()
    con2.close()
    break
  from getpass import getpass
  try:
    f=open("pass.txt","x")                                    #relative path would be added later
  except:
    f=open("pass.txt","r")
  f=open("pass.txt","r")
  pasdata=f.read()
  pasdata=pasdata.split()
  if len(pasdata)==0:
    f=open("pass.txt","w")
    f.write("Password: admin")
```

```
        f=open("pass.txt","r")
        pasdata=f.read()
        pasdata=pasdata.split()
    vspacing()
    Pass=getpass(prompt="\t\t\t\t\t\t\t\t\t\t\t Password: ", stream=None)
    if Pass==pasdata[1]:
        vspacing()
        print("Hello Admin.".center(195,"-"))
        databasecreator()
        tablecreator()
        con1()
        cur.execute("create database if not exists emplogindetails")
        con2=mysql.connector.connect(host='localhost',user='root',password='root',database='emplogindetails')
        cur2=con2.cursor()
        cur2.execute("create table if not exists emplogindetails(UserID char(20) primary key not null, Password char(36) not null,
account_status varchar(20) default 'ACTIVE')")
        cur2.execute("create table if not exists emplogs(UserID char(20) not null, log_in varchar(50), log_out varchar(50),
work_time varchar(30), Foreign Key emplogs(UserID) references emplogindetails(UserID))")
        admin()
        pas=0
        while True:
            if admchoice in ('L','l'):
                break
            while admchoice.lower()=='n':
                cur2.execute("desc emplogindetails")
                data=list(cur2.fetchall())
                vspacing()
                print("Employee Login Details Database Initiated.".center(195,"="))
```

```
while True:
    vdl=[]
    for i in range(0,2):
        vspacing()
        hspacing()
        vs="Enter Value for "+data[i][0]+" : "
        vd=input(vs)
        if data[i][0]=="UserID":
            cur2.execute("select UserID from emplogindetails where UserID='{}'".format(vd))
            cur2.fetchall()
            rowcount=cur2.rowcount
            while rowcount!=0:
                vspacing()
                print("Duplicate UserID Entered, Please try another ID.".center(195,"!"))
                vspacing()
                hspacing()
                vd=input(vs)
                cur2.execute("select UserID from emplogindetails where UserID='{}'".format(vd))
                cur2.fetchall()
                rowcount=cur2.rowcount
        while len(vd)<1 or vd.isspace():
            vspacing()
            print("Invalid Data Entered, Please try again.".center(195,"!"))
            vspacing()
            hspacing()
            vd=input(vs)
        vd="'{}'".format(vd)
```

```
            vdl.append(vd)
        string=vdl[0]
        for i in range(1,len(vdl)):
            string+=","+vdl[i]
        string+=","+"'ACTIVE'"
        cur2.execute("insert into emplogindetails values({})".format(string))
        con2.commit()
        vspacing()
        hspacing()
        ch=input("Do you want to enter another Login Detail? ('Y'/'N') : ")
        while ch.lower() not in ('y','n'):
            vspacing()
            invalin()
            vspacing()
            hspacing()
            ch=int(input("Do you want to enter another Login Detail? ('Y'/'N') : "))
        if ch.lower()=='y':
            vspacing()
            print("You can enter another Login Detail.".center(195,"-"))
            continue
        if ch.lower()=='n':
            finaldec()
            if userdec in ('y','Y'):
                vspacing()
                print(("employee login details database terminated".title()).center(195,'='))
#"str".title() function used
                admlogout()
                break
```

```
while admchoice.upper()=="U" or admchoice.upper()=="B":
    vspacing()
    print("BLOCKING/UNBLOCKING Database Initiated.".center(195,'='))
    while True:
        vspacing()
        hspacing()
        fv=input("Find: Employee ID :- ")
        cur2.execute("select UserID,account_status from emplogindetails where UserID='{}'".format(fv))
        data=cur2.fetchall()
        if cur2.rowcount!=0:
            if data[0][1]=="BLOCKED" and admchoice.upper()=="U" or data[0][1]=="ACTIVE" and admchoice.upper()=="B":
                vspacing()
                print("\t\t\t\t\t\t\t\t\t\t\tUserID         :  ",data[0][0])
                print("\t\t\t\t\t\t\t\t\t\t\tAccount_Status  :  ",data[0][1])
                vspacing()
                hspacing()
                if data[0][1]=="BLOCKED" and admchoice.upper()=="U":
                    ch=input("Do you want to unblock this Employee ID? ('Y'|'N') : ")
                elif data[0][1]=="ACTIVE" and admchoice.upper()=="B":
                    ch=input("Do yout want to block this Employee ID? ('Y'|'N') : ")
                while ch.upper() not in ("Y",'N'):
                    vspacing()
                    invalin()
                    vspacing()
                    hspacing()
                    if data[0][1]=="BLOCKED" and admchoice.upper()=="U":
                        ch=input("Do you want to unblock this Employee ID? ('Y'|'N') : ")
```

