APARTMENT MANAGEMENT SYSTEM

A PROJECT REPORT

Submitted by

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in partial fulfilment for the award of the

degree of

BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY **KUMARAGURU**

COLLEGE OF TECHNOLOGY COIMBATORE

(An autonomous institution affiliated to Anna University, Chennai)

BONAFIDE CERTIFICATE

Certified that this project report "**APARTMENT MANAGEMENT SYSTEM**" is the bonafide work of ***RAMPRABU P(21BIT036) and RUPAK G B (21BIT039)*** who carried out the project work under my supervision.

SIGNATURE	SIGNATURE
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HEAD OF THE DEPARTMENT	**SUPERVISOR**
Professor	Assistant Professor
Information Technology	Information Technology

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DECLARATION

We ***RAMPRABU P(21BIT036) and RUPAK G B (21BIT039),***

hereby declare that the project "**APARTMENT MANAGEMENT SYSTEM**" is done by us and to the study of our knowledge, a similar work has not been submitted to any other institution, for the fulfilment of the required course of study. This report is submitted on the partial fulfilment of the requirements for all awards of the Degree of Bachelor of Information Technology at Kumaraguru College of Technology, Coimbatore. We certify that the declaration made above by the candidates is true.

Place: Coimbatore

Dr. P. SHENBAGAM

Assistant Professor

Date:

Information Technology

ABSTRACT

Our Apartment Management System aims at providing a database system for the residents of the apartment and for the people who are looking for apartment and also for the managing team of the apartment.

The prime objective is to create table for storing the details about blocks, their floors and the apartments in each block and also the people who resides in that apartment.

Our project also includes features like subscriptions for recreations, water and electricity bills, visiting log and parking lot.

The project also contains features to delete the residents and if the owner is deleted then the ownership will be handled well by passing it to senior citizen of the resident.

The visiting log is maintained by keeping track of the current date and time while checking in and out. The subscription log will be added by the admin based on their usage. Then the system will be kept track of the mode of payment the reference id if online payment and the paid date.

SYSTEM STUDY

EXISITING SYSTEM:

The current system is a manual based which is not computerized especially for the residents of the

apartment. Also this system takes a lot of time for performing different activities and difficult to maintain the visitors' records.

Limitations of Existing System:

- Existing System is completely hard-copy.
- Time consuming procedure.
- Tracking of records is difficult.

On a whole, every year the company is designing new apartments and its a difficult task to manage the records of each and every apartment in the manual system. It will not only take a lot of time but also increases the chances of errors. This may create a problem when you need details of any particular project.

PROPOSED SYSTEM:

Ours will be a robust database which stores all the data related to these various apartments, their maintenance related information etc.
It helps to keep track of all the payments done by customers towards maintenance advances or purchases etc.
This tool will ease the user to manage huge data of different customers who own apartments. For the maintenance part of the interface it shall have the data of all the maintenance charges paid by the customers, whether its done quarterly or annually.

It also records the mode of payment. It will also hold all the details such as the apartment number, subscription log, visiting log etc.

SYSTEM REQUIREMENTS:

I. Software:

   i. OS: Linux/Windows/Mac OS

   ii. Languages Used: MYSQL – RDBMS, JAVA – Backend Connectivity

   iii. Environment: Eclipse/Net Beans/ VS Code

II. Hardware:

   a) CPU:
   b) RAM:
   c) HARD DISK:

SYSTEM DESIGN

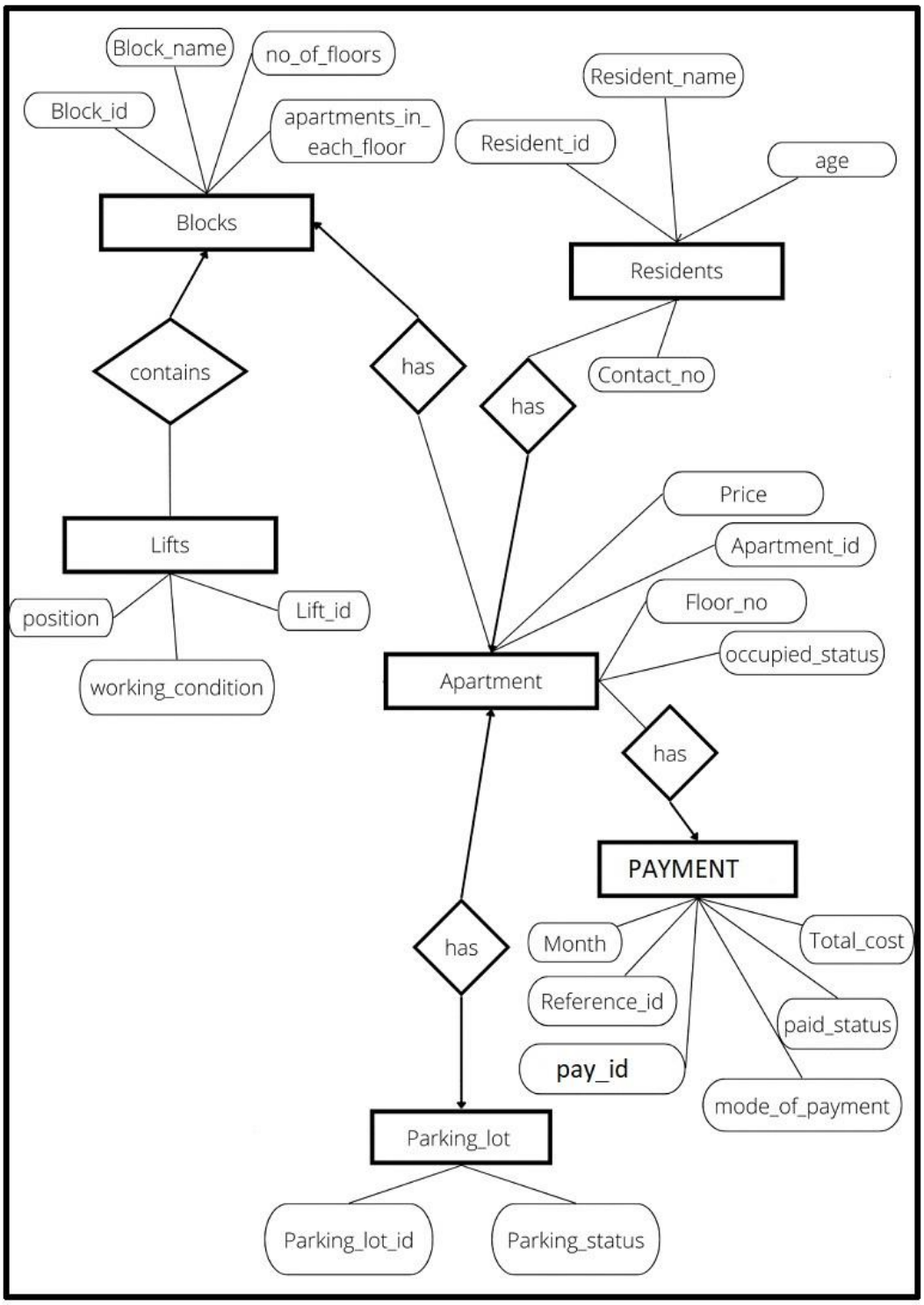

Block_name
no_of_floors
Block_id
apartments_in_
each_floor
Blocks
contains
has
Lifts
position
Lift_id
working_condition
Resident_name
Resident_id
age
Residents
Contact_no
has
Price
Apartment_id
Floor_no
occupied_status
Apartment
has
PAYMENT
Month
Total_cost
Reference_id
paid_status
pay_id
mode_of_payment
has
Parking_lot
Parking_lot_id
Parking_status

TABLE DESIGN

S.no	Table name	Attributes
1	Block	Block(block_id,block_name,no_of_floors, apartments_each_floor,no_of_lifts)
2	Apartment	Apartment(Apartment_id, floor_number, price, occupied, owner_id)
3	Residents	Residents(Resident_id, name, gender, age, blood_group, contact)
4	Lifts	Lifts(lift_id, work_condition,position)
5	Parking_lot	Parking_lot(parking_lot_id,parking_status)
6	Payment	Payment(payment_id, bill_arrived_date, bill_paid_date, total_cost, mode_of_payment,ref_id,_apartment_id)

SYSTEM IMPLEMENTATION

I. Create Database Comment:

i. create database Apartment_Management;

II. Create Table Comments

Blocks

create table Blocks(Block_id int auto_increment primary key,block_name varchar(20),no_of_floors int not null,no_of_apartments_in_each_floor int not null,no_of_lifts int not null);

Apartment

create table Apartment(Apartment_id int auto_increment primary key,floor_number int not null,price double not null,Block_id int not null,foreign key(Block_id) references Blocks(Block_id));

Residents

create table Residents(Resident_id int auto_increment primary key,name varchar(50) not null,age int not null,Apartment_id int not null,foreign key(Apartment_id) references Apartment(Apartment_id));

III. Check constraint for Apartment

alter table Apartment add foreign key(owner_id) references Residents(Resident_id);

occupied

```
create table occupied(Apartment_id int not null primary key,owner_id
int,status boolean,foreign key(Apartment_id) references
Apartment( Apartment_id),foreign key(owner_id) references
Residents(Resident_id));
```

IV. Check constraint for occupied

```
alter table occupied add check(status = true or(status = false and
owner_id is null));
```

lifts

```
create table lifts(lift_id int auto_increment primary
key,working_condition boolean,position varchar(7),Block_id int not null,
foreign key(Block_id) references Blocks(Block_id));
```

Parking_lot

```
create table Parking_lot(parking_lot_id int auto_increment primary key,
parking_status boolean,Apartment_id int not null,foreign key
(Apartment_id) references Apartment(Apartment_id));
```

payment

```
create table payment(pay_id int auto_increment primary key,
bill_arrived_date date not null,bill_paid_date date,total_cost
double,mode_of_payment varchar(10),ref_id int,Apartment_id
int not null,foreign key(Apartment_id) references
Apartment(Apartment_id));
```

V. Check constraint for Subscription_log

alter table Subscription_log add check(ref_id is not null or(ref_id is null and mode_of_payment="online"));

Contact create table Contact(Resident_id int not null,contact_number varchar(12),primary key(Resident_id,contact_number),foreign key(Resident_id) references Residents(Resident_id));

Sample for Insertion Commands

a. Blocks Table

insert into Blocks values(1,'A',3,4,2),(2,'B',3,4,3);

b. Apartment Table

insert into Apartment(Apartment_id,floor_number,price,Block_id) values(101,0,3500000,1),(102,0,3500000,1),(103,0,3500000,1),(104,0,3500000,1);

c. Residents Table

insert into Residents values(1,'Vijay','M',30,'O+ve',101),(2,'Shalini','F',29,'B+ve',101);

Setting owner id for an apartment

update Apartment set owner_id=1 where Apartment_id=101;

Join Command to use find the owner name of the Apartment

select name from Residents inner join Apartment on
Apartment.owner_id=Residents.Resident_id;
lifts insert into lifts values(1,1,'front',1),(2,1,'back',1);

Parking_lot insert into Parking_lot
values(1,1,101),(2,1,113);

Contact insert into
Contact
values(1,'9095014010'),(2,'9002210555'),(3,'9940891672'),(4,'888
0596912'),(4,'9990011357');

occupied insert into occupied
values(101,1,1),(113,4,1); Subsciption_log
insert into Subscription_log values(1,'2022-
05-01','2022-05-
05',10000,'online',10421,101),(2,'2022-05-03','2022-05-
06',20000,'online',10422,113);

Source Code for JDBC Connectivity and Menu Driven Program

ADMIN LOGIN-PAGE:

```
from tkinter import *
from tkinter import messagebox
from PIL import ImageTk

def login():
  if unEntry.get() == '' or pwEntry.get() == '':
    messagebox.showerror('Error','Fields cannot be empty')
  elif unEntry.get()=='admin' and pwEntry.get()=='admin':
     messagebox.showinfo('Success','Welcome')
     window.destroy()
     import admin_page
  else:
```

```
    messagebox.showerror('Error','Please enter correct credentials')
window=Tk()
window.geometry('1525x760+0+0')
window.title('Admin Login System of Apartment Management System')
window.resizable(0,0)
backImage=ImageTk.PhotoImage(file='lpg.webp')
label1=Label(window,image=backImage)
label1.pack()
loginFrame=Frame(window,bg='white')
loginFrame.place(x=400,y=150)
logoImage=PhotoImage(file='alogo.png')
label2=Label(loginFrame,image=logoImage)
label2.grid(row=0,column=1,columnspan=2,pady=10)

unImage=PhotoImage(file='user.png')
unLabel=Label(loginFrame,image=unImage,text='Adminname',compound=LEFT
,font=('times new roman',20,'bold'),bg='white')
unLabel.grid(row=1,column=1,pady=10,padx=20)
unEntry=Entry(loginFrame,font=('times new
roman',20,'bold'),bd=5,fg='royalblue')
unEntry.grid(row=1,column=2,pady=10,padx=20)


pwImage = PhotoImage(file='pass.png')
pwLabel = Label(loginFrame, image=pwImage, text='Password',
compound=LEFT, font=('times new roman', 20, 'bold'),
                bg='white')
pwLabel.grid(row=2, column=1, pady=10, padx=20)
pwEntry = Entry(loginFrame, font=('times new roman', 20, 'bold'), bd=5,
fg='royalblue')
pwEntry.grid(row=2, column=2, pady=10, padx=20)


loginButton=Button(loginFrame,text='Login',font=('times new roman', 14,
'bold'),width=15,fg='white'
```

```
,bg='cornflowerblue',activebackground='cornflowerblue',activeforeground='wh
ite',cursor='hand2'
                    ,command=login)
loginButton.grid(row=3,column=2,pady=10)

window.mainloop()
```

