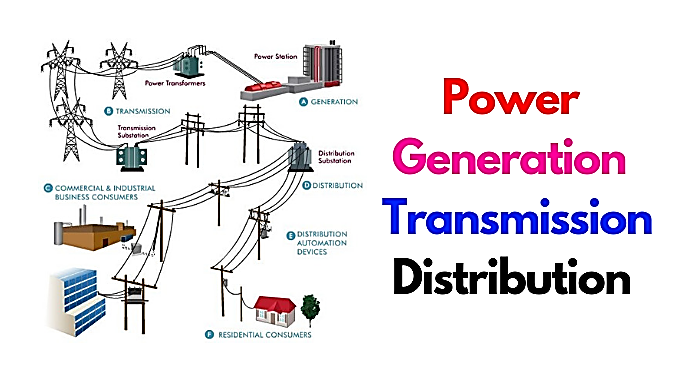
**ARMY PUBLIC SCHOOL, KOLKATA**

ELECTRICITY BILL ING MANAGEMENT



For AISSCE 2020-21 Examination

**ELECTRICITY BILLING MANAGEMENT SYSTEM**

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**CLASS**  : **12-SC-1**

**SESSION** : **2020-2021**

**AISSCE ROLL NO** :

CERTIFICATE

This is to certify that the following students of CLASS 12-SC-1 have prepared the report on the project ELECTRICITY BILLING MANAGEMENT SYSTEM.

The report is the result of their efforts & endeavour as a team. The report is found worthy of acceptance as final project report for the subject **Computer** **Science** of Class XII for the academic session 2020-21.

They have prepared the report under my guidance.

|  |  |  |
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Date : PGT (Computer Science)

Acknowledgement

*We would like to express a deep sense of thanks & gratitude to our project guide Mrs Yamini Azhaguvel, for guiding me immensely through the course of the project.*

*She always evinced keen interest in my work. Her constructive advice & constant motivation has been responsible for the successful completion of this project.*

*We also thank our parents for their motivation & support. I also take this opportunity to thank our classmates and team members for their timely help & support in compilation of this project.*

***Lastly, I would like to thank all those who had helped directly or indirectly towards the completion of this project.***

**With Thanks,**

* *Dhruva Shaw*
* *Ayush Saha*
* *Smyan Kotkar*

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MODULES USED

1. **Inbuilt modules** :

* **sys** : The system module is used to close the interpreter programmatically using sys.exit()
* **mysql-connector** : This module is used to perform the backend operations with the MySQL database.
* **os**  : This module is imported in the program clear the terminal screen programatically, get the current working directory and make the program Operating System independent.
* **json** : This module is used to import data from .json files to the program.
* **math** : From this module the ceil function is imported to roundoff the generated value for the electric bill.
* **smtplib** : This module is imported to send the electric bills to respective customer.
* **email** : This module is imported to work accordance with smtplib module and ease the template making of the emails.
* **datetime** : This module is imported to get the current time.
* **csv**  : This module is imported to read and write the csv files.
* **hashlib** : This module is imported to hash the password using the md5 hash algorithm and return the hash in a hexadecimal number
* **time** : From this module sleep function is imported to suspend execution of the calling thread for the given number of seconds
* **cProfile** : This module is to provide a deterministic profiling of the python program
* **re** : From the regular expression module compile function imported and is used to compile a regular expression pattern into a regular expression object
* **pyinstaller** : This is used to convert the python file to exe file.

1. **Custom (user made) Modules**

* **adminBillGen** : This contains function for the Admin Homepage.
* **clearscreen** : This contains the function for the clearscreen based on the operating system.
* **customerView** : This contains the function for the billing the view bill and this is accessible to customer only.
* **billEmail** : This contains the function for the emailing the bill to respective customer.
* **billGen** : This contains the function for to generate the bill for the corresponding month.
* **login** : This function to logged into the user in correct department.
* **logout** : This contains the function to logout the user.

**Objective, Scope & Backbone of the Project**

Our project entitled “**Electricity Billing System**” aim is to generate electricity bill with all the charges and penalty. Manual system that is employed is extremely laborious and quite inadequate. It only makes the process more difficult and hard. The aim of our project is to develop a system that is meant to partially computerize the work performed in the Electricity Board like generating monthly electricity bill, record of consuming unit of energy, store record of the customer and previous unpaid record. We used Python 3.8 as front end and MySql-marriaDB engine as back end for developing our project. Our project is independent of any OS and can run on any platform.

The overall project report is divided into further sub-parts which includes developing of the model system with scope for enhancement depending on the functionality of the organisation. The codes written were developed by the team jointly, tested with dummy data and found to be successful worth implementation with suitable modifications for further implementation.