```
                elif data[0][1]=="ACTIVE" and admchoice.upper()=="B":
                    ch=input("Do yout want to block this Employee ID? ('Y'|'N') : ")
                if ch.upper()=="Y":
                    if data[0][1]=="BLOCKED" and admchoice.upper()=="U":
                        cur2.execute("update emplogindetails set account_status='ACTIVE' where UserID='{}'".format(fv))
                    elif data[0][1]=="ACTIVE" and admchoice.upper()=="B":
                        cur2.execute("update emplogindetails set account_status='BLOCKED' where UserID='{}'".format(fv))
                    con2.commit()
                    vspacing()
                    if data[0][1]=="BLOCKED" and admchoice.upper()=="U":
                        print("Employee ID Unblocked.".center(195,"-"))
                    elif data[0][1]=="ACTIVE" and admchoice.upper()=="B":
                        print("Employee ID Blocked.".center(195,"-"))
                if ch.upper()=="N":
                    vspacing()
                    print("No changes made.".center(195,"-"))
            elif data[0][1]=="BLOCKED" and admchoice.upper()=="B" or data[0][1]=="ACTIVE" and
admchoice.upper()=="U":
                if data[0][1]=="BLOCKED" and admchoice.upper()=="B":
                    vspacing()
                    print("Employee ID is already BLOCKED.".center(195,"-"))
                elif data[0][1]=="ACTIVE" and admchoice.upper()=="U":
                    vspacing()
                    print("Employee ID is already ACTIVE/UNBLOCKED.".center(195,"-"))
            vspacing()
            hspacing()
            chch=input("Do you want to 'B'LOCK/'U'NBLOCK another Employee ID? ('BY'|'UY'|'N') : ")
            while chch not in ('N','n','BY','by','bY','By','Uy','uy','UY','uY'):
```

```
            vspacing()
            invalin()
            vspacing()
            hspacing()
            chch=input("Do you want to 'B'LOCK/'U'NBLOCK another Employee ID? ('BY'|'UY'|'N') : ")
        if chch.lower() in ('by','uy'):
            admchoice=chch.upper()[0]
            vspacing()
            print("You can BLOCK/UNBLOCK another Employee ID.".center(195,"-"))
            continue
        elif chch in ('n','N'):
            finaldec()
            if userdec in ('y','Y'):
                vspacing()
                print("BLOCKING/UNBLOCKING Database Terminated".center(195,'='))
                admlogout()
                break
      else:
        vspacing()
        print("No Employee ID found. Please try again.".center(195,"!"))
while admchoice in ("C","c"):
  vspacing()
  print("Customer Information Database Initiated.".center(195,"="))
  recordsearcher()
while admchoice.lower()=="w":
  vspacing()
  print("Employee Working Hours Database Initiated.".center(195,"="))
```

```
        while True:
            vspacing()
            hspacing()
            fv=input("Enter Employee ID : ")
            cur2.execute("select * from emplogs where userid='{}'".format(fv))
            data=cur2.fetchall()
            row=cur2.rowcount
            if row!=0:
                vspacing()
                line()
                print("\t\t\t\tEmployee ID\t\t\t\tLog In Time\t\t\t\tLog Out Time\t\t\t\tTotal Work Time")
                line()
                vspacing()
                for i in range(0,row):
                    print("\t\t\t\t"+data[i][0].center(11," ")+"\t\t\t\t"+data[i][1].center(11," ")+"\t\t\t"+data[i][2].center(12,"
")+"\t\t\t"+data[i][3].center(15," "))
                    line()
            else:
                vspacing()
                print(("No Login/Logout by {}".format(fv)).center(195,"-"))
            vspacing()
            hspacing()
            ch=input("Do you want to check another Employee Working Hours? ('Y','N') : ")
            while ch.lower() not in ("y","n"):
                vspacing()
                invalin()
                vspacing()
                hspacing()
```