ADMIN-PAGE:

```
from tkinter import *
import time
import ttkthemes
from tkinter import ttk,messagebox
import mysql.connector
mydb=mysql.connector.connect(
host="localhost",
username="root",
passwd="ram9486",
database="apart"
)
if mydb.is_connected():
 print("connection established")
mycursor=mydb.cursor()



def exit():
   result=messagebox.askyesno('CONFIRM','DO YOU WANT TO LOG-OUT')
   if result:
      root.destroy()
      import admin_login
   else:
      pass

def clock():
   date=time.strftime('%d/%m/%Y')
```

```
    currenttime=time.strftime('%H:%M:%S')
    datetimeLabel.config(text=f'   Date: {date}\nTime: {currenttime}')
    datetimeLabel.after(1000,clock)

def addapp():
    def add_data():
        global mycursor,mydb
        if floorEntry.get()=='' or priceEntry.get()=='' or BlockEntry.get()==''':
            messagebox.showerror('Error','All fields are required',parent=addwin)
        else:

            query='insert into
apartment(Apartment_id,floor_number,price,block_id) values(%s,%s,%s,%s)'

mycursor.execute(query,(idEntry.get(),floorEntry.get(),priceEntry.get(),BlockEnt
ry.get()))
            result=messagebox.askyesno('Confirm','Data added successfully.Do you
want to make any change?',parent=addwin)
            if result:
                idEntry.delete(0,END)
                floorEntry.delete(0,END)
                priceEntry.delete(0,END)
                BlockEntry.delete(0,END)
            else:
                pass
                mydb.commit()


    addwin=Toplevel()
    addwin.grab_set()
    addwin.resizable(False,False)
    idLabel=Label(addwin,text='Appartment_id',font=('times new
roman',20,'bold'))
    idLabel.grid(row=0,column=0,padx=30,pady=15,stick=W)
    idEntry=Entry(addwin,font=('times new roman', 20, 'bold'), bd=5, fg='dark
orange',width=24)
    idEntry.grid(row=0,column=1,pady=15,padx=10)
```

```
    floorLabel = Label(addwin, text='Floor no', font=('times new roman', 20,
'bold'))
    floorLabel.grid(row=2, column=0, padx=30, pady=15,stick=W)
    floorEntry = Entry(addwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    floorEntry.grid(row=2, column=1, pady=15, padx=10)

    priceLabel = Label(addwin, text='Price', font=('times new roman', 20, 'bold'))
    priceLabel.grid(row=4, column=0, padx=30, pady=15,stick=W)
    priceEntry = Entry(addwin,font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    priceEntry.grid(row=4, column=1, pady=15, padx=10)

    BlockLabel = Label(addwin, text='Block_id', font=('times new roman', 20,
'bold'))
    BlockLabel.grid(row=6, column=0, padx=30, pady=15,stick=W)
    BlockEntry = Entry(addwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    BlockEntry.grid(row=6, column=1, pady=15, padx=10)

    addbutton=ttk.Button(addwin,text='SUBMIT',command=add_data)
    addbutton.grid(row=7,columnspan=2,pady=15)

def addres():
    def add_rdata():
        global mycursor,mydb
        apid = apidEntry.get()
        query=f"select Apartment_id from apartment where
Apartment_id='{apid}'"
        mycursor.execute(query)
        row = mycursor.fetchone()
        if row is None:
            messagebox.showerror('Error','Apartment not Avilable ')
            addresidwin.destroy()
```

```
    if ridEntry.get()=='' or nameEntry.get()=='' or apidEntry.get()=='' or
ageEntry.get()=='' or phoneEntry.get()==='':
        messagebox.showerror('Error','All fields are
required',parent=addresidwin)
    try:

        query='insert into
residents(Resident_id,name,Apartment_id,age,phone)
values(%s,%s,%s,%s,%s)'

mycursor.execute(query,(ridEntry.get(),nameEntry.get(),apidEntry.get(),ageEntr
y.get(),phoneEntry.get()))
        result=messagebox.askyesno('Confirm','Data added successfully.Do you
want to make any change?',parent=addresidwin)
        if result:
            ridEntry.delete(0,END)
            nameEntry.delete(0,END)
            ageEntry.delete(0,END)
            apidEntry.delete(0,END)
            phoneEntry.delete(0,END)
        else:
            pass
            mydb.commit()
    except:
        messagebox.showerror('Error','Id cannot be
repeted',parent=addresidwin)
        return

    query='select * from residents'
    mycursor.execute(query)
    fetched_data=mycursor.fetchall()
    resTable.delete(*resTable.get_children())

    for data in fetched_data:
        datalist=list(data)
        resTable.insert('',END,values=datalist)
```

```
    addresidwin=Toplevel()
    addresidwin.grab_set()
    addresidwin.resizable(False,False)
    ridLabel=Label(addresidwin,text='Resident_id',font=('times new
roman',20,'bold'))
    ridLabel.grid(row=0,column=0,padx=30,pady=15,stick=W)
    ridEntry=Entry(addresidwin,font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    ridEntry.grid(row=0,column=1,pady=15,padx=10)

    nameLabel = Label(addresidwin, text='Name', font=('times new roman', 20,
'bold'))
    nameLabel.grid(row=2, column=0, padx=30, pady=15,stick=W)
    nameEntry = Entry(addresidwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    nameEntry.grid(row=2, column=1, pady=15, padx=10)

    ageLabel = Label(addresidwin, text='Age', font=('times new roman', 20,
'bold'))
    ageLabel.grid(row=4, column=0, padx=30, pady=15,stick=W)
    ageEntry = Entry(addresidwin,font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    ageEntry.grid(row=4, column=1, pady=15, padx=10)

    phoneLabel = Label(addresidwin, text='Phone_no', font=('times new roman',
20, 'bold'))
    phoneLabel.grid(row=6, column=0, padx=30, pady=15,stick=W)
    phoneEntry = Entry(addresidwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
    phoneEntry.grid(row=6, column=1, pady=15, padx=10)

    apidLabel = Label(addresidwin, text='Apartment_id', font=('times new
roman', 20, 'bold'))
    apidLabel.grid(row=8, column=0, padx=30, pady=15, stick=W)
    apidEntry = Entry(addresidwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
```

```
    apidEntry.grid(row=8, column=1, pady=15, padx=10)

    addbutton=ttk.Button(addresidwin,text='SUBMIT',command=add_rdata)
    addbutton.grid(row=9,columnspan=2,pady=15)

def editpay():

        def submit():
            apartment_id = apartment_id_entry.get()
            a_id = int(apartment_id)
            a_date = a_date_entry.get()
            cost = total_cost_entry.get()
            query = 'INSERT INTO payment (bill_arrived_date, total_cost,
Apartment_id) VALUES (%s, %s, %s)'
            values = (a_date, cost, a_id)

            try:

                mycursor.execute(query, values)
                mydb.commit()
                messagebox.showinfo("Success", "Subscription added successfully")
            except mysql.connector.Error as e:
                messagebox.showerror("Error", str(e))
            finally:
                if mycursor:
                    mycursor.close()


        edpaywin = Toplevel()
        edpaywin.grab_set()
        edpaywin.resizable(False, False)
        apartment_id_label = Label(edpaywin, text="Enter the apartment
id:",font=('times new roman',20,'bold'))
        apartment_id_label.grid(row=0,column=0,padx=30,pady=15,stick=W)
        apartment_id_entry = Entry(edpaywin,font=('times new roman', 20,
'bold'), bd=5, fg='dark orange',width=24)
        apartment_id_entry.grid(row=0,column=1,pady=15,padx=10)
```

```
        a_date_label = Label(edpaywin, text="Enter the Bill Arrived
Date:",font=('times new roman',20,'bold'))
        a_date_label.grid(row=2,column=0,padx=30,pady=15,stick=W)
        a_date_entry = Entry(edpaywin,font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange',width=24)
        a_date_entry.grid(row=2,column=1,pady=15,padx=10)

        total_cost_label = Label(edpaywin, text="Enter the total cost:",font=('times
new roman',20,'bold'))
        total_cost_label.grid(row=4,column=0,padx=30,pady=15,stick=W)
        total_cost_entry = Entry(edpaywin,font=('times new roman', 20, 'bold'),
bd=5, fg='dark orange',width=24)
        total_cost_entry.grid(row=4,column=1,pady=15,padx=10)

        submit_button=ttk.Button(edpaywin,text="Submit",command=submit)
        submit_button.grid(row=6,columnspan=2,pady=15)


def parking():
    global mycursor, mydb
    def topparkin():
        pkwin = Toplevel()
        pkwin.title('Parking')
        pkwin.grab_set()
        pkwin.resizable(False, False)
        scrollbarx = Scrollbar(pkwin, orient=HORIZONTAL)
        scrollbary = Scrollbar(pkwin, orient=VERTICAL)
        parktreeTable = ttk.Treeview(pkwin, columns=('Parking_lot_id',
'Parking_status','Apartment_id'),
                                     xscrollcommand=scrollbarx.set,
yscrollcommand=scrollbary.set)
        scrollbarx.config(command=parktreeTable.xview)
        scrollbary.config(command=parktreeTable.yview)
        scrollbarx.pack(side=BOTTOM, fill=X)
        scrollbary.pack(side=RIGHT, fill=Y)
        parktreeTable.pack(fill=BOTH, expand=1)
```

```
    parktreeTable.heading('Parking_lot_id', text='Parking_lot_id')
    parktreeTable.heading('Parking_status', text='Parking_status')
    parktreeTable.heading('Apartment_id', text='Apartment_id')

    parktreeTable.column('Parking_lot_id', width=50, anchor=CENTER)
    parktreeTable.column('Apartment_id', width=200, anchor=CENTER)
    parktreeTable.column('Parking_status', width=200, anchor=CENTER)

    style = ttk.Style()
    style.configure('Treeview', rowheight=40, font=('arial', 12, 'bold'),
foreground='black', background='white'
                , fieldbackground='white')
    style.configure('Treeview.Heading', font=('arial', 14, 'bold'))
    parktreeTable.config(show='headings')

    query = 'select * from parking_lot'
    mycursor.execute(query)

    parktreeTable.delete(*parktreeTable.get_children())
    fetchdata = mycursor.fetchall()
    for data in fetchdata:
        parktreeTable.insert('', END, values=data)



  def submit():
    query = 'delete from parking_lot where Apartment_id=%s'
    apid = apartment_id_entry.get()
    mycursor.execute(query, (apid,))
    mydb.commit()
    choice = parking_status_var.get()
    a_id = apartment_id_entry.get()
    query = "INSERT INTO parking_lot (parking_status, Apartment_id) VALUES
(%s, %s)"
    mycursor.execute(query, (choice, a_id))
```

```
        mydb.commit()
        messagebox.showinfo("Success", "Parking entry added successfully.")

        topparkin()

    parkwin = Toplevel()
    parkwin.grab_set()
    parkwin.resizable(False, False)

    apartment_id_label = Label(parkwin, text="Enter the apartment id:",
font=('times new roman', 20, 'bold'))
    apartment_id_label.grid(row=0, column=0, padx=30, pady=15, stick=W)
    apartment_id_entry = Entry(parkwin, font=('times new roman', 20, 'bold'),
bd=5, fg='dark orange', width=24)
    apartment_id_entry.grid(row=0, column=1, pady=15, padx=10)

    parking_status_label = Label(parkwin, text="Parking Status (1 for available, 0
for occupied):")
    parking_status_label.grid(row=2, column=0, padx=30, pady=15, stick=W)
    parking_status_var = IntVar()
    park_status_radio1 = ttk.Radiobutton(parkwin, text="Yes",
variable=parking_status_var , value=1)
    park_status_radio1.grid(row=2, column=1, pady=15, padx=2)
    park_status_radio2 = ttk.Radiobutton(parkwin, text="No",
variable=parking_status_var , value=0)
    park_status_radio2.grid(row=2, column=2, pady=15, padx=2)

    submit_button = ttk.Button(parkwin, text="Submit", command=submit)
    submit_button.grid(row=3, columnspan=2, pady=15)

def searchres():
    def search_rdata():
        global mycursor, mydb
        query='select * from residents where Resident_id=%s or name=%s or
Apartment_id=%s or age=%s or phone=%s '
```

```
mycursor.execute(query,(ridEntry.get(),nameEntry.get(),apidEntry.get(),ageEntr
y.get(),phoneEntry.get()))
        resTable.delete(*resTable.get_children())
        fetchdata=mycursor.fetchall()
        for data in fetchdata:
            resTable.insert('',END,values=data)


    searchwin = Toplevel()
    searchwin.title('Search resident')
    searchwin.grab_set()
    searchwin.resizable(False, False)
    ridLabel = Label(searchwin, text='Resident_id', font=('times new roman', 20,
'bold'))
    ridLabel.grid(row=0, column=0, padx=30, pady=15, stick=W)
    ridEntry = Entry(searchwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
    ridEntry.grid(row=0, column=1, pady=15, padx=10)

    nameLabel = Label(searchwin, text='Name', font=('times new roman', 20,
'bold'))
    nameLabel.grid(row=2, column=0, padx=30, pady=15, stick=W)
    nameEntry = Entry(searchwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
    nameEntry.grid(row=2, column=1, pady=15, padx=10)

    ageLabel = Label(searchwin, text='Age', font=('times new roman', 20, 'bold'))
    ageLabel.grid(row=4, column=0, padx=30, pady=15, stick=W)
    ageEntry = Entry(searchwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
    ageEntry.grid(row=4, column=1, pady=15, padx=10)

    phoneLabel = Label(searchwin, text='Phone_no', font=('times new roman',
20, 'bold'))
    phoneLabel.grid(row=6, column=0, padx=30, pady=15, stick=W)
```

```
    phoneEntry = Entry(searchwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
    phoneEntry.grid(row=6, column=1, pady=15, padx=10)

    apidLabel = Label(searchwin, text='Apartment_id', font=('times new roman',
20, 'bold'))
    apidLabel.grid(row=8, column=0, padx=30, pady=15, stick=W)
    apidEntry = Entry(searchwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
    apidEntry.grid(row=8, column=1, pady=15, padx=10)

    addbutton = ttk.Button(searchwin, text='SEARCH', command=search_rdata)
    addbutton.grid(row=9, columnspan=2, pady=15)

def deleteres():

    selitem=resTable.selection()[0]
    rid=resTable.item(selitem)['values'][0]
    query='delete from residents where Resident_id= %s '
    seldata=(rid,)
    mycursor.execute(query,seldata)
    mydb.commit()
    messagebox.showinfo('Deleted',f'resident {rid} is deleted ')
    query1='select * from residents'
    mycursor.execute(query1)
    fetchdata=mycursor.fetchall()
    resTable.delete(*resTable.get_children())
    for data in fetchdata:
        resTable.insert('',END,values=data)

def viewall():

    query1 = 'select * from residents'
    mycursor.execute(query1)
    fetchdata = mycursor.fetchall()
    resTable.delete(*resTable.get_children())
    for data in fetchdata:
```

```
        resTable.insert('', END, values=data)

def unpaybill():
    upiwin = Toplevel()
    upiwin.title('Unpayed bills')
    upiwin.grab_set()
    upiwin.resizable(False, False)
    scrollbarx = Scrollbar(upiwin, orient=HORIZONTAL)
    scrollbary = Scrollbar(upiwin, orient=VERTICAL)

    unpayTable = ttk.Treeview(upiwin, columns=('Pay_id',
'Apartment_id','Arrived_date','Total_cost'),
                              xscrollcommand=scrollbarx.set, yscrollcommand=scrollbary.set)
    scrollbarx.config(command=unpayTable.xview)
    scrollbary.config(command=unpayTable.yview)
    scrollbarx.pack(side=BOTTOM, fill=X)
    scrollbary.pack(side=RIGHT, fill=Y)
    unpayTable.pack(fill=BOTH, expand=1)

    unpayTable.heading('Pay_id', text='Pay_id')
    unpayTable.heading('Apartment_id', text='Apartment_id')
    unpayTable.heading('Arrived_date', text='Arrived_date')
    unpayTable.heading('Total_cost', text='Total_cost')

    unpayTable.column('Pay_id', width=50, anchor=CENTER)
    unpayTable.column('Apartment_id', width=200, anchor=CENTER)
    unpayTable.column('Arrived_date', width=200, anchor=CENTER)
    unpayTable.column('Total_cost', width=100, anchor=CENTER)

    style = ttk.Style()
    style.configure('Treeview', rowheight=40, font=('arial', 12, 'bold'),
foreground='black', background='white'
                  , fieldbackground='white')
    style.configure('Treeview.Heading', font=('arial', 14, 'bold'))
    unpayTable.config(show='headings')
```

```
    query = 'select pay_id,Apartment_id,bill_arrived_date,total_cost from
payment where bill_paid_date is null and pay_id is not null'
    mycursor.execute(query)

    unpayTable.delete(*unpayTable.get_children())
    fetchdata = mycursor.fetchall()
    for data in fetchdata:
        unpayTable.insert('', END, values=data)


count=0
text=''

def slider():
    global text,count
    if count==len(a):
        count=0
        text=''
    text=text+a[count]
    sliderLabel.config(text=text)
    count+=1
    sliderLabel.after(300,slider)


root=ttkthemes.ThemedTk()

root.get_themes()
root.set_theme('radiance')

root.geometry('1474x750+0+0')
root.resizable(0,0)
root.title('Apartment Management System')

datetimeLabel=Label(root,font=('times new roman',18,'bold'))
datetimeLabel.place(x=5,y=5)
clock()
```

```
a='Apartment Management System'
sliderLabel=Label(root,text=a,font=('arial',28,'italic bold'),width=50)
sliderLabel.place(x=200,y=0)
slider()

connectButton=ttk.Button(root,text='LOG OUT',command=exit)
connectButton.place(x=1300,y=0)

leftFrame=Frame(root)
leftFrame.place(x=50,y=80,width=300,height=600)

logoimage=PhotoImage(file='resident.png')
logoLabel=Label(leftFrame,image=logoimage)
logoLabel.grid(row=0,column=0)

addflatbutton=ttk.Button(leftFrame,text='Add
Appartment',cursor='hand2',width=20,command=addapp)
addflatbutton.grid(row=1,column=0,pady=10)
adresibutton=ttk.Button(leftFrame,text='Add new
resident',cursor='hand2',width=20,command=addres)
adresibutton.grid(row=2,column=0,pady=10)
adpaybutton=ttk.Button(leftFrame,text='Add Pay
cost',cursor='hand2',width=20,command=editpay)
adpaybutton.grid(row=3,column=0,pady=10)
parkbutton=ttk.Button(leftFrame,text='Edit
Parking',cursor='hand2',width=20,command=parking)
parkbutton.grid(row=4,column=0,pady=10)
vunpaybutton=ttk.Button(leftFrame,text='View Unpaid
bills',cursor='hand2',width=20,command=unpaybill)
vunpaybutton.grid(row=5,column=0,pady=10)
vallresbutton=ttk.Button(leftFrame,text='View All
Residents',cursor='hand2',width=20,command=viewall)
vallresbutton.grid(row=6,column=0,pady=10)
searchbutton=ttk.Button(leftFrame,text='Search
Resident',cursor='hand2',width=20,command=searchres)
searchbutton.grid(row=7,column=0,pady=10)
```

```
deleresbutton=ttk.Button(leftFrame,text='Delete
Resident',cursor='hand2',width=20,command=deleteres)
deleresbutton.grid(row=8,column=0,pady=10)


rightFrame = Frame(root, bg='white')
rightFrame.place(x=350, y=80, width=1100, height=650)
scrollbarx = Scrollbar(rightFrame,orient=HORIZONTAL)
scrollbary = Scrollbar(rightFrame,orient=VERTICAL)

resTable=ttk.Treeview(rightFrame,columns=('Resident_id','Name','Apartment_i
d','Age','Contact.no'),
                xscrollcommand=scrollbarx.set,yscrollcommand=scrollbary.set)
scrollbarx.config(command=resTable.xview)
scrollbary.config(command=resTable.yview)
scrollbarx.pack(side=BOTTOM,fill=X)
scrollbary.pack(side=RIGHT,fill=Y)
resTable.pack(fill=BOTH,expand=1)

resTable.heading('Resident_id',text='Resident_id')
resTable.heading('Name',text='Name')
resTable.heading('Apartment_id',text='Apartment_id')
resTable.heading('Age',text='Age')
resTable.heading('Contact.no',text='Contact.no')

resTable.column('Resident_id',width=50,anchor=CENTER)
resTable.column('Name',width=300,anchor=CENTER)
resTable.column('Apartment_id',width=200,anchor=CENTER)
resTable.column('Age',width=100,anchor=CENTER)
resTable.column('Contact.no',width=200,anchor=CENTER)

style=ttk.Style()
style.configure('Treeview',rowheight=40,font=('arial',12,'bold'),foreground='bla
ck',background='white'
            ,fieldbackground='white')
style.configure('Treeview.Heading',font=('arial',14,'bold'))
resTable.config(show='headings')
```

```
root.mainloop()
```