**Backbone of the Project :**

This Project was completed using the methods which can be used in connecting MySQL and Python together. Python was chosen due to its simple structure, robustness and high capability in creating definitions. MySQL as a backend tool was chosen as a combination to give Python the meaning of flexibility and adaptability due it’s simple table management system while primarily used for storing the data related to the billing system and customer details.

We as a team hope that the humble effort taken from our side would be able to create a significant change for the betterment of the lives of the people who would be using the system with adaptations as required.

**Table Structure**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table Name | Customer |  | Table | Login |
| Field Name | Type |  | Field Name | Type |
| id | integer |  | id | int |
| meterno | integer |  | userid | varchar() |
| consumerno | biginteger |  | branch | text |
| consumername | varchar() |  | session\_in | datetime |
| load\_con | varchar() |  | session\_out | datetime |
| unit\_consumed | integer |  | dept\_no | int |
| month | varchar() |  |  |  |
| year | integer |  |  |  |
| email | varchar() |  | Table | User |
| address | text |  | Field Name | Type |
| amountgen | decimal |  | id | int |
|  |  |  | username | varchar() |
|  |  |  | password | varchar() |
| Table Name | DEPT |  | branch | varchar() |
| Field Name | Type |  | dept\_no | int |
| id | int |  | useradmin\_id | varchar() |
| dept\_no | int |  |  |  |
| deptname | text |  |  |  |

WORKING DESCRIPTION

* **FILES GENERATED:**

config.json, customer\_details.csv, employee\_details.csv, admin\_message.txt, billEmailnotAdmin\_message.txt, billGennotAdmin\_message.txt, create\_msg.txt, createdBill.txt, custdetails.txt, welcome\_message.txt

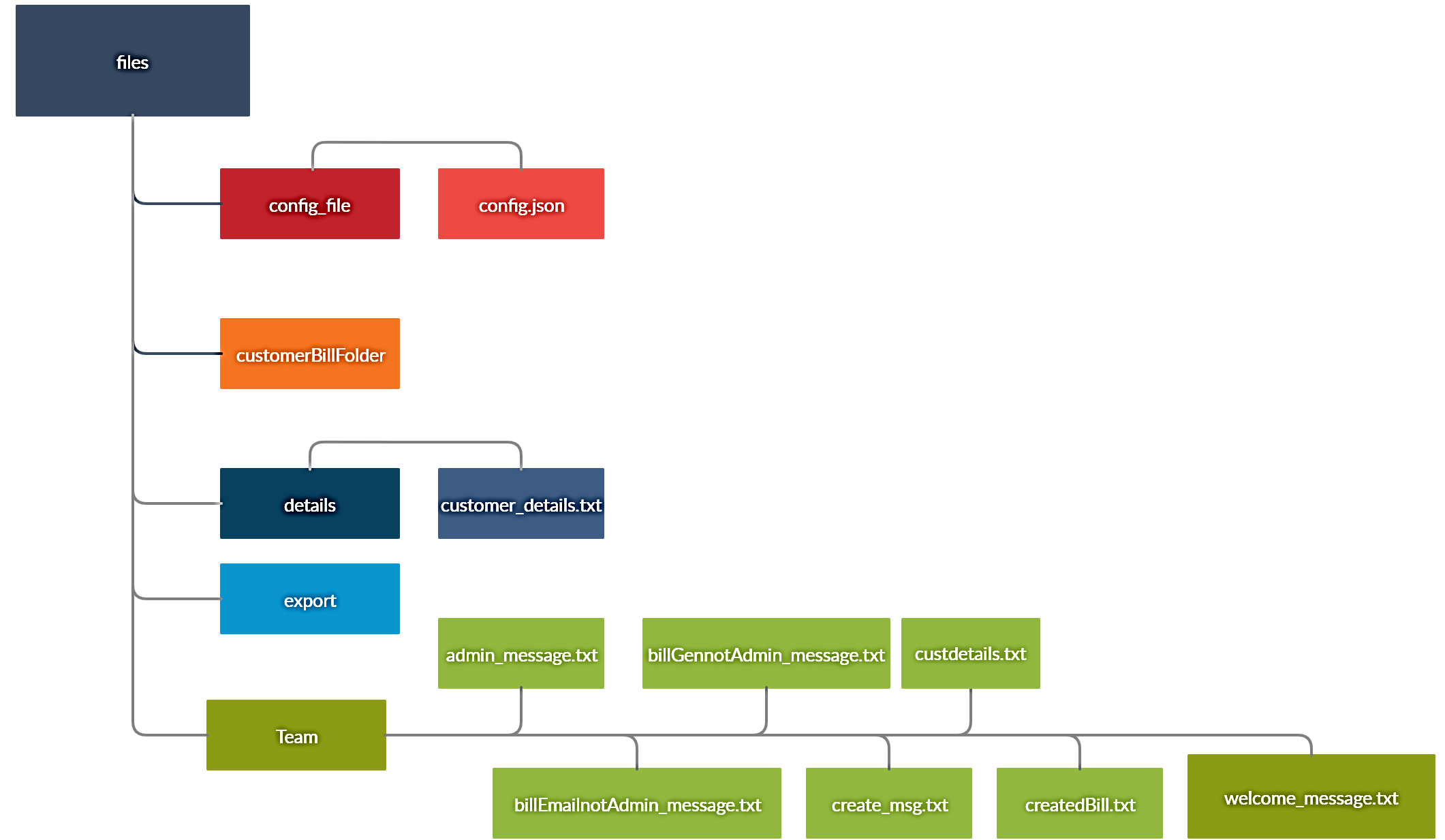
An exe file is generated for distribution.