```
            ch=input("Do you want to check another Employee Working Hours? ('Y','N') : ")
        if ch.lower()=="y":
            vspacing()
            print("You can Check another Employee Working Hours.".center(195,"-"))
            continue
        elif ch.lower()=="n":
            finaldec()
            if userdec in ('y','Y'):
                vspacing()
                print("Employee Working Hours Database Terminated.".center(195,"="))
                admlogout()
                break
while admchoice.lower()=='password':
    vspacing()
    hspacing()
    pas=input("Do you want to change password? ('Y','N') : ")
    while pas not in ('y','Y','n','N'):
        vspacing()
        invalin()
        vspacing()
        hspacing()
        pas=input("Do you want to change password? ('Y','N') : ")
    if pas in ('y','Y'):
        vspacing()
        ppas=getpass(prompt="\t\t\t\t\t\t\t\t\t\t\t Your Previous Password was: ")
        npas=getpass(prompt="\t\t\t\t\t\t\t\t\t\t\t New Password: ")
        if ppas==pasdata[1]:
```

```
                f=open("pass.txt","w")
                f.write("Password: {}".format(npas))
                f.close()
                vspacing()
                input("Password Changed. Press Enter to Continue".center(195,"-"))
                print("\n"*60)
                admlogout()
            else:
                vspacing()
                print("Previous Password is Invalid, Please try again.".center(195,"!"))
        if pas in ('n',"N"):
            print("\n"*60)
            admlogout()
    while admchoice.upper()=="L":
        finaldec()
        if userdec in ('y','Y'):
            vspacing()
            print("Successfully Logged Out".center(195,'='))
            stage2='l'
            break
        if userdec in ('n','N'):
            admlogout()
else:
    vspacing()
    print("Invalid Password, Please try again.".center(195,"!"))
```

OUTPUT SCREEN

START PAGE:

```
================================================================================Electricity Department of India================================================================================

                                                                                'E'mployee Login
                                                                                'C'onsumer Login : _
```

ADMINISTRATOR LOGIN AND MENU (SECRET OPTION)

```
================================================================================Electricity Department of India================================================================================

                                                                                'E'mployee Login
                                                                                'C'onsumer Login : ADMIN

                                                                                 Password:

--------------------------------------------------------------------------------Hello Admin.--------------------------------------------------------------------------------

                                                                                 Enter 'N'ew Employee ID
                                                                                'U'nblocking/'B'locking Employee ID
                                                                                'C'hecking Customer Information
                                                                               Employee 'W'orking Hours: _
```

EMPLOYEE LOGIN DETAILS DATABASE (ENTERING EMPLOYEE LOGIN DETAILS)

```
=============================================================================Employee Login Details Database Terminated=============================================================================

                                                                                 Enter 'N'ew Employee ID
                                                                                'U'nblocking/'B'locking Employee ID
                                                                                'C'hecking Customer Information
                                                                                Employee 'W'orking Hours:
                                                                                 To 'L'ogout      : n

=============================================================================Employee Login Details Database Initiated.=============================================================================

                                                                                 Enter Value for UserID : demo

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!Duplicate UserID Entered, Please try another ID.!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

                                                                                 Enter Value for UserID : demo2

                                                                                 Enter Value for Password : demo2

                                                                                 Do you want to enter another Login Detail? ('Y'/'N') : y

--------------------------------------------------------------------------------You can enter another Login Detail.-------------------------------------------------------------------------------

                                                                                 Enter Value for UserID : demo3

                                                                                 Enter Value for Password : demo3

                                                                                 Do you want to enter another Login Detail? ('Y'/'N') : y

--------------------------------------------------------------------------------You can enter another Login Detail.-------------------------------------------------------------------------------

                                                                                 Enter Value for UserID : demo2

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!Duplicate UserID Entered, Please try another ID.!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

                                                                                 Enter Value for UserID : demo4

                                                                                 Enter Value for Password : demo4

                                                                                 Do you want to enter another Login Detail? ('Y'/'N') : n

                                                                                 Are you sure, 'Y'es/'N'o  : y

=============================================================================Employee Login Details Database Terminated=============================================================================
```

MYSQL TABLE OF EMPLOYEE ID BEING ENTER:

```
mysql> SELECT * FROM EMPLOGINDETAILS;
+--------+----------+----------------+
| UserID | Password | account_status |
+--------+----------+----------------+
| demo   | demo     | ACTIVE         |
| demo2  | demo2    | ACTIVE         |
| demo3  | demo3    | ACTIVE         |
| demo4  | demo4    | ACTIVE         |
+--------+----------+----------------+
4 rows in set (0.00 sec)

mysql>
```

BLOCKING/UNBLOCKING EMPLOYEE ID DATABASE

```
                                                                                Enter 'N'ew Employee ID
                                                                               'U'nblocking/'B'locking Employee ID
                                                                               'C'hecking Customer Information
                                                                               Employee 'W'orking Hours:
                                                                                To 'L'ogout      : U

================================================================================BLOCKING/UNBLOCKING Database Initiated.=========================================================================

                                                                                Find: Employee ID :- demo

--------------------------------------------------------------------------------Employee ID is already ACTIVE/UNBLOCKED.-------------------------------------------------------------------

                                                                                Do you want to 'B'LOCK/'U'NBLOCK another Employee ID? ('BY'|'UY'|'N') : by

--------------------------------------------------------------------------------You can BLOCK/UNBLOCK another Employee ID.-----------------------------------------------------------------

                                                                                Find: Employee ID :- demo

                                                                               UserID          :   demo
                                                                               Account_Status  :   ACTIVE

                                                                                Do yout want to block this Employee ID? ('Y'|'N') : y

--------------------------------------------------------------------------------Employee ID Blocked.---------------------------------------------------------------------------------

                                                                                Do you want to 'B'LOCK/'U'NBLOCK another Employee ID? ('BY'|'UY'|'N') : uy

--------------------------------------------------------------------------------You can BLOCK/UNBLOCK another Employee ID.-----------------------------------------------------------------

                                                                                Find: Employee ID :- demo

                                                                               UserID          :   demo
                                                                               Account_Status  :   BLOCKED

                                                                                Do you want to unblock this Employee ID? ('Y'|'N') : y

--------------------------------------------------------------------------------Employee ID Unblocked.-------------------------------------------------------------------------------

                                                                                Do you want to 'B'LOCK/'U'NBLOCK another Employee ID? ('BY'|'UY'|'N') : n

                                                                                Are you sure, 'Y'es/'N'o  : y

================================================================================BLOCKING/UNBLOCKING Database Terminated=========================================================================
```

BLOCKING/UNBLOCKING OF EMPLOYEE ID IN MYSQL TABLE

```
mysql> SELECT * FROM EMPLOGINDETAILS;
+--------+----------+----------------+
| UserID | Password | account_status |
+--------+----------+----------------+
| demo   | demo     | BLOCKED        |
| demo2  | demo2    | ACTIVE         |
| demo3  | demo3    | ACTIVE         |
| demo4  | demo4    | ACTIVE         |
+--------+----------+----------------+
4 rows in set (0.00 sec)

mysql>
```

CUSTOMER INFORMATION DATABASE

```
                                                                    Enter 'N'ew Employee ID
                                                                   'U'nblocking/'B'locking Employee ID
                                                                   'C'hecking Customer Information
                                                                   Employee 'W'orking Hours: c

================================================================================Customer Information Database Initiated.=============================================================================

                                                                    To Find Customer_No:-2

--------------------------------------------------------------------------------Details of Consumer Number : 2 are as follows-------------------------------------------------------------------------

                                                                        Meter_No       :-         USP-2
                                                                    Date_of_connection  :-       2020-09-19
                                                                         Name          :-         DEMO2
                                                                       Address         :-          DEMO
                                                                      Mobile_No        :-       9876543210
                                                                       Email_ID        :-    DEMO2@GMAIL.COM
                                                                     Aadhar_Card_No    :-      999888000111
                                                                         BPL           :-           N
                                                                        BPLNo          :-          None
                                                                         Zone          :-          DEMO
                                                                       District        :-          DEMO
                                                                    Tariff_Category    :-        Domestic
                                                                     Sactioned_Load    :-          2Kw

                                                                        Do you want to fetch bills of the consumer?('Y','N') :- y

-------------------------------------------------------------------------------------------No bills found.-----------------------------------------------------------------------------------------

                                                                        Do you want to Search another record? ('Y','N'):- n

                                                                        Are you sure, 'Y'es/'N'o  : y

================================================================================Customer Information Database Terminated==========================================================================
```

EMPLOYEE WORKING HOUR DATABASE