USER LOGIN-PAGE:

```
from tkinter import *

from tkinter import messagebox
from PIL import ImageTk
import mysql.connector


mydb=mysql.connector.connect(
   host="localhost",
   username="root",
   passwd="ram9486",
   database="apart"
)

if mydb.is_connected():
 print("login connection established")
mycursor=mydb.cursor()

def login():
   username = unEntry.get()
   password = pwEntry.get()
   query = f"SELECT * FROM residents WHERE name = '{username}' AND
resident_id = '{password}'"
   mycursor.execute(query)
   row = mycursor.fetchone()
   if row is not None:
      messagebox.showinfo("Login", "Login successful!")
      window.destroy()
      import profile_page
      def uss():
         return (username)

      def pss():
```

```
        return (password)
    uss(username)
    pss(password)

  else:
    messagebox.showerror("Login", "Invalid username or password.")

window=Tk()
window.geometry('1525x760+0+0')
window.title('Login System of Apartment Management System')
window.resizable(0,0)
backImage=ImageTk.PhotoImage(file='lpg.webp')
label1=Label(window,image=backImage)
label1.pack()
loginFrame=Frame(window,bg='white')
loginFrame.place(x=400,y=150)
logoImage=PhotoImage(file='alogo.png')
label2=Label(loginFrame,image=logoImage)
label2.grid(row=0,column=1,columnspan=2,pady=10)

unImage=PhotoImage(file='user.png')
unLabel=Label(loginFrame,image=unImage,text='Username',compound=LEFT,f
ont=('times new roman',20,'bold'),bg='white')
unLabel.grid(row=1,column=1,pady=10,padx=20)
unEntry=Entry(loginFrame,font=('times new
roman',20,'bold'),bd=5,fg='royalblue')
unEntry.grid(row=1,column=2,pady=10,padx=20)


pwImage = PhotoImage(file='pass.png')
pwLabel = Label(loginFrame, image=pwImage, text='Password',
compound=LEFT, font=('times new roman', 20, 'bold'),
            bg='white')
pwLabel.grid(row=2, column=1, pady=10, padx=20)
pwEntry = Entry(loginFrame, font=('times new roman', 20, 'bold'), bd=5,
fg='royalblue')
pwEntry.grid(row=2, column=2, pady=10, padx=20)
```

```
loginButton=Button(loginFrame,text='Login',font=('times new roman', 14,
'bold'),width=15,fg='white'

,bg='cornflowerblue',activebackground='cornflowerblue',activeforeground='wh
ite',cursor='hand2'
                    ,command=login)
loginButton.grid(row=3,column=2,pady=10)
window.mainloop()
```