* **DIRECTORY STRUCTURE :**

The master folder contains a folder named ‘files’.

Then the files folder contains the following 5 folder.

config\_file’, ‘customerBillfolder’, ‘details’, ‘export’, ‘messages’



The program has been designed with following modes of operation:

1. Admin
2. Bill Generation
3. Bill Delivery
4. Customer Bill View

Admin : It part has the privileges of a super user. It has the power to create, delete and edit, etc.

Bill Generation : This module has been designed to generate electricity bills based on the inputs of meter reading.

Bill Delivery : This module will email the bill to respective customers address and thus bring the concept of a reduce paper and reduce carbon footprint making the environment greener and sustainable.

Customer View Bill : This portal is only for use by the consumer to view the bill for the current month.

This is all in one program where electricity department can enter the data through the MySQL database, where a consumer can view its own bill just by using this program.

Features:

It has an Admin Panel which the super user can access to enter the data of the consumer to database given by the electricity meter department in form of a csv file. It has a login system where the password are hashed using md5 hash algorithm then the hash are converted to the hexadecimal units. The super user can also add the details of a new operator or delete its details.

It also a configurable json file, and configure the contents of a program.

This program is also Operating System independent.

It also has a portal for the Bill Generation and Bill Delivery Department where the respective operator can generate the electricity bill with help of only one command and also deliver the bill to customers using their emails.

It has also portals for the customers where a consumer can enter its consumer no and get the bill details for the current month.

Cons :

A constant Internet Connection is required.

The database of the consumer has to be constantly updated by the admin every month through csv files.

And in the customers or consumer portal in case of any emergency or help requiring situation one cannot contact any authority as would be required to resolve the problem in hand.

Program Code

**#**mainRun.py

from datetime import datetime

from os import system

from login import welcome\_message

from clearscreen import clear

import mysql.connector as c

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

#\_\_main\_\_

#Checks if the user is already logged in

clear()

db.execute(f'UPDATE login SET session\_out="{datetime.now()}" WHERE session\_out="0000%"')

connection.commit()

welcome\_message()

**#**login.py

import hashlib

import json

import sys

import time

from datetime import datetime

from os import path

import mysql.connector as c

from adminBillGen import adminHome

from billGen import bilGenHome

from clearscreen import clear

from billEmail import bilEmailHome

from customerView import consumerDetails

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

#Opening of config.json file

THIS\_FOLDER = path.dirname(path.abspath(\_\_file\_\_))

my\_file = path.join(THIS\_FOLDER,'files','config\_file', 'config.json')

with open(my\_file, 'r') as c:

params = json.load(c)["params"]

**#Welcome message**

def welcome\_message():

'''The first welcome message'''

clear()

#The welcome message

welcome\_message =open('files/messages/welcome\_message.txt','r').read()

print(welcome\_message.format(params['company\_name']))

#Calling the login\_deptno function

login\_deptno()

**#Login system**

################################################################

# The function 1 and 2 are related to each other

# The first function catches exception and the second function is for validation

# (1) Makes the user to get logged in into the correct deptno

def login\_deptno(message=''):

'''Makes the user to get logged in into the correct deptno'''

while True:

print(message)

try:

deptno\_in = int(input('Please enter the department no.\n'))

if deptno\_in == 15675812:

consumerDetails()

else:

logincheck(deptno\_in)

break

except ValueError:

print()

print('Please Enter a number not alphabets')

**# (2) Checks the login (Validation)**

def logincheck(deptno):

'''This is a function to check if the user exists and gets the user logged in'''