```
                                                                    Enter 'N'ew Employee ID
                                                                   'U'nblocking/'B'locking Employee ID
                                                                   'C'hecking Customer Information
                                                                   Employee 'W'orking Hours:
                                                                    To 'L'ogout      : W

================================================================================Employee Working Hours Database Initiated.============================================================================

                                                                        Enter Employee ID : DEMO

-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
                          Employee ID                       Log In Time                       Log Out Time                      Total Work Time
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

                             DEMO                        2021-1-24  16:10:32               2021-1-24  16:37:10                   0:26:38
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

                                                                        Do you want to check another Employee Working Hours? ('Y','N') : N

                                                                        Are you sure, 'Y'es/'N'o  : Y

================================================================================Employee Working Hours Database Terminated.===========================================================================
```

LOGINING OUT OF ADMINISTRATOR SECTION

```
                                                    Enter 'N'ew Employee ID
                                                   'U'nblocking/'B'locking Employee ID
                                                   'C'hecking Customer Information
                                                   Employee 'W'orking Hours:
                                                    To 'L'ogout      : L

                                                    Are you sure, 'Y'es/'N'o  : Y

================================================================================Successfully Logged Out=================================================================================
```

CHANGING PASSWORD OF THE ADMINISTRATOR SECTION

```
                                                    'E'mployee Login
                                                    'C'onsumer Login : ADMIN

                                                    Password:

--------------------------------------------------------------------------------Hello Admin.--------------------------------------------------------------------------------


                                                    Enter 'N'ew Employee ID
                                                   'U'nblocking/'B'locking Employee ID
                                                   'C'hecking Customer Information
                                                   Employee 'W'orking Hours: password

                                                    Do you want to change password? ('Y','N') : y

                                                    Your Previous Password was:
                                                    New Password:

------------------------------------------------------------------------Password Changed. Press Enter to Continue-------------------------------------------------------------------------
```

EMPLOYEE LOGIN PAGE WITH MENU

```
                                                                    'E'mployee Login
                                                                    'C'onsumer Login
                                                                    To 'Q'uit        : E

                                                                    Employee ID : DEMO
                                                                    Password : _

================================================================================Successfully Logged In=============================================================================

                                                                    Hello Demo

                                                                    Enter 'N'ew Record
                                                                   'B'ill Generation
                                                                   'F'ind Consumer
                                                                    To 'D'elete/ To 'M'odify Record : _
```

RECORD ENTERING DATABASE

```
                                                                    Enter 'N'ew Record
                                                                   'B'ill Generation
                                                                   'F'ind Consumer
                                                                    To 'D'elete/ To 'M'odify Record : N

================================================================================Record Entering Database Initiated.=================================================================

--------------------------------------------------------------------------------No Records Present.-----------------------------------------------------------------------------

                                                                    Enter Value for , Customer_No : 1

                                                                    Enter Value for , Meter_no : USP-1

                                                                    Enter Value for , Date_of_connection (YYYY-MM-DD) : 2020-09-19

                                                                    Enter Value for , Name : DEMO

                                                                    Enter Value for , Address : DEMO

                                                                    Enter Value for , Mobile_No : 9876000011

                                                                    Enter Value for , Email_id : DEMO@GMAIL.COM

                                                                    Enter Value for , Aadhar_Card_No : 999888777666

                                                                    Enter Value for , Bpl : N

                                                                    Enter Value for , Bplno : NULL

                                                                    Enter Value for , Zone : DEMO

                                                                    Enter Value for , District : DEMO

                                                                    Enter Value for , Tariff_category
                                                                           DO : Domestic
                                                                           ND : Non-Domestic
                                                                           IN : Industrial
                                                                           AG : Agriculture
                                                                           PU : Public Utilities
                                                                           AD : Advertisements
                                                                           CS : Charging Station: DO

                                                                    Enter Value for , Sactioned_load : 1 KW

=============================================================================================Record Saved.==========================================================================

                                                                    Do you want to Enter another record? ('Y'es/'N'o) : N

                                                                    Are you sure, 'Y'es/'N'o  : Y

================================================================================Record Entering Database Terminated=================================================================
```

MYSQL TABLE OF RECORD ENTERING DATABASE