USER PROFILE:

```
from tkinter import *
import time
import ttkthemes
from tkinter import ttk, messagebox
import mysql.connector
mydb = mysql.connector.connect(
host="localhost",
username="root",
passwd="ram9486",
database="apart"
)
if mydb.is_connected():
  print("connection established")
mycursor = mydb.cursor()

# functions

def profile():
    rightFrame = Frame(root, bg='white')
    rightFrame.place(x=350, y=80, width=1200, height=1000)
    query = "SELECT * FROM residents WHERE resident_id = %s"
    myda=(res_id,)
    mycursor.execute(query,myda)
```

```
    data = mycursor.fetchone()

    namelabel = Label(rightFrame, text="Name            : " + data[1],
font=('arial', 18), bg='white')
    namelabel.place(x=200, y=50)
    idlabel = Label(rightFrame, text="Resident id    : " + str(data[0]),
font=('arial', 18), bg='white')
    idlabel.place(x=200, y=100)
    agelabel = Label(rightFrame, text="Age              : " + str(data[3]),
font=('arial', 18), bg='white')
    agelabel.place(x=200, y=150)
    apalabel = Label(rightFrame, text="Apartment id : " + str(data[2]),
font=('arial', 18), bg='white')
    apalabel.place(x=200, y=200)
    pholabel = Label(rightFrame, text="Phone         : " + str(data[4]),
font=('arial', 18), bg='white')
    pholabel.place(x=200, y=250)


def pay():
    def setpay():
        query="update payment set bill_paid_date=current_date where
Apartment_id=%s"
        mycursor.execute(query,(data[5],))
        mydb.commit
        messagebox.showinfo('Success','Paid successful')
        pay()

    rightFrame = Frame(root, bg='white')
    rightFrame.place(x=350, y=80, width=1200, height=1000)
    mycursor.execute("select
pay_id,bill_arrived_date,bill_paid_date,total_cost,mode_of_payment,paym
ent.Apartment_id from residents,payment where
residents.Apartment_id=payment.Apartment_id and Resident_id= %s",
        (res_id,))
    data = mycursor.fetchone()
```

```
    if len(data) == 0:
        messagebox.showinfo("No Bills", "Sorry!! You don't have any bills
arrived yet!")
        return

    totlabel = Label(rightFrame, text="Bill id          : " + str(data[0]),
font=('arial', 18), bg='white')
    totlabel.place(x=200, y=100)
    pidlabel = Label(rightFrame, text="Bill Arrive Date           : " + str(data[1]),
font=('arial', 18), bg='white')
    pidlabel.place(x=200, y=150)
    aparlabel = Label(rightFrame, text="Bill Paid Date          : " + str(data[2]),
font=('arial', 18), bg='white')
    aparlabel.place(x=200, y=200)
    tcostlabel = Label(rightFrame, text="Total Cost           : " + str(data[3]),
font=('arial', 18), bg='white')
    tcostlabel.place(x=200, y=250)
    modelabel = Label(rightFrame, text="Payment Mode           : " +
str(data[4]), font=('arial', 18), bg='white')
    modelabel.place(x=200, y=300)
    aplabel = Label(rightFrame, text="Apartment_Id            : " + str(data[5]),
font=('arial', 18), bg='white')
    aplabel.place(x=200, y=350)


    if(data[2] is None):
        paycost_button = ttk.Button(rightFrame, text="PAY", command=setpay)
        paycost_button.place(x=300,y=500)



def park():
    rightFrame = Frame(root, bg='white')
    rightFrame.place(x=350, y=80, width=1200, height=1000)
    query='select * from parking_lot where Apartment_id in(select
parking_lot.Apartment_id from residents inner join parking_lot on
residents.Apartment_id=parking_lot.Apartment_id and Resident_id=%s)'
```

```
    mycursor.execute(query,(res_id,))
    data=mycursor.fetchone()

    if len(data) == 0:
        messagebox.showinfo("No Lifts", "Sorry!! Lifts not available!")
        return
    if data[1]==1:
        co='Vehicle Parked'
    else:
        co='Vehicle Not Parked'
    pidlabel = Label(rightFrame, text="Working Condition          : " +co,
font=('arial', 18), bg='white')
    pidlabel.place(x=200, y=150)
    aparlabel = Label(rightFrame, text="Parking Id         : " + str(data[0]),
font=('arial', 18), bg='white')
    aparlabel.place(x=200, y=200)
    tcostlabel = Label(rightFrame, text="Apartment id           : " + str(data[2]),
font=('arial', 18), bg='white')
    tcostlabel.place(x=200, y=250)


def lift():
    rightFrame = Frame(root, bg='white')
    rightFrame.place(x=350, y=80, width=1200, height=1000)
    query='select * from lifts where Block_id in(select Block_id from residents
inner join apartment on residents.Apartment_id=apartment.Apartment_id
and Resident_id=%s)'
    mycursor.execute(query,(res_id,))
    data = mycursor.fetchone()

    if len(data) == 0:
        messagebox.showinfo("No Lifts", "Sorry!! Lifts not available!")
        return

    totlabel = Label(rightFrame, text="Lift id          : " + str(data[0]),
font=('arial', 18), bg='white')
    totlabel.place(x=200, y=100)
```

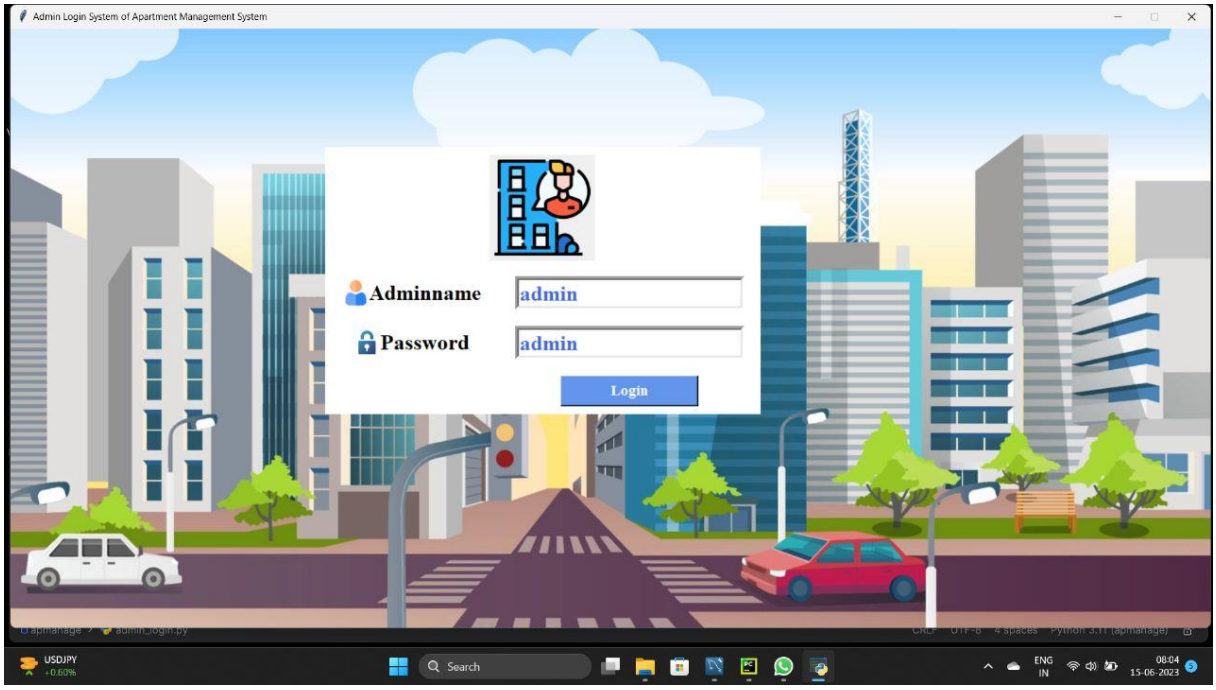
```
    if data[1]==1:
        b='Good'
    else:
        b='Under repair'
    pidlabel = Label(rightFrame, text="Working Condition          : " + b,
font=('arial', 18), bg='white')
    pidlabel.place(x=200, y=150)
    aparlabel = Label(rightFrame, text="Position          : " + str(data[2]),
font=('arial', 18), bg='white')
    aparlabel.place(x=200, y=200)
    tcostlabel = Label(rightFrame, text="Block id           : " + str(data[3]),
font=('arial', 18), bg='white')
    tcostlabel.place(x=200, y=250)


def exit():
    result = messagebox.askyesno('CONFIRM', 'DO YOU WANT TO LOG-OUT')
    if result:
        root.destroy()
        import login_page
    else:
        pass


def clock():
    date = time.strftime('%d/%m/%Y')
    currenttime = time.strftime('%H:%M:%S')
    datetimeLabel.config(text=f'   Date: {date}\nTime: {currenttime}')
    datetimeLabel.after(1000, clock)

def idd():
    def submit():
        global res_id
        res_id = res_id_entry.get()
        idwin.destroy()
    idwin = Toplevel()
    idwin.grab_set()
```

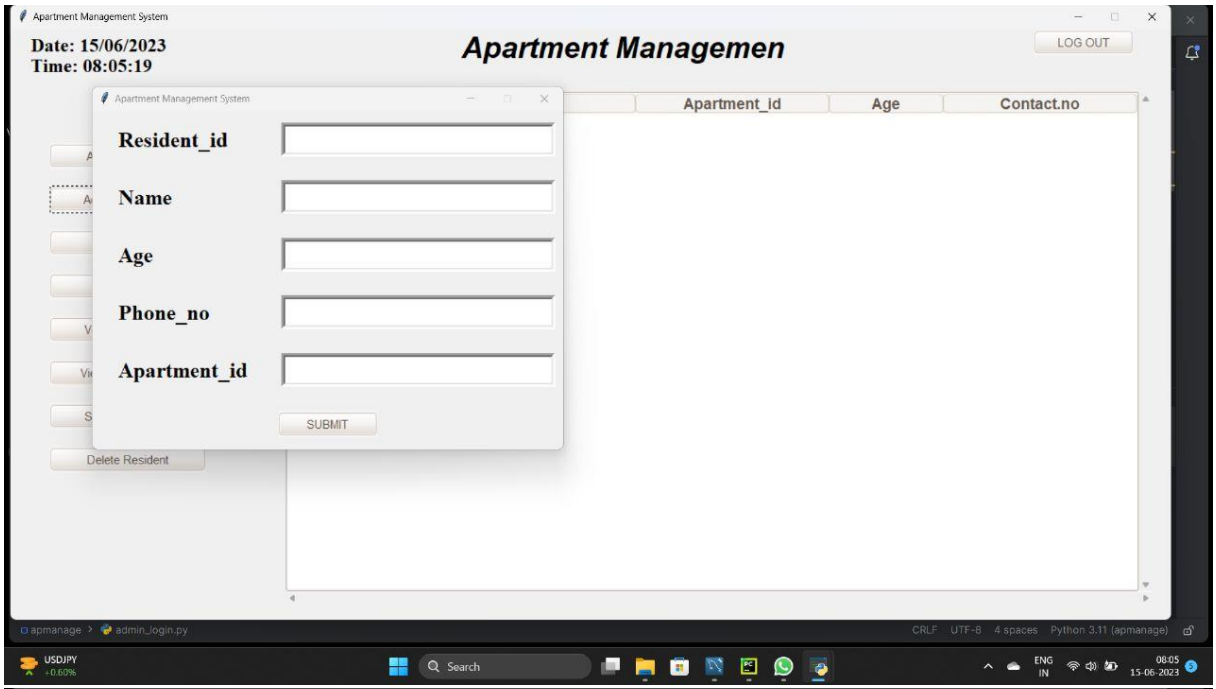
```
    idwin.resizable(False, False)
    res_id_label = Label(idwin, text="Enter the Resident id:", font=('times new
roman', 20, 'bold'))
    res_id_label.grid(row=0, column=0, padx=30, pady=15, stick=W)
    res_id_entry = Entry(idwin, font=('times new roman', 20, 'bold'), bd=5,
fg='dark orange', width=24)
    res_id_entry.grid(row=0, column=1, pady=15, padx=10)
    submit_button = ttk.Button(idwin, text="Submit", command=submit)
    submit_button.grid(row=6, columnspan=2, pady=15)


count = 0
text = ''


def slider():
    global text, count
    if count == len(a):
        count = 0
        text = ''
    text = text + a[count]  # a
    sliderLabel.config(text=text)
    count += 1
    sliderLabel.after(300, slider)

# GUI
root = ttkthemes.ThemedTk()

root.get_themes()
root.set_theme('radiance')

root.geometry('1474x750+0+0')
root.resizable(0, 0)
root.title('Apartment Management System')

datetimeLabel = Label(root, font=('times new roman', 18, 'bold'))
datetimeLabel.place(x=5, y=5)
```