#Department No dictionary

db.execute('SELECT dept\_no FROM dept')

sqlquery = db.fetchall()

deptno\_dict = (i for i in sqlquery)

#Check if the department no entered is correct

newline='\n'

if (deptno,) not in deptno\_dict:

login\_deptno(f'{deptno} Department No is not valid {newline} Please enter a valid department no !')

else:

login\_user(deptno)

#####################################################################################################################

# Similarly here the function 3 and 4 are related to each other

# the 3rd function is used to logged the user answer in and 4th function is used for creating a session and

# then give the user out the appropriate page

**# (3) Make user logged in**

def login\_user(deptno):

'''This is the login screen'''

clear()

print()

print('Now please enter your login credentials')

print('---------------------------------------')

userid=input('Please enter your USERID\n')

print('---------------------------------------')

password=input('Please enter your password\n')

hashpass = hashlib.md5(password.encode())

db.execute(f'SELECT \* FROM user WHERE password="{hashpass.hexdigest()}" AND dept\_no="{deptno}" AND useradmin\_id="{userid}";')

query = db.fetchall()

if query==None or query==[]:

print('The given credentials where wrong')

print('Please wait for 2 sec!')

time.sleep(2)

welcome\_message()

else:

login\_user\_in(userid,hashpass.hexdigest(),deptno)

**# (4) Checks the logged in user branch and gives out the appropriate page**

def login\_user\_in(userid,hashpass,deptno,work=None):

'''Checks the logged in user branch and gives out the appropriate page'''

logintime = datetime.now() #Creating session

db.execute(f'SELECT branch FROM user WHERE useradmin\_id="{userid}"')

branch=db.fetchall()

if work==None:

db.execute(f'INSERT INTO login(userid,branch,session\_in,dept\_no) VALUES("{userid}","{branch[0][0]}","{logintime}","{deptno}")')

connection.commit()

else:

db.execute(f'UPDATE login set session={datetime.now()} WHERE userid="{userid} AND session\_out="0000%"')

branchget = userid.split("#")

print('Please wait you being redirected there! in 3 sec.....')

time.sleep(3)

#Validation

branch = str(branchget[1])

if branch=='ADMIN':

adminHome(userid,logintime)

elif branch=='BILL GENERATION':

bilGenHome(userid,logintime)

elif branch=='BILL DELIVERY':

bilEmailHome(userid,logintime)

###########################################################################

#logout.py

import sys

import time

from datetime import datetime

import mysql.connector as c

from clearscreen import clear

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

**#Logout function**

def logout(userid):

db.execute(f'UPDATE login SET session\_out="{datetime.now()}" WHERE userid="{userid}" AND session\_out="0000%"')

connection.commit()

clear()

print(f'You have been logged out!!! {userid}')

print('The window is closing the 2 sec')

time.sleep(2)

clear()

sys.exit()

#clearscreen.py

from os import name, system

# define our clear function

def clear():

# for windows

if name == 'nt':

\_ = system('cls')

# for mac and linux(here, os.name is 'posix')

else:

\_ = system('clear')

#customerView.py

import mysql.connector as c

import datetime

from os import path

import json

import sys

import time

from clearscreen import clear

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

**#Opening of config.json file**

THIS\_FOLDER = path.dirname(path.abspath(\_\_file\_\_))

my\_file = path.join(THIS\_FOLDER,'files','config\_file', 'config.json')

with open(my\_file, 'r') as c:

params = json.load(c)["params"]

def consumerDetails():

'''This function is the view page for the customers bill generation'''

clear()

db.execute('SELECT consumerno from customer')

detailsconsumerno = db.fetchall()

mydate = datetime.datetime.now()

while True:

try:

consumerno = int(input('Please enter your consumer no.\n'))

except ValueError:

print()

print("Please enter a valid consumer no")

if (consumerno,) not in detailsconsumerno:

print()

print('The consumer no does not exists!! \nPlease enter a valid consumer no')

else:

break

db.execute(f'SELECT \* from customer where consumerno={consumerno} AND month="{mydate.strftime("%B")}"')

custdetails = db.fetchall()[0]

if custdetails[-1]==0:

print('No bill is not generated for this month!')

else:

my\_file1 = path.join(THIS\_FOLDER,'files','messages', 'custdetails.txt')

with open(my\_file1, 'r') as c1:

fileread = c1.read()

print(fileread.format(params['company\_name'],custdetails[3],custdetails[1],custdetails[2],custdetails[4],custdetails[5],custdetails[-1],custdetails[8],custdetails[9]))

print()

print('Press anything the exit!!!')

input()

print(f"Thank you for using the {params['company\_name']} ELECTRICITY CUSTOMER DEPARTMENT SERVICES")

time.sleep(2)

sys.exit()