```
mysql> SELECT * FROM CUS_INFO;
+-------------+---------+-------------------+------+---------+------------+---------------+---------------+-----+-------+------+----------+-----------------+---------------+
| Customer_No | Meter_No | Date_of_connection | Name | Address | Mobile_No  | Email_ID      | Aadhar_Card_No | BPL | BPLNo | Zone | District | Tariff_Category | Sactioned_Load |
+-------------+---------+-------------------+------+---------+------------+---------------+---------------+-----+-------+------+----------+-----------------+---------------+
|           1 | USP-1   | 2020-09-19        | DEMO | DEMO    | 9876000011 | DEMO@GMAIL.COM |   999888777666 | N   | NULL  | DEMO | DEMO     | Domestic        | 1 KW          |
+-------------+---------+-------------------+------+---------+------------+---------------+---------------+-----+-------+------+----------+-----------------+---------------+
1 row in set (0.00 sec)

mysql>
```

BILL GENERATION DATABASE

```
                                                                    Enter 'N'ew Record
                                                                   'B'ill Generation
                                                                   'F'ind Consumer
                                                                    To 'D'elete/ To 'M'odify Record
                                                                    To 'L'ogout      : B
================================================================================Bill Generation Database Initiated.=========================================================================

                                                                        To Find Customer_No:- 1

                                                                  Customer_No      :          1
                                                                    Meter_No       :        USP-1
                                                                Date_of_connection  :      2020-09-19
                                                                     Name          :         DEMO
                                                                   Address         :         DEMO
                                                                  Mobile_No        :      9876000011
                                                                   Email_ID        :    DEMO@GMAIL.COM
                                                                 Aadhar_Card_No    :     999888777666
                                                                      BPL          :           N
                                                                    BPLNo          :         None
                                                                     Zone          :         DEMO
                                                                   District        :         DEMO
                                                                 Tariff_Category   :       Domestic
                                                                  Sactioned_Load   :         1 KW

                                                                       Do you want to generate bill of above consumer? ('Y','N') :- Y

                                                                       Bill of Year :- 2020

                                                                       Bill of Month(s) (Month's Number) :- 9,10

                                                                       Meter's Present Reading :- 300
                                                                       Meter's Previous Reading :- 0

--------------------------------------------------------------------------------Bill Generated as Below-------------------------------------------------------------------------

                                                                  Customer_No      :-          1
                                                                     Month         :-  September-October,2020
                                                                   Billamount      :-       1554.02

                                                                       Do you want to generate another bill? ('Y','N') :- N

                                                                       Are you sure, 'Y'es/'N'o  : Y

================================================================================Bill Generation Database Terminated.========================================================================
```

MYSQL TABLE OF BILLS GENERATING DATABASE

```
mysql> SELECT * FROM BILLS;
+-------------+-----------------------+------------+
| Customer_No | Month                 | Billamount |
+-------------+-----------------------+------------+
|           1 | September-October,2020 |    1554.02 |
+-------------+-----------------------+------------+
1 row in set (0.00 sec)

mysql>
```

CONSUMER FINDING DATABASE

```
                                                                                Enter 'N'ew Record
                                                                               'B'ill Generation
                                                                               'F'ind Consumer
                                                                                To 'D'elete/ To 'M'odify Record
                                                                                To 'L'ogout      : F

================================================================================Consumer Finding Database Initiated.=============================================================================

                                                                                To Find Customer_No:-1

--------------------------------------------------------------------------------Details of Consumer Number : 1 are as follows---------------------------------------------------------------------

                                                                                     Meter_No       :-         USP-1
                                                                               Date_of_connection   :-       2020-09-19
                                                                                     Name           :-          DEMO
                                                                                   Address          :-          DEMO
                                                                                  Mobile_No         :-       9876000011
                                                                                   Email_ID         :-     DEMO@GMAIL.COM
                                                                                Aadhar_Card_No      :-      999888777666
                                                                                     BPL            :-           N
                                                                                    BPLNo           :-          None
                                                                                     Zone           :-          DEMO
                                                                                   District         :-          DEMO
                                                                                 Tariff_Category    :-        Domestic
                                                                                 Sactioned_Load     :-          1 KW

                                                                                Do you want to fetch bills of the consumer?('Y','N') :- Y

--------------------------------------------------------------------------------Past Bills of Consumer Number : 1 are as follows-----------------------------------------------------------------

                                                                                Month               Billamount

                                                                              September-October,2020  :        1554.02

                                                                                Do you want to Search another record? ('Y','N'):- N

                                                                                Are you sure, 'Y'es/'N'o  : Y

================================================================================Consumer Finding Database Terminated=============================================================================
```

CONSUMER DETAILS MODIFYING DATABASE