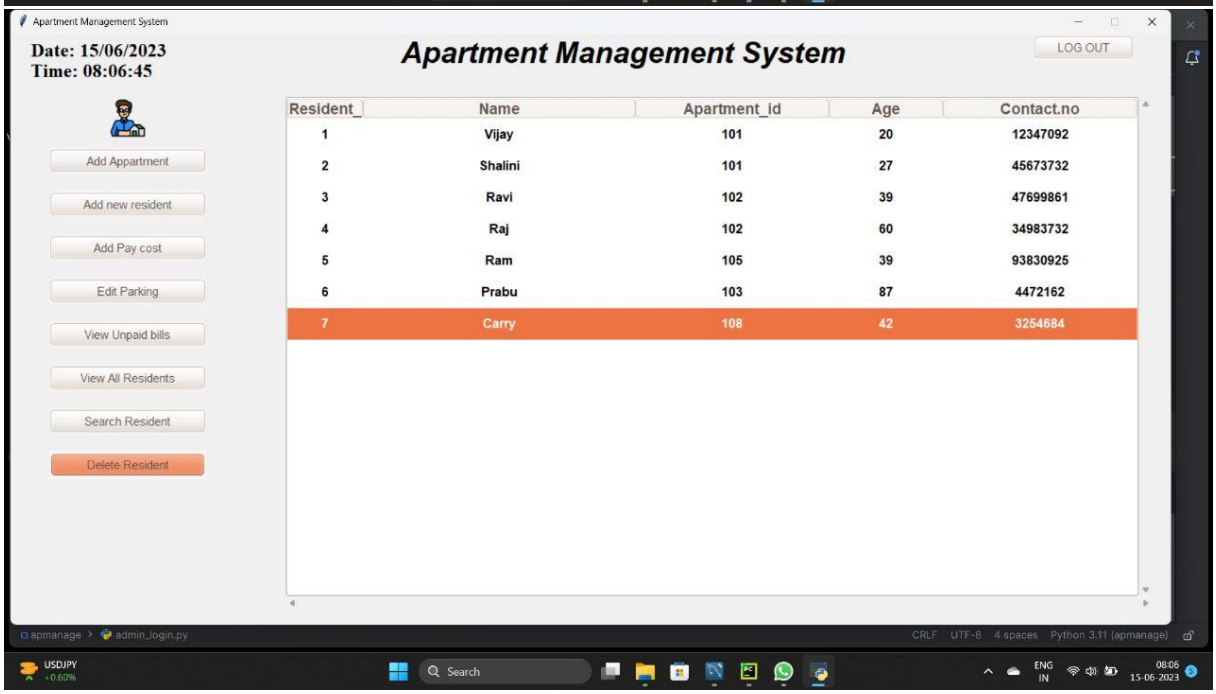
```
clock()

a = 'Apartment Management System'
sliderLabel = Label(root, text=a, font=('arial', 28, 'italic bold'), width=50)
sliderLabel.place(x=200, y=0)
slider()

connectButton = ttk.Button(root, text='LOG OUT', command=exit)
connectButton.place(x=1300, y=0)

leftFrame = Frame(root)
leftFrame.place(x=50, y=80, width=300, height=600)

logoimage = PhotoImage(file='resident.png')
logoLabel = Label(leftFrame, image=logoimage)
logoLabel.grid(row=0, column=0)

profilebutton = ttk.Button(leftFrame, text='PROFILE', cursor='hand2',
width=20,command=profile)
profilebutton.grid(row=1, column=0, pady=20)
paybutton = ttk.Button(leftFrame, text='PAYMENT', cursor='hand2',
width=20, command=pay)
paybutton.grid(row=3, column=0, pady=20)
parkbutton = ttk.Button(leftFrame, text='PARKING', cursor='hand2',
width=20, command=park)
parkbutton.grid(row=5, column=0, pady=20)
liftbutton = ttk.Button(leftFrame, text='LIFT', cursor='hand2', width=20,
command=lift)
liftbutton.grid(row=7, column=0, pady=20)
iddbutton = ttk.Button(leftFrame, text='CONNECT ID', cursor='hand2',
width=20, command=idd)
iddbutton.grid(row=8, column=0, pady=20)

rightFrame = Frame(root, bg='white')
rightFrame.place(x=350, y=80, width=1200, height=1000)
tlabel = Label(rightFrame, text="WELCOME TO RESIDENT PAGE", font=('times
new roman', 25, 'bold'), bg='white',
```

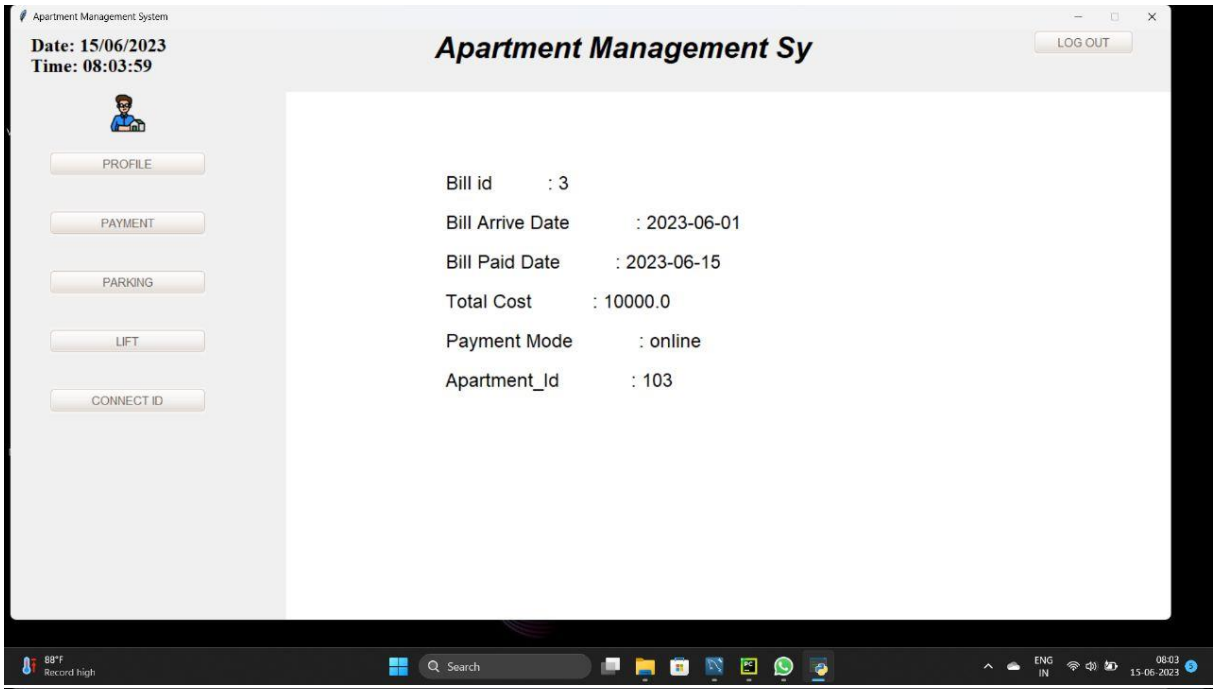
```
            fg='dark orange')
tlabel.place(x=300, y=250)
root.mainloop()
```

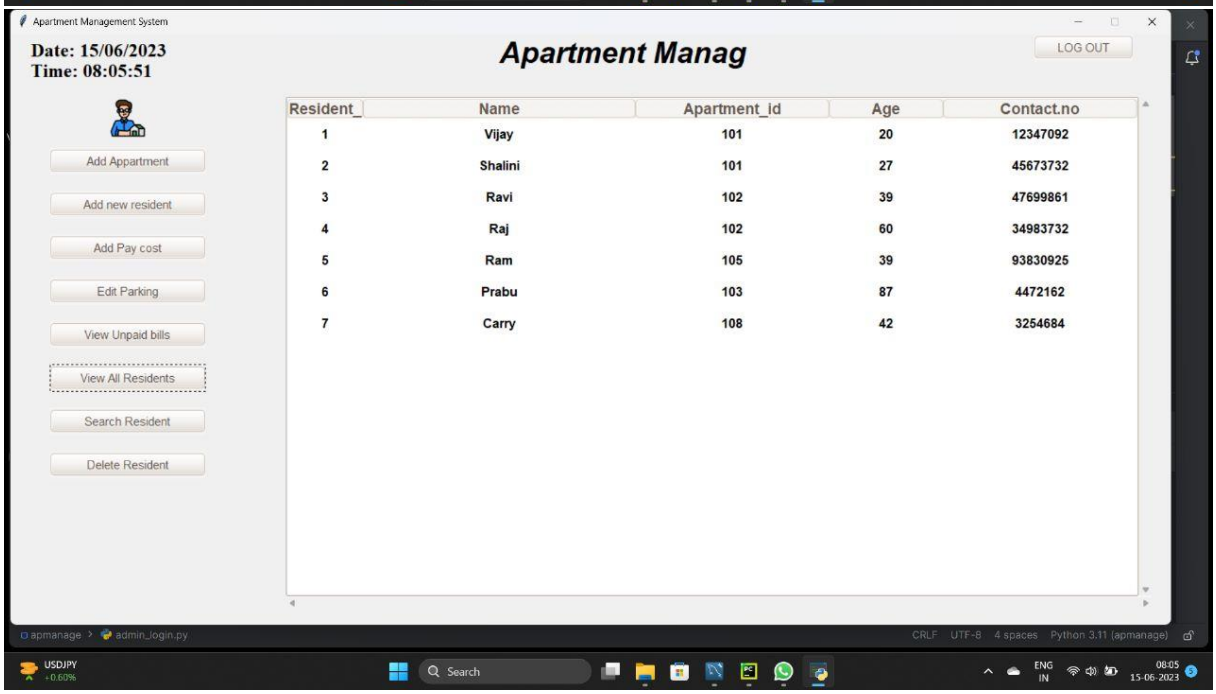
SCREENSHOTS:

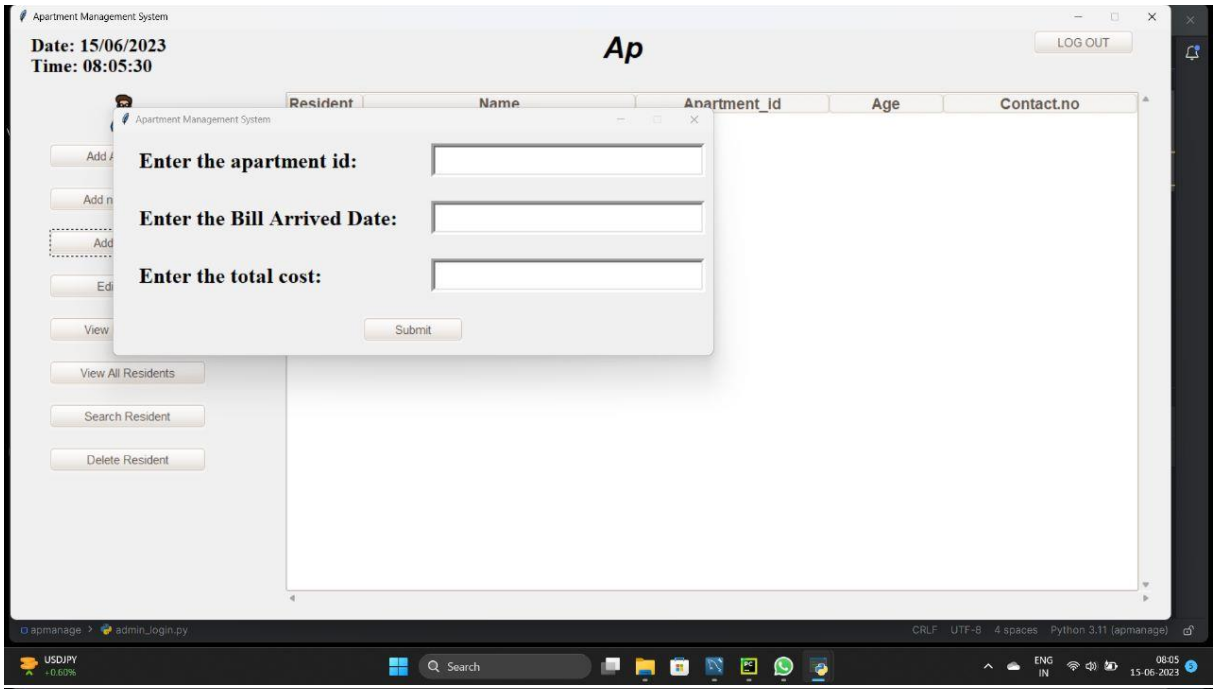


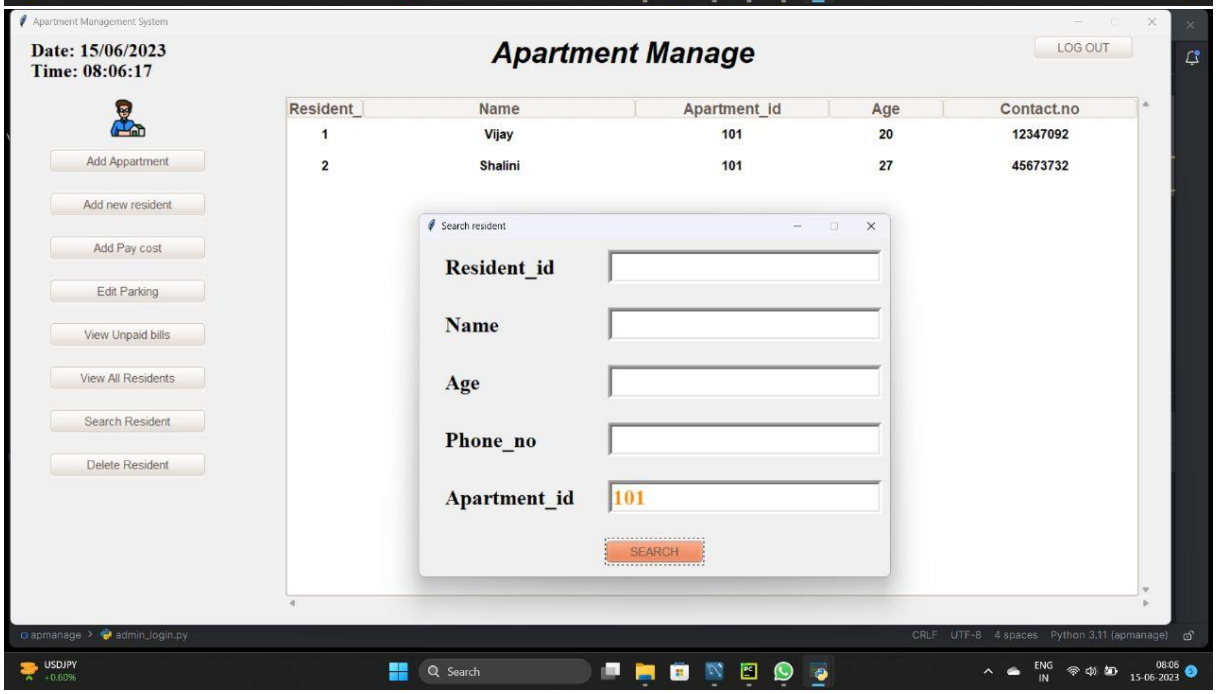

Apartment Management System
Date: 15/06/2023
Time: 08:05:19
Apartment Managemen
LOG OUT
Apartment_id
Age
Contact.no
Resident_id
Name
Age
Phone_no
Apartment_id
SUBMIT
Delete Resident

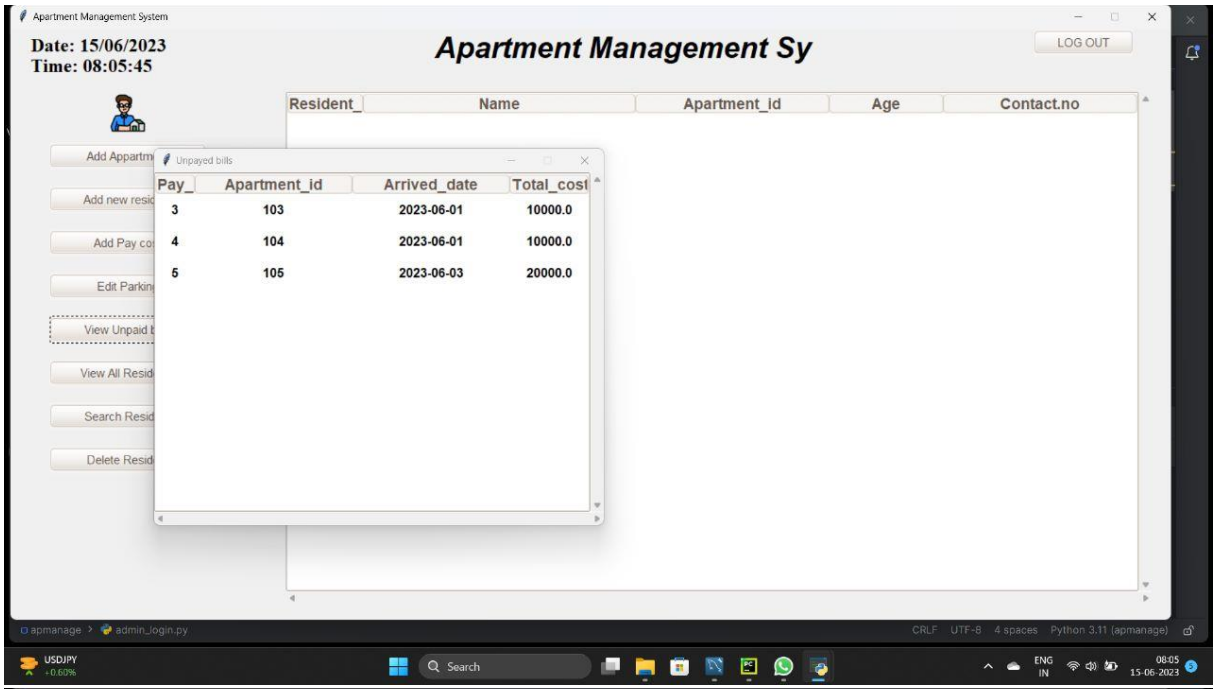

Apartment Management System
Date: 15/06/2023
Time: 08:06:45
Apartment Management System
LOG OUT
Add Appartment
Add new resident
Add Pay cost
Edit Parking
View Unpaid bills
View All Residents
Search Resident
Delete Resident
Resident_ Name Apartment_id Age Contact.no
1 Vijay 101 20 12347092
2 Shalini 101 27 45673732
3 Ravi 102 39 47699861
4 Raj 102 60 34983732
5 Ram 105 39 93830925
6 Prabu 103 87 4472162
7 Carry 108 42 3254684

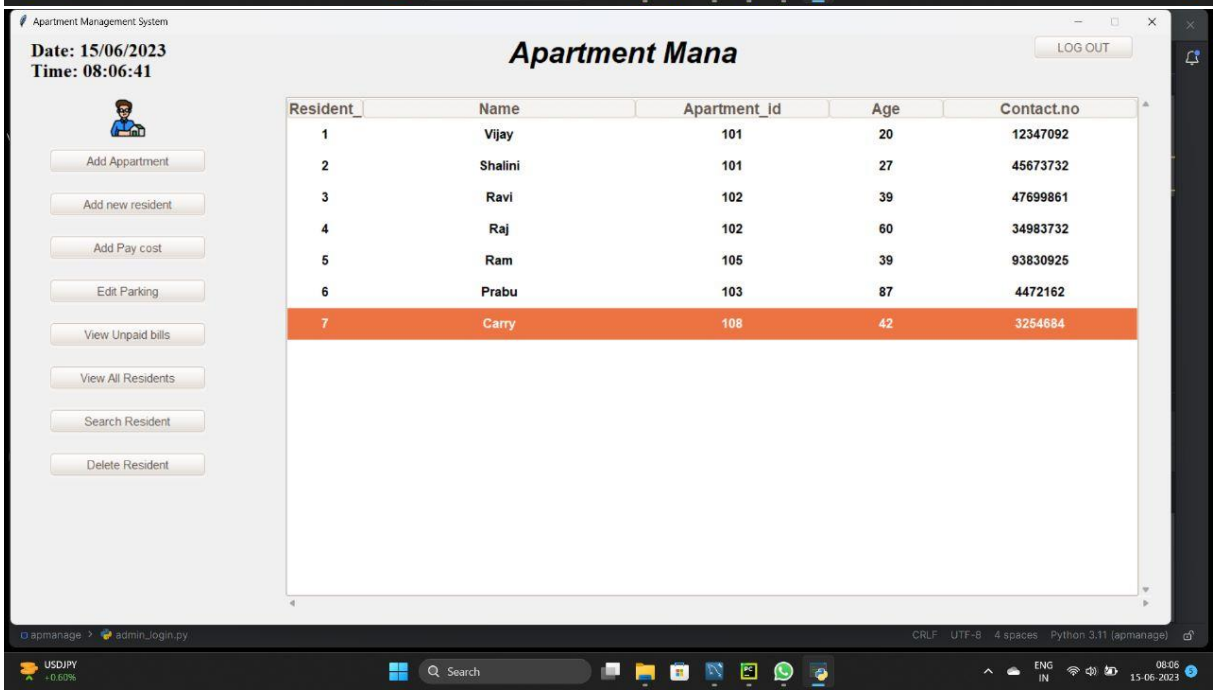

Apartment Management System
Date: 15/06/2023
Time: 08:03:59
Apartment Management Sy
LOG OUT
PROFILE
PAYMENT
PARKING
LIFT
CONNECT ID
Bill id : 3
Bill Arrive Date : 2023-06-01
Bill Paid Date : 2023-06-15
Total Cost : 10000.0
Payment Mode : online
Apartment_Id : 103

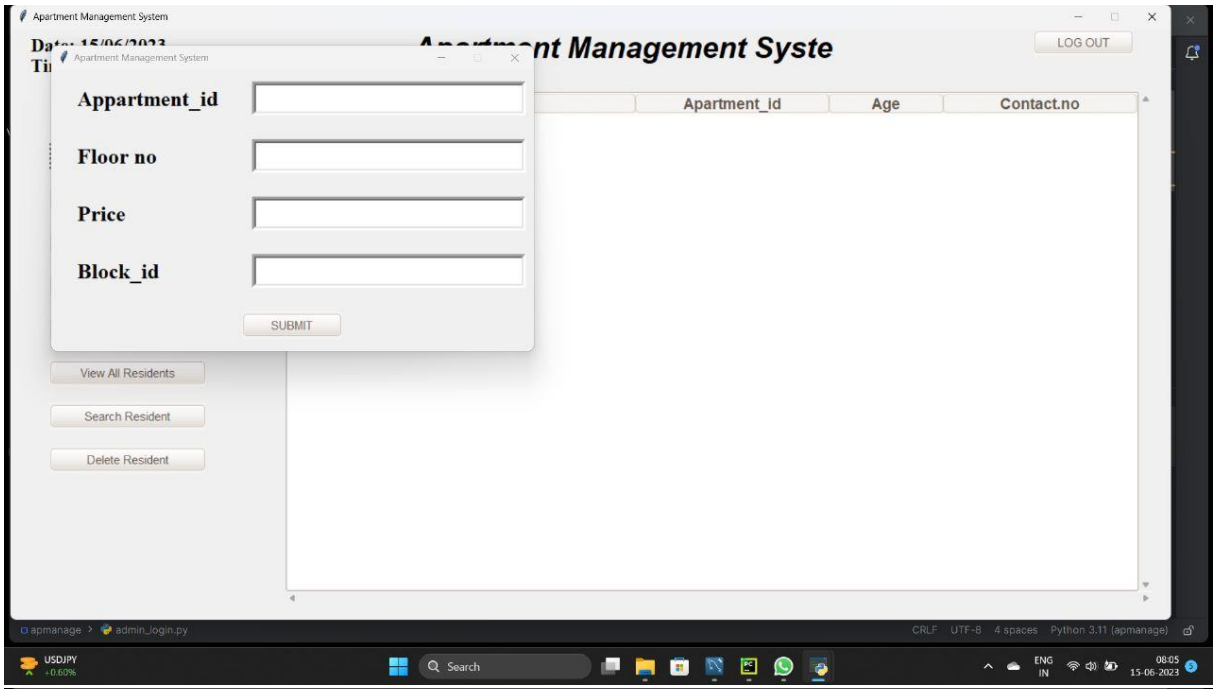

Apartment Management System
Date: 15/06/2023
Time: 08:05:51
Apartment Manag
LOG OUT
Add Appartment
Add new resident
Add Pay cost
Edit Parking
View Unpaid bills
View All Residents
Search Resident
Delete Resident
Resident_ Name Apartment_id Age Contact.no
1 Vijay 101 20 12347092
2 Shalini 101 27 45673732
3 Ravi 102 39 47699861
4 Raj 102 60 34983732
5 Ram 105 39 93830925
6 Prabu 103 87 4472162
7 Carry 108 42 3254684