**#**billGen.py

import json

import time

from datetime import datetime

from math import ceil

from os import getcwd, path

import mysql.connector as c

from clearscreen import clear

from logout import logout

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

#Opening of config.json file

THIS\_FOLDER = path.dirname(path.abspath(\_\_file\_\_))

my\_file = path.join(THIS\_FOLDER,'files','config\_file', 'config.json')

with open(my\_file, 'r') as c:

params = json.load(c)["params"]

def bilGenHome(userid,logintime):

'''This is the bill generation department homepage function'''

mydate = datetime.now()

clear()

**#The bill generation welcome message**

billGenAdmin\_message = open('files/messages/billGennotAdmin\_message.txt','r').read()

funcAdminTuple = ('01#02','00#01')

print(billGenAdmin\_message.format(params['company\_name'],userid,logintime,datetime.now(),mydate.strftime("%B")))

userinput = input()

if userinput not in funcAdminTuple:

clear()

bilGenHome(userid,logintime)

else:

if userinput=='01#02':

generateBill(userid,logintime)

elif userinput=='00#01':

logout(userid)

def generateBill(userid,logintime):

mydate= datetime.now()

month = mydate.strftime("%B")

db.execute(f'SELECT unit\_consumed,consumerno FROM customer WHERE month="{month}" AND amountgen=0.00000')

consumerno = db.fetchall()

**#Now checking the database if the meter department has given the data**

if consumerno==[] or consumerno==None:

print()

print('No data for this month were provided by the Meter Department!')

print('OR')

print('The data was was generated already for this month!')

print('Please contact your Meter Department!')

time.sleep(2)

bilGenHome(userid,logintime)

db.execute(f'SELECT unit\_consumed,consumerno FROM customer WHERE month="{month}"')

consumerno = db.fetchall()

#Getting the prevous reading and current reading

counter=0

for x,y in consumerno:

db.execute(f'SELECT \* From customer WHERE unit\_consumed={x} AND consumerno={y}')

custdetails = db.fetchall()[0]

amountgen,rebate,aduj = Bill\_Calc1(x)

db.execute(f'UPDATE customer SET amountgen={amountgen} WHERE consumerno={y}')

connection.commit()

print(f'THE BILL FOR THE CONSUMER NO {y} IS GENERATED Rs.{amountgen}')

print()

counter+=1

with open(path.join(getcwd(),'files','messages','createdBill.txt'),'r') as fileCreated:

fileReadCreated = fileCreated.read()

with open(path.join(getcwd(),'files','customerBillFolder',f'{x}{y}.txt'),'w+') as fileBillCreated:

fileBillCreated.write(fileReadCreated.format(params['company\_name'],custdetails[3],custdetails[1],custdetails[2],custdetails[4],custdetails[5],rebate,aduj,amountgen,custdetails[8],custdetails[9]))

# UPDATE `customer` SET `amountgen` = '925.60001' WHERE `customer`.`id` = 1

print(counter, " bills generated.")

input('Press anything to continue')

time.sleep(2)

bilGenHome(userid,logintime)

def Bill\_Calc1(unit):

meter = 10 #Meter Rent

MVCA = 60 # Metre Load charge

fixedChrge = 100 #This is the fixed charge

untstr = str(unit)[-1] #This is the Adjustment Chrges

if((unit>=1)and(unit<=50)):#between 1 - 50 units

return (ceil(unit\*4.89)+meter+MVCA+fixedChrge+int(untstr)-1,1,untstr) #At the end the price deducted is rebate

elif((unit>50)and(unit<=150)):#between 50 - 150 units

return (ceil((50\*4.89)+(unit-50)\*5.4)+meter+MVCA+fixedChrge+int(untstr)-1.4,1.4,untstr) #At the end the price deducted is rebate

elif((unit>150)and(unit<=250)):#between 150 - 250 units

return (ceil((50\*4.89)+((150-50)\*5.4)+(unit-150)\*6.41)+meter+MVCA+fixedChrge+int(untstr)-1.5,1.5,untstr) #At the end the price deducted is rebate

elif(unit>250): #above 250 units

return (ceil((50\*4.89)+((150-50)\*5.4)+((250-150)\*6.41)+(unit-250)\*7.16)+meter+MVCA+fixedChrge+int(untstr)-1.6 ,1.6,untstr) #At the end the price deducted is rebate

else:

return (0,0,0)

#amount=0;