```
                                                                    Enter 'N'ew Record
                                                                   'B'ill Generation
                                                                   'F'ind Consumer
                                                                    To 'D'elete/ To 'M'odify Record
                                                                    To 'L'ogout      : M

=============================================================================Consumer Details Modifying Program Initiated.=============================================================

                                                                    To Find Customer_No:-1

                                                                Customer_No      :-           1
                                                                  Meter_No       :-         USP-1
                                                               Date_of_connection  :-       2020-09-19
                                                                     Name         :-          DEMO
                                                                   Address        :-          DEMO
                                                                  Mobile_No       :-       9876000011
                                                                   Email_ID       :-     DEMO@GMAIL.COM
                                                                Aadhar_Card_No    :-      999888777666
                                                                     BPL         :-           N
                                                                    BPLNo        :-          None
                                                                     Zone        :-          DEMO
                                                                   District      :-          DEMO
                                                                Tariff_Category   :-        Domestic
                                                                 Sactioned_Load   :-          1 KW
                                                                     Month        :-  September-October,2020
                                                                  Billamount      :-        1554.02

                                                                    Do you want to modify this record? ('Y','N') :- Y

                                                                    What is to be updated?(Column Name) :- ADDRESS

                                                                    New Value of 'ADDRESS' :- DEMO2

=========================================================================================Changes Saved.=================================================================================

                                                                    Do you want to modify another record? ('Y','N') :- N

                                                                    Are you sure, 'Y'es/'N'o  : Y

=============================================================================Consumer Modifying Database Terminated=============================================================
```

CONSUMER DETAILS BEING MODIFIED IN MYSQL TABLES

```
mysql> SELECT * FROM CUS_INFO;
+-------------+----------+---------------------+------+---------+------------+----------------+----------------+-----+-------+------+----------+----------------+----------------+
| Customer_No | Meter_No | Date_of_connection | Name | Address | Mobile_No  | Email_ID       | Aadhar_Card_No | BPL | BPLNo | Zone | District | Tariff_Category | Sactioned_Load |
+-------------+----------+---------------------+------+---------+------------+----------------+----------------+-----+-------+------+----------+----------------+----------------+
|           1 | USP-1    | 2020-09-19          | DEMO | DEMO2   | 9876000011 | DEMO@GMAIL.COM |   999888777666 | N   | NULL  | DEMO | DEMO     | Domestic        | 1 KW           |
+-------------+----------+---------------------+------+---------+------------+----------------+----------------+-----+-------+------+----------+----------------+----------------+
1 row in set (0.00 sec)

mysql>
```

CONSUMER DELETING DATABASE

```
                                                                                Enter 'N'ew Record
                                                                               'B'ill Generation
                                                                               'F'ind Consumer
                                                                                To 'D'elete/ To 'M'odify Record
                                                                                To 'L'ogout      : D

================================================================================Consumer Deletion Program Initiated.=============================================================================

                                                                                To Find Customer_No:-1

                                                                            Customer_No      :-           1
                                                                              Meter_No       :-         USP-1
                                                                          Date_of_connection :-       2020-09-19
                                                                                Name         :-          DEMO
                                                                             Address         :-         DEMO2
                                                                            Mobile_No        :-       9876000011
                                                                             Email_ID        :-     DEMO@GMAIL.COM
                                                                           Aadhar_Card_No    :-      999888777666
                                                                                BPL          :-            N
                                                                               BPLNo         :-          None
                                                                                Zone         :-          DEMO
                                                                             District        :-          DEMO
                                                                           Tariff_Category   :-        Domestic
                                                                           Sactioned_Load    :-          1 KW

                                                                                Do you want to delete this record? ('Y','N') :- Y

                                                                                Enter Reason for Deletion: MIGRATION

=========================================================================================Record Deleted==========================================================================================

                                                                                Do you want to delete another record? ('Y','N') :- N

                                                                                Are you sure, 'Y'es/'N'o  : Y

================================================================================Consumer Deleting Database Terminated=============================================================================
```

RECORD BEING DELETED FROM MYSQL TABLE