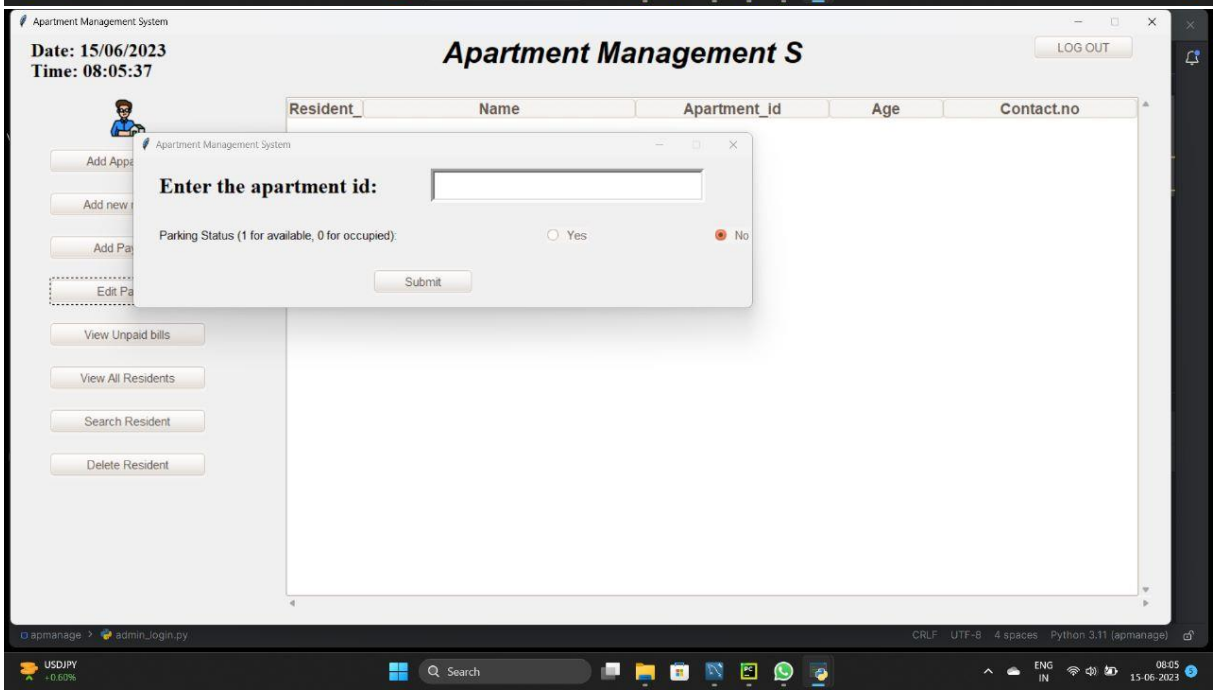

Apartment Management System
Date: 15/06/2023
Time: 08:05:30
Ap
LOG OUT
Resident
Name
Apartment_id
Age
Contact.no
Enter the apartment id:
Enter the Bill Arrived Date:
Enter the total cost:
Submit
View All Residents
Search Resident
Delete Resident

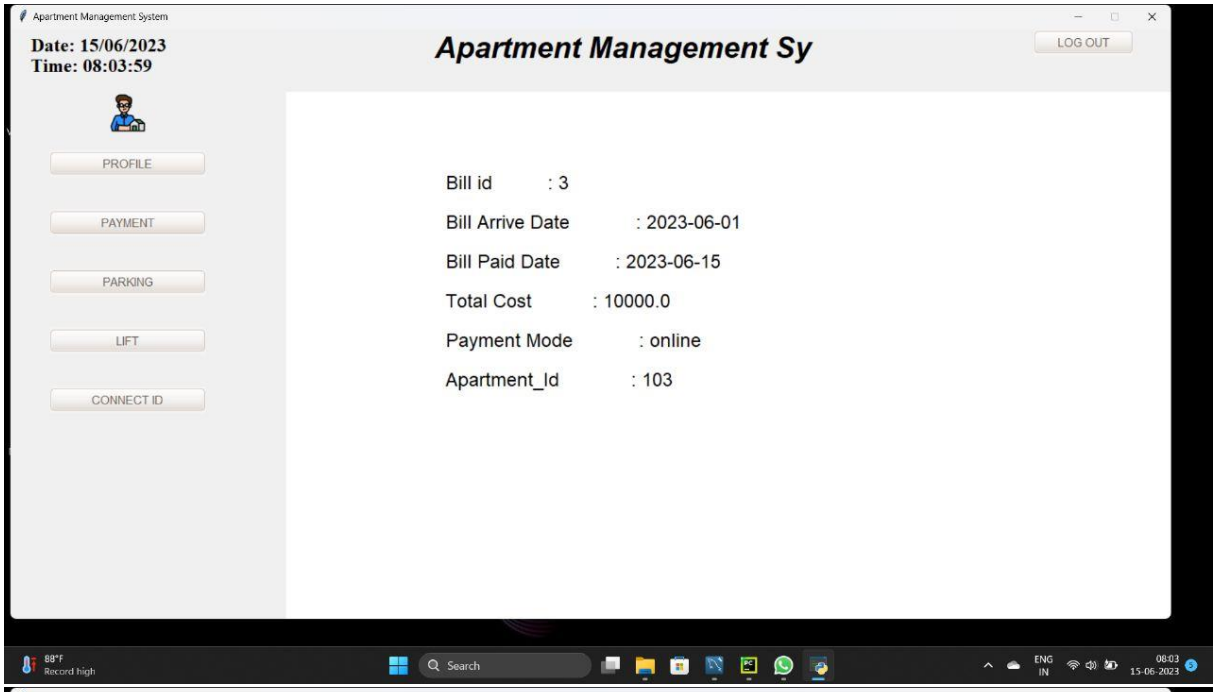

Apartment Management System
Date: 15/06/2023
Time: 08:06:17
Apartment Manage
LOG OUT
Resident_
Name
Apartment_id
Age
Contact.no
1
Vijay
101
20
12347092
2
Shalini
101
27
45673732
Add Appartment
Add new resident
Add Pay cost
Edit Parking
View Unpaid bills
View All Residents
Search Resident
Delete Resident
Search resident
Resident_id
Name
Age
Phone_no
Apartment_id
101
SEARCH

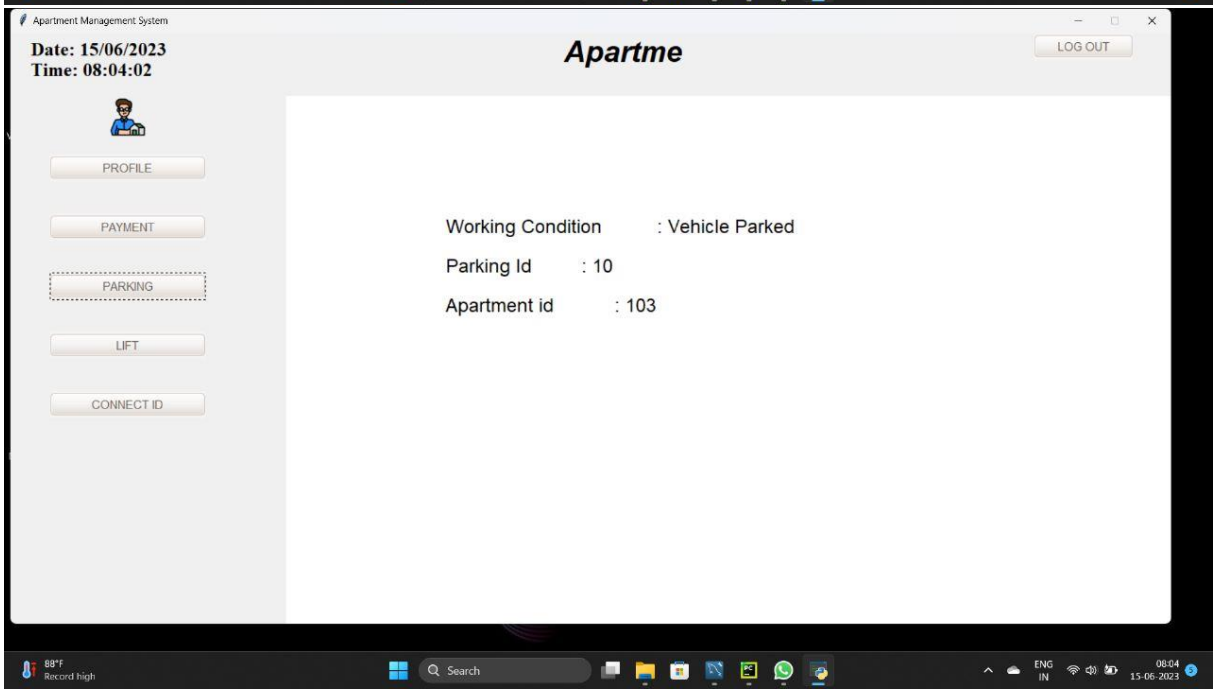

Apartment Management System
Date: 15/06/2023
Time: 08:05:45
Apartment Management Sy
LOG OUT
Resident_
Name
Apartment_id
Age
Contact.no
Unpayed bills
Pay_
Apartment_id
Arrived_date
Total_cost
3
103
2023-06-01
10000.0
4
104
2023-06-01
10000.0
5
105
2023-06-03
20000.0

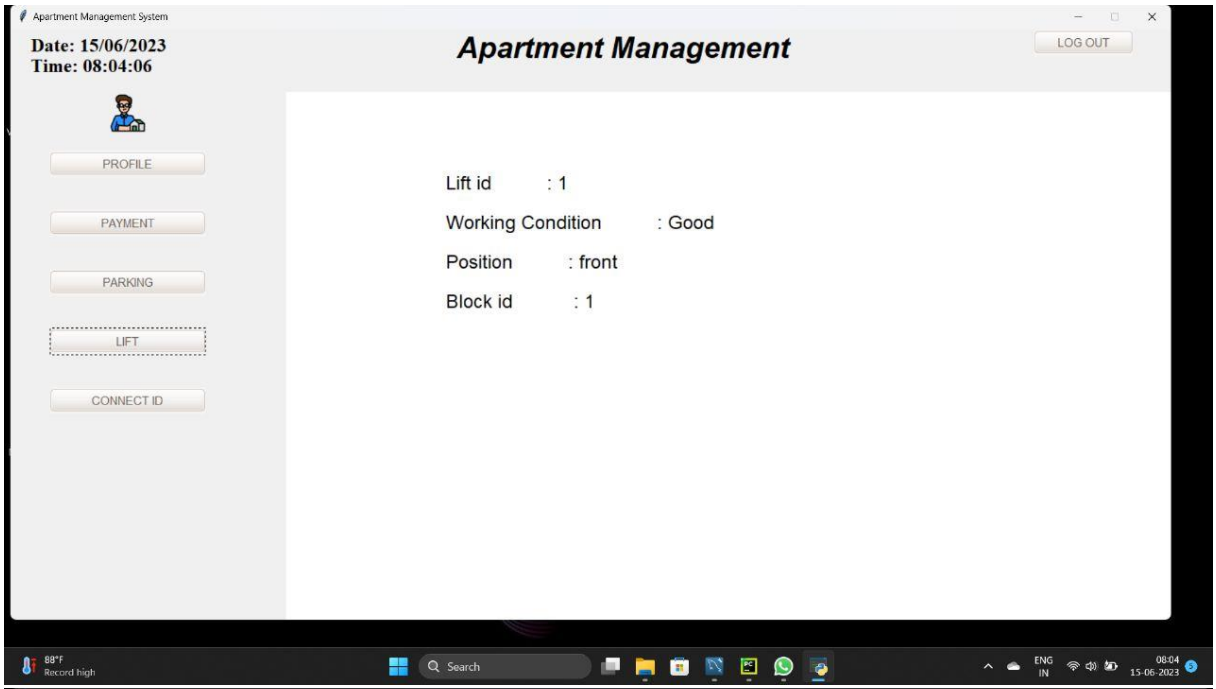

Apartment Management System
Date: 15/06/2023
Time: 08:06:41
Apartment Mana
LOG OUT
Add Appartment
Add new resident
Add Pay cost
Edit Parking
View Unpaid bills
View All Residents
Search Resident
Delete Resident
Resident_
Name
Apartment_id
Age
Contact.no
1
Vijay
101
20
12347092
2
Shalini
101
27
45673732
3
Ravi
102
39
47699861
4
Raj
102
60
34983732
5
Ram
105
39
93830925
6
Prabu
103
87
4472162
7
Carry
108
42
3254684