#billEmail.py

import json

import os

import smtplib

from email.mime.multipart import MIMEMultipart

from email.mime.text import MIMEText

from datetime import datetime

from os import path, getcwd

import time

import mysql.connector as c

from clearscreen import clear

from logout import logout

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

**#Opening of config.json file**

THIS\_FOLDER = path.dirname(path.abspath(\_\_file\_\_))

my\_file = path.join(THIS\_FOLDER,'files','config\_file', 'config.json')

with open(my\_file, 'r') as c:

params = json.load(c)["params"]

def bilEmailHome(userid,logintime):

'''This is the bill generation department homepage function'''

mydate = datetime.now()

clear() #Clear the screen

billGenAdmin\_message = open('files/messages/billEmailnotAdmin\_message.txt','r').read()

funcAdminTuple = ('01#02','00#01')

print(billGenAdmin\_message.format(params['company\_name'],userid,logintime,datetime.now(),mydate.strftime("%B")))

userinput = input()

if userinput not in funcAdminTuple:

clear() #Clear the screen

bilEmailHome(userid,logintime)

else:

if userinput=='01#02':

sendmailtocustomers(userid,logintime)

elif userinput=='00#01':

logout(userid)

def sendmailtocustomers(userid,logintime):

port, smtp\_server = 465, 'smtp.gmail.com'

login, password = params['email'], params['password\_email']

mydate = datetime.now()

db.execute(f'SELECT email,consumername, consumerno FROM customer WHERE month="{mydate.strftime("%B")}"')

data = db.fetchall()

message = MIMEMultipart()

message["from"] = login

error,emailno = 0,0

for x,y,z in data:

message["subject"] = f"Your electricity bill has been generated for the month {mydate.strftime('%B')} ({y})"

db.execute(f'SELECT unit\_consumed FROM customer WHERE month="{mydate.strftime("%B")}" AND consumerno="{z}"')

unitsConsumed = db.fetchall()[0][0]

try:

with open(path.join(getcwd(),'files','customerBillFolder',f'{unitsConsumed}{z}.txt'),'r') as bill:

body = bill.read()

with smtplib.SMTP(smtp\_server, port) as server:

server.login(login, password)

server.sendmail(message["from"], x, body)

print(f"Email (BILL) sent to {y}")

print()

emailno+=1

except:

print('There was some error!')

print()

error+=1

print(emailno, " Email sent!")

print("With ",error," errors!")

print()

print("Now please wait for two seconds!")

time.sleep(2)

bilEmailHome(userid,logintime)

#adminBillGen.py

import csv

import hashlib

import json

import os

import sys

import time

from datetime import datetime

from os import path, system

import mysql.connector as c

from mysql.connector import Error

from billEmail import bilEmailHome

from billGen import bilGenHome

from clearscreen import clear

from logout import logout

connection = c.connect(host='localhost', database='electricity\_bill', user='root', password='')

db = connection.cursor()

#Opening of config.json file

THIS\_FOLDER = path.dirname(path.abspath(\_\_file\_\_))

my\_file = path.join(THIS\_FOLDER,'files','config\_file', 'config.json')

with open(my\_file, 'r') as c:

params = json.load(c)["params"]

#Admin

###########################################################################

def adminHome(userid,logintime):

#Here userinput is for the functioncode coming from the other function

'''This the admin homepage'''

clear() #Clear the screen

#The admin welcome message

admin\_message = open('files/messages/admin\_message.txt','r').read()

print(admin\_message.format(params['company\_name'],userid,logintime,datetime.now()))

userinput=input()

funcAdminTuple = ('01#01','05#02','06#03','04#01','00#01','02#01','07#44','03#01')

if userinput not in funcAdminTuple:

clear() #Clear the screen

adminHome(userid,logintime)

else:

if userinput=='01#01':

create\_user(userid,logintime)

elif userinput=='05#02':

delete\_user(userid,logintime)

elif userinput=='06#03':

dumpdata('customer',userid,logintime)

elif userinput=='07#44':

dumpdata('user',userid,logintime)

elif userinput=='03#01':

exportdatatoTable(userid,logintime)

elif userinput=='02#01':

bilGenHome(userid, logintime)

elif userinput=='04#01':

bilEmailHome(userid, logintime)

#For the Logout

elif userinput=='00#01':

logout(userid)

###########################################################################

###########################################################################

def create\_user(userid23,logintime23):

'''This function is used to create a user of the software'''

clear() #Clear the screen

db.execute('SELECT dept\_no, deptname from dept')

dept = db.fetchall()

#Printing the department no

print(' Department No | Department name')

print('------------------------------------------------------------')

for i,j in dept:

print(f' {i} {j} ')

print('Following are the department no')

print()

**#Department No dictionary**

db.execute('SELECT dept\_no FROM dept')

sqlquery = db.fetchall()

#Asking to enter the department no

while True:

try:

deptno1 = int(input('Enter the department no\n'))

if (deptno1,) in sqlquery:

break

else:

print(f'{deptno1} Department No is not valid \n Please enter a valid department no !')

except:

print('Enter no not characters!')