```
mysql> SELECT * FROM CUS_INFO;
+-------------+----------+--------------------+-------+---------+------------+----------------+---------------+-----+-------+------+----------+----------------+----------------+
| Customer_No | Meter_No | Date_of_connection | Name  | Address | Mobile_No  | Email_ID       | Aadhar_Card_No | BPL | BPLNo | Zone | District | Tariff_Category | Sactioned_Load |
+-------------+----------+--------------------+-------+---------+------------+----------------+---------------+-----+-------+------+----------+----------------+----------------+
|           2 | USP-2    | 2020-09-19         | DEMO2 | DEMO    | 9876543210 | DEMO2@GMAIL.COM |   999888000111 | N   | NULL  | DEMO | DEMO     | Domestic        | 2Kw            |
+-------------+----------+--------------------+-------+---------+------------+----------------+---------------+-----+-------+------+----------+----------------+----------------+
1 row in set (0.00 sec)

mysql>
```

LOGING OUT OF EMPLOYEE SECTION

```
 Enter 'N'ew Record
'B'ill Generation
'F'ind Consumer
 To 'D'elete/ To 'M'odify Record
 To 'L'ogout      : L

 Are you sure, 'Y'es/'N'o  : Y

==========================================================================Successfully Logged Out.==========================================================================

 'E'mployee Login
 'C'onsumer Login
 To 'Q'uit       :
```

CUSTOMER STARTUP PAGE

```
'E'mployee Login
'C'onsumer Login : C

Sign 'U'p
or Sign 'I'n :-
```

CONSUMER SIGN UP PROGRAM

```
                                                                                Sign 'U'p
                                                                                or Sign 'I'n :- U

 ------------------------------------------------------------------------------Kindly Enter Below Details: ------------------------------------------------------------------------------
-


                                                                                Customer Number :- 2

                                                                                Customer ID :- DEMO

                                                                                Create Password :- DEMO
                                                                                Confirm Password :- DEMO

 ------------------------------------------------------------------------------Account Successfully Signed Up.------------------------------------------------------------------------------
-
```

CUSTOMER LOGIN DETAILS BEING ENTERED IN MYSQL TABLE

```
mysql> SELECT * FROM CUSLOGINDETAILS;
+------------+------------+----------+----------------+
| CustomerNo | CustomerID | Password | account_status |
+------------+------------+----------+----------------+
|          2 | DEMO       | DEMO     | ACTIVE         |
+------------+------------+----------+----------------+
1 row in set (0.00 sec)

mysql>
```

CONSUMER SIGN IN PROGRAM

```
                                                                Sign 'U'p
                                                                or Sign 'I'n :- I

                                                                Customer ID : DEMO
                                                                Password :
```

```
==========================================================================================Successfully Logged In==========================================================================================

                                                                                                Hello Demo

----------------------------------------------------------------------------------------------------Your Details----------------------------------------------------------------------------------------------------

                                                                                                Customer_No      :          2
                                                                                                  Meter_No       :        USP-2
                                                                                                Date_of_connection  :      2020-09-19
                                                                                                     Name        :        DEMO2
                                                                                                   Address       :         DEMO
                                                                                                  Mobile_No      :      9876543210
                                                                                                   Email_ID      :   DEMO2@GMAIL.COM
                                                                                                     Zone        :         DEMO
                                                                                                   District      :         DEMO
                                                                                                 Tariff_Category   :       Domestic
                                                                                                  Sactioned_Load   :         2Kw

                                                                                                Do you want to Check your past bills? ('Y','N') :- Y

----------------------------------------------------------------------------------------------------No Bills Present.-----------------------------------------------------------------------------------------------

=================================================================Thank you for using Electricity Department Application.==================================================================
```

LIMITATION AND SUGGESTED UPGRADATION

The project needs some upgradation

- Calculation in Bill Amount Modification should be made by the program.
- The Program should let the consumer pay for their bills through bills and once signed up should not force them to login.
- Adding of penalty on late charges to due bill when searched for the particular bill.
- Display the Due Date to the Consumers in the Consumer's Section.
- Adding a Logout Feature in Consumer's Section.
- Adding Government Relief Amount to the Bills.

System Requirement

Processor: Above Pentium Core

Ram: 2GB or Above

Rom: 250GB or Above

Software: Python 3.7 or Above, Mysql 5.7 or Above with mysql-connector install

BIBLIOGRAPHY

1. Computer Science with Python By Sumita Arora (Class XI)
2. Computer Science with Python By Sumita Arora (Class XII)
3. Reference from Internet

THANKING YOU