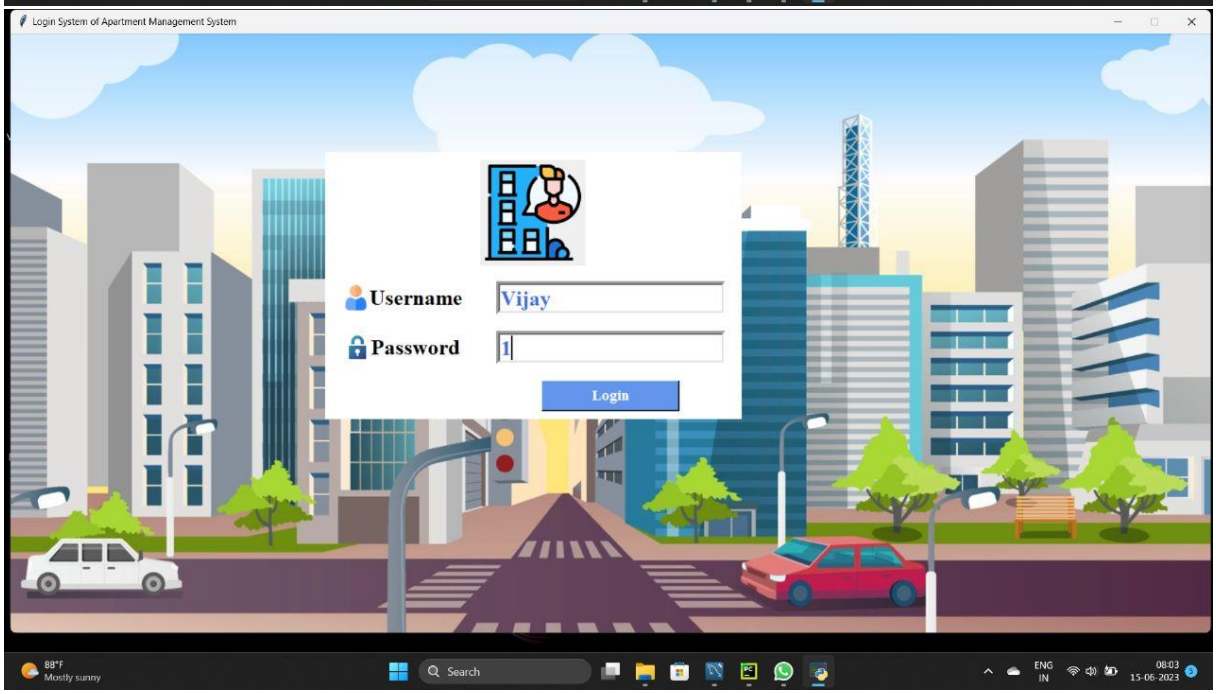

Apartment Management System
Apartment Management Syste
LOG OUT
Appartment_id
Floor no
Price
Block_id
SUBMIT
Apartment_id
Age
Contact.no
View All Residents
Search Resident
Delete Resident

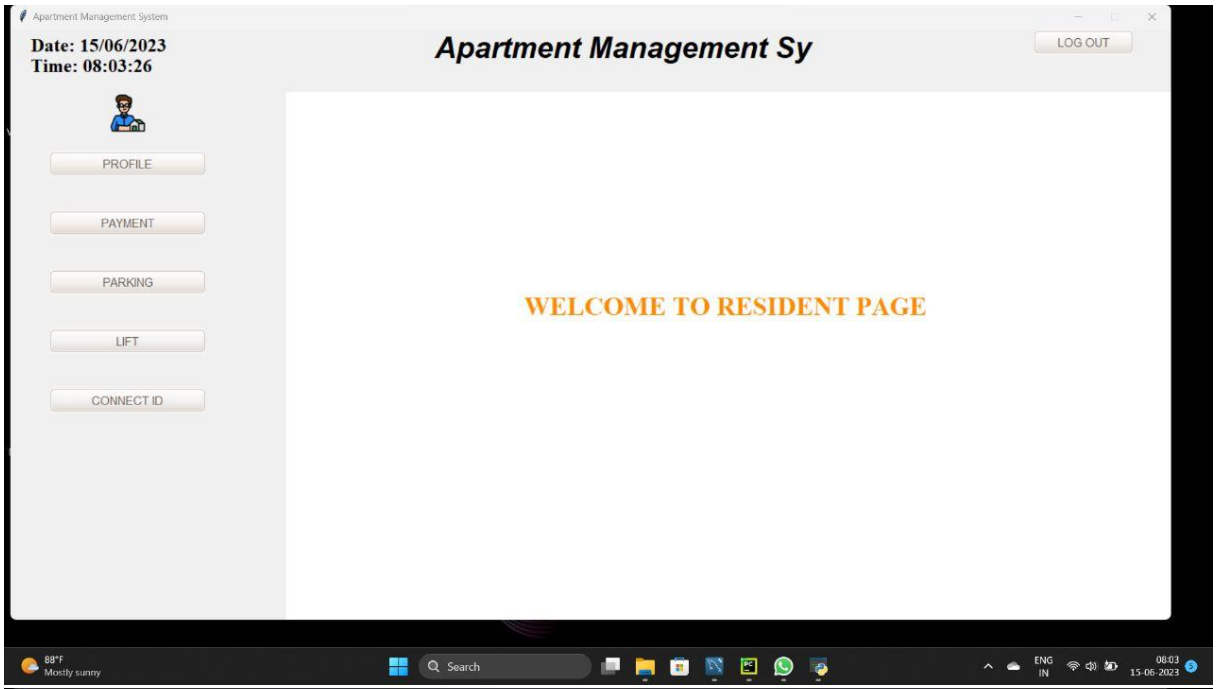

Apartment Management System
Date: 15/06/2023
Time: 08:05:37
Apartment Management S
LOG OUT
Resident_
Name
Apartment_id
Age
Contact.no
Enter the apartment id:
Parking Status (1 for available, 0 for occupied):
Yes
No
Submit
View Unpaid bills
View All Residents
Search Resident
Delete Resident

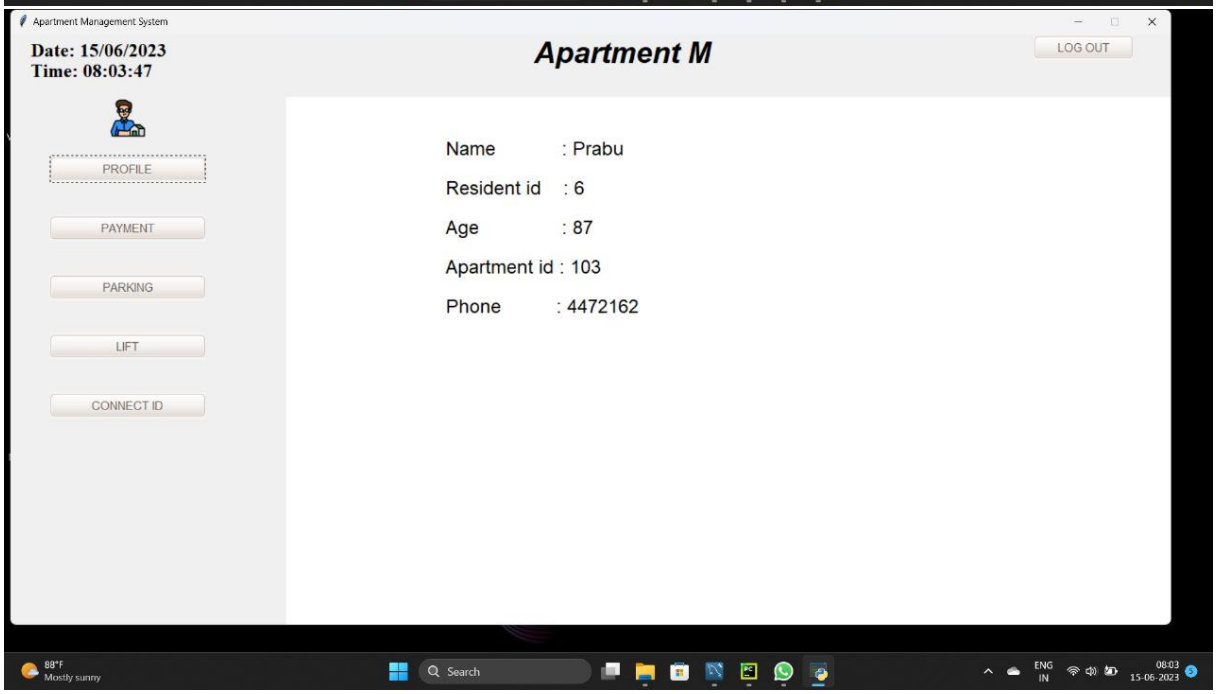

Apartment Management System
Date: 15/06/2023
Time: 08:03:59
Apartment Management Sy
LOG OUT
PROFILE
PAYMENT
PARKING
LIFT
CONNECT ID
Bill id : 3
Bill Arrive Date : 2023-06-01
Bill Paid Date : 2023-06-15
Total Cost : 10000.0
Payment Mode : online
Apartment_Id : 103

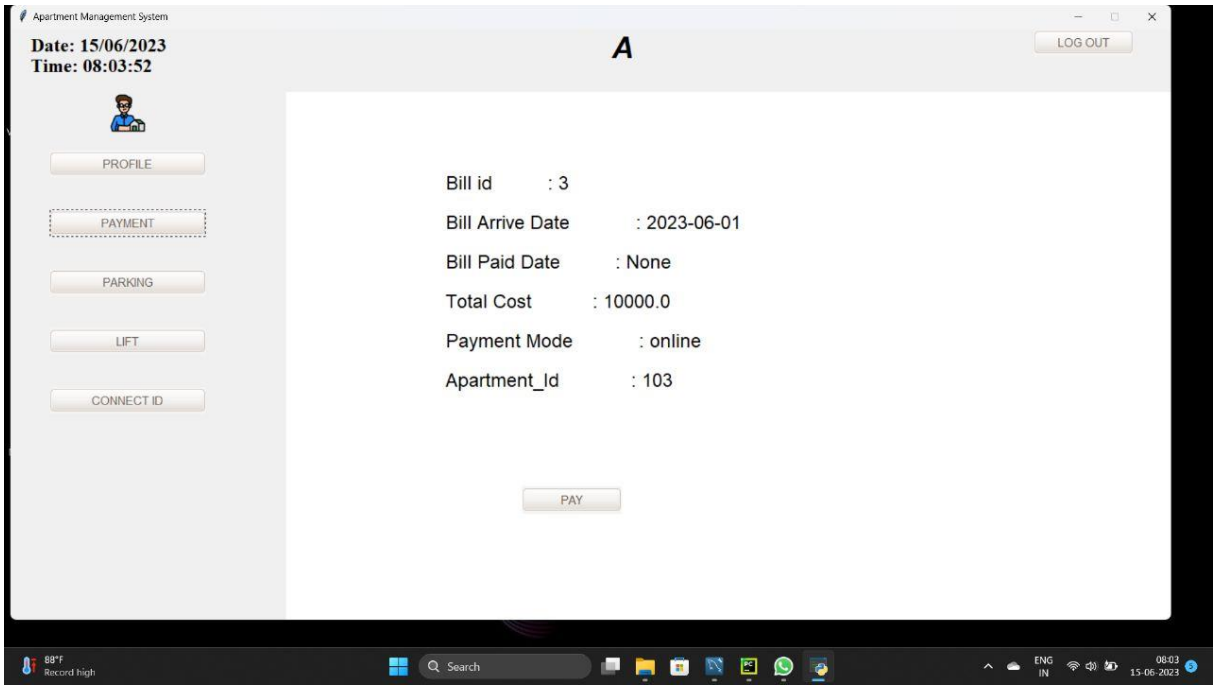

Apartment Management System
Date: 15/06/2023
Time: 08:04:02
Apartme
LOG OUT
PROFILE
PAYMENT
PARKING
LIFT
CONNECT ID
Working Condition : Vehicle Parked
Parking Id : 10
Apartment id : 103


Apartment Management System
Date: 15/06/2023
Time: 08:04:06
Apartment Management
LOG OUT
PROFILE
PAYMENT
PARKING
LIFT
CONNECT ID
Lift id : 1
Working Condition : Good
Position : front
Block id : 1


Login System of Apartment Management System
Username
Vijay
Password
1
Login


Apartment Management System
Date: 15/06/2023
Time: 08:03:26
Apartment Management Sy
LOG OUT
PROFILE
PAYMENT
PARKING
LIFT
CONNECT ID
WELCOME TO RESIDENT PAGE


Apartment Management System
Date: 15/06/2023
Time: 08:03:47
Apartment M
LOG OUT
PROFILE
PAYMENT
PARKING
LIFT
CONNECT ID
Name : Prabu
Resident id : 6
Age : 87
Apartment id : 103
Phone : 4472162



CONCLUSION:

In our project Apartment Management system, we have stored all the information about the Apartments sold and the residents buying apartments and even status of lifts, maintenance bills payment etc.

This data base is helpful for the applications which facilitate residents to view the visitors log and check the details of maintenance receipts and their status from their place itself. It avoids inconvenience of asking the management team to provide bill details.

We had considered the most important requirements only; many more features and details can be added to our project in order to obtain even more userfriendly applications.

These applications are already in progress and in future they can be upgraded and may become part of amazing technology.

REFERENCES:

SQL INNER JOIN:

https://www.mysqltutorial.org/mysql-inner-join.aspx

SQL SELECT:

https://www.mysqltutorial.org/mysql-select-statement-query-data.aspx

SQL UPDATE:

https://www.mysqltutorial.org/mysql-update-data.aspx

SQL INSERT:

https://www.mysqltutorial.org/mysql-insert-statement.aspx