#Asking to enter the name

name1 = input('Please enter the name\n')

name=''

for i in name1:

if i.isalpha(): name+=i

while True:

#ENTERING THE PASSWORD

password1 = input('Please enter a password\n')

password2 = input('Please retype the password\n')

if password1==password2:

break

else:

clear()

print('Enter again the two password dosen\'t match!')

hashpass1 = hashlib.md5(password1.encode())

db.execute(f'SELECT deptname FROM dept WHERE dept\_no={deptno1}')

#Getting the branch name

branch = db.fetchall()[0][0]

# generating the useradminid

db.execute(f'select username from user where username="{name}"')

occurence = len(db.fetchall())

useradminid = f'{deptno1}{occurence+1}{name[:2]}#{branch}'

#Inserting the data into database

db.execute(f'INSERT INTO user VALUES(NULL,"{name}","{hashpass1.hexdigest()}","{branch}",{deptno1},"{useradminid}")')

connection.commit()

**#The admin welcome message**

clear()

created\_message = open('files/messages/create\_msg.txt','r').read()

print(created\_message.format(name,password1,branch,deptno1,useradminid))

print()

input('Press any key to continue')

adminHome(userid23,logintime23)

###########################################################################

###########################################################################

def delete\_user(userid,logintime):

clear()

#Department No dictionary

db.execute('SELECT useradmin\_id FROM user')

sqlquery = db.fetchall()

#Asking to enter the department no

while True:

UserAdminId = input('Enter the UserAdminId \n')

if (UserAdminId,) in sqlquery:

break

else:

print(f'{UserAdminId} UserAdminId is not valid \n Please enter a valid UserAdminId !')

db.execute(f'DELETE FROM user WHERE useradmin\_id="{UserAdminId}"')

connection.commit()

print('The user succesfully deleted')

time.sleep(1)

adminHome(userid,logintime)

###########################################################################

###########################################################################

def dumpdata(tablename,userid,logintime):

'''This Function is used to dump all the data from tables to a csv files'''

QUERY = f'SELECT \* FROM {tablename}'

db.execute(QUERY)

result=db.fetchall()

connection.commit()

if tablename=='user':

filename = 'employee\_details'

else:

filename = 'customer\_details'

BASE\_DIR = os.getcwd()

c1 = csv.writer(open(os.path.join(BASE\_DIR,'files','details',f'{filename}.csv'), 'w',newline=''))

for x in result:

c1.writerow(x)

print('The the data has been successfully dumped')

print('The path of the file is:')

print(os.path.join(BASE\_DIR, 'files', 'details', f'{filename}.csv'))

time.sleep(2)

adminHome(userid,logintime)

###########################################################################

###########################################################################

def exportdatatoTable(userid,logintime):

print()

BASE\_DIR = os.getcwd()

print('YOU NEED TO WRITE THE DATA IN A CSV FILE')

print()

print('AND PLACE IT IN THE FOLWWING PATH:')

print(os.path.join(BASE\_DIR, 'files', 'export'))

print()

filename = input('Please you filename that you put in that directory \n(no need of putting the .csv after the filename)\n')

n=0

csv\_data = csv.reader(open(os.path.join(BASE\_DIR, 'files', 'export',f'{filename}.csv'),'r'))

for row in csv\_data:

try:

db.execute(f'INSERT INTO customer VALUES({row[0]},{row[1]},{row[2]},"{row[3]}","{row[4]}",{row[5]},"{row[6]}","{row[7]}","{row[8]}","{row[9]}",{row[10]})')

connection.commit()

except Error: n+=1

print(n,'number of duplicate values detected!!')

time.sleep(2)

adminHome(userid,logintime)

#config.json

{

"params": {

"company\_name": "ABC",

"email": "dhruvashaw@gmail.com",

"password\_email": "cube12345?"

}

}

#admin\_message.txt

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WELCOME TO ADMIN HOMEPAGE OF {} ELECTRICIY DEPPARTMENT

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

USERID : {}

LOGIN TIME: {}

CURRENT TIME: {}

WHAT YOU WANT TO DO?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SL NO. | FUNCTIONS AVAILABLE | FUNCTIONS CODE----------------------------------------------------------------------------------------------------------------------

(1). | REGISTER OPERATOR | 01#01

(2). | DELETE OPERATOR | 05#02

(3). | CHECK ALL THE CUSTOMER DETAILS | 06#03

(4). | CHECK THE BILL GENERATION DEPARTMENT | 02#01

(5). | CHECK the OPERATOR DETAILS | 07#44

(6). | INSERT NEW CUSTOMERS USING CSV FILES | 03#01

(7). | CHECK THE BILL DELIVERY DEPARTMENT | 04#01

(8). | LOGOUT | 00#01

--------------------------------------------------------------------------------------------------------------------------

NOW PLEASE ENTER THE FOLLOWING FUNCTION NO IN ORDER TO EXECUTE A TASK.

#billEmailnotAdmin\_message.txt

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WELCOME TO BILL DELIVERY (EMAIL) DEPARTMENT GENERATION HOMEPAGE OF {} ELECTRICIY DEPPARTMENT

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

USERID : {}

LOGIN TIME: {}

CURRENT TIME: {}

CURRENT MONTH NAME : {}

WHAT YOU WANT TO DO?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SL NO. | FUNCTIONS AVAILABLE | FUNCTIONS CODE

--------------------------------------------------------------------------------------------------------------------------

(1). | SEND THE BILLS TO CUSTOMERS FOR THIS MONTH | 01#02

(2). | LOGOUT | 00#01

--------------------------------------------------------------------------------------------------------------------------

NOW PLEASE ENTER THE FOLLOWING FUNCTION NO IN ORDER TO EXECUTE A TASK.

# billGennotAdmin\_message.txt

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WELCOME TO BILL GENERATION DEPARTMENT HOMEPAGE OF {} ELECTRICIY DEPPARTMENT

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

USERID : {}

LOGIN TIME: {}

CURRENT TIME: {}

CURRENT MONTH NAME : {}

WHAT YOU WANT TO DO?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SL NO. | FUNCTIONS AVAILABLE | FUNCTIONS CODE

--------------------------------------------------------------------------------------------------------------------------

(1). | GENERATE THE BILL FOR THIS MONTH | 01#02

(2). | LOGOUT | 00#01

--------------------------------------------------------------------------------------------------------------------------

NOW PLEASE ENTER THE FOLLOWING FUNCTION NO IN ORDER TO EXECUTE A TASK.

#create\_msg.txt

The user is created with the follwoing credentials:

USERNAME : {}

PASSWORD : {}

BRANCH : {}

DEPARTMENT NO : {}

USERADMIN ID : {}

# createdBill.txt

--------------------------------------------------------------------------------------------------------

{} ELECTRICITY CUSTOMER BILL

-------------------------------------------------------------------------------------------------------

Consumer Name : {}

Meter No : {}

Consumer No : {}

Meter Load : {}

Units Consumed : {}

Meter Rent : ₹10

MVCA : ₹60

Fixed Charge : ₹100

Rebate : ₹{}

Adujustment Charges : {}

Net Amount Payable : ₹ {}

Email : {}

Address : {}

# custdetails.txt

--------------------------------------------------------------------------------------------------------

{} ELECTRICITY CUSTOMER DEPARTMENT

--------------------------------------------------------------------------------------------------------

Consumer Name : {}

Meter No : {}

Consumer No : {}

Meter Load : {}

Units Consumed : {}

Net Amount Payable : {}

Email : {}

Address : {}

# welcome\_message.txt

Welcome to the {} ELECTRICITY BILL MANAGEMENT

The following departments are available for the login.

SLNO.| DEPARTMENT NAME | DEPARTMENT NO.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(1). | ADMIN (SUPERUSER) | 156758

(2). | ELECTRICITY BILL GENERATOR | 145759

(3). | ELECTRICITY BILL DELIVERY | 145761

(4). | CUSTOMER VIEW BILL SERVICES (ONLY CONSUMERS) 15675812

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PLEASE ENTER THE RESPECTIVE DEPARTMENT NO. IN THE INPUT FIELD GIVEN BELOW

Biblio graphy

* <https://www.codewithharry.com/>
* <https://www.geeksforgeeks.org/>
* <https://www.python.org/doc/>
* <https://stackoverflow.com/>

**Admin Console Screen Shots**

A screenshot of a video game

Description automatically generated

**Admin Console Screen Shots (Cont’d)**

A screenshot of a computer screen

Description automatically generated

**Bill Generation Console Screenshot**

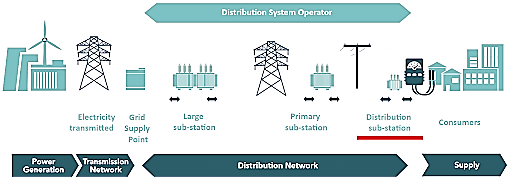
A screenshot of a video game

Description automatically generated

**Bill – Emailing Console Screenshot**

A screenshot of a computer

Description automatically generated





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