HOSPITAL MANAGEMENT SYSTEM

DATABASE MANAGEMENT SYSTEM (CS19443)



• • • ABSTRACT

Project Focus:

This project aims to develop a user-friendly, secure, and efficient hospital management system using Python for front end development and MySQL as the relational database management system.

Benefits:

- Improved Efficiency: Streamline administrative tasks (appointments, billing, record management) to save time and resources.
- Enhanced Data Management: Organize and centralize hospital data for easier access, analysis, and decision-making.
- Increased Accuracy: Reduce errors by automating data entry and validation.
- Improved Patient Care: Facilitate better communication between healthcare professionals and patients.
- Scalability: The system can grow and adapt as the hospital's needs evolve.

PROJECT SCOPE

01. Patient Registration **02.** List of doctors

03. Services available

04. Appointment scheduling and management. **05.** Modifying existing data



SOFTWARE REQUIREMENTS

Front-End: The system will utilize a user-friendly interface developed with a popular programming language like python

User Interface Design:

- Emphasis on User Experience:

 Design a visually appealing and userfriendly interface
- **Data Input Forms:** Create forms with appropriate input fields
- Data Interaction Features
 - User Registration
 - Login
 - Data Entry
 - Data Editing
 - Data Deletion
 - Search and Filtering

Database Connectivity

- **Libraries:** Utilize libraries like MySQL dB for MySQL
- . Data Transfer:

Sending Data: When users interact with the interface (adding information, searching), the front-end will use the chosen library to send data manipulation requests (INSERT, UPDATE, DELETE) or queries (SELECT) to the back-end DBMS.

Receiving Data: The back-end will process the requests and send back the requested information or confirmation of successful operations. The front-end will then display the retrieved data or confirmation messages to the user.

Back-End: Data will be stored and managed in a secure database such as MySQL. It offers good performance, scalability, and a large user community for support.

Implementation with MySQL:

- **MySQL Server:** A MySQL server to act as the back-end database storage.
- Database Creation: Use tools like
 MySQL Workbench or command-line
 tools to create the database based on
 your designed schema.
- **Table Creation:** Define tables within the database, specifying data types for each attribute.
- Data Manipulation: Develop functionalities to insert, update, and delete data within the tables using Structured Query Language (SQL).

ENTITIES

PATIENT

Attributes: PatientID, Name, Age Gender, Phone, Address, Bloodgroup

APPOINTMENT

Attributes: AppointmentID PatientID, DoctorID Date Time

ROOM

Attributes: RoomNumber DepartmentID OccupancyStatus

DOCTOR

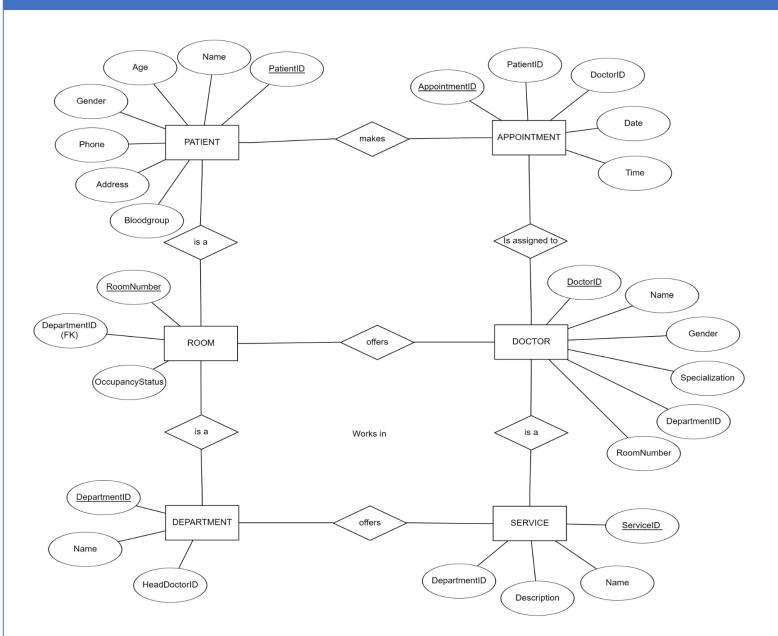
Attributes: DoctorID, Name Gender, Specialization DepartmentID,RoomNumber

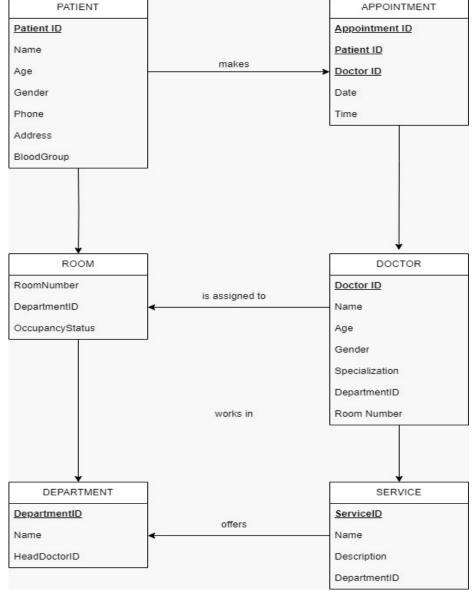
DEPARTMENT

Attributes: DepartmentID, Name Attributes: ServiceID, Name HeadDoctorID

SERVICE

ENTITY RELATIONSHIP DIAGRAM





CODE

```
import tkinter.messagebox
from tkinter import *
import mysgl.connector as sglcon
import random as rd
con=sqlcon.connect(host="127.0.0.1",user="root",password="root")#co
nnection to mysql
cur = con.cursor(buffered=True)
if (cur):
  # Carry out normal procedure
  print ("Connection successful")
else:
  print ("Connection unsuccessful")
cur.execute("create database if not exists Hospital")
cur.execute("use Hospital")
cur.execute("create table if not exists appointment"
       "idno varchar(12) primary key,"
       "name char(50),"
       "age char(3),"
       "gender char(1),"
       "phone varchar(10),"
       "bg varchar(3))")
cur.execute("create table if not exists appointment details"
       "idno varchar(12) primary key,"
```

```
"doctor varchar(50),"
      "date varchar(20),"
      "time varchar(20),"
      "appointment_no varchar(10))")
# Message for registration
def entry():
  global e1,e2,e3,e4,e5,e6
  p1=e1.get()
  p2=e2.get()
  p3=e3.get()
  p4=e4.get()
  p5=e5.get()
  p6=e6.get()
  query='insert into appointment values("{}", "{}", "{}", "{}", "{}",
"{}")'.format(p1,p2,p3,p4,p5,p6)
  con.commit()
  cur.execute(query)
  tkinter.messagebox.showinfo("DONE", "YOU HAVE BEEN REGISTERED")
# For registration
def register():
  global e1,e2,e3,e4,e5,e6
  root1=Tk()
  label=Label(root1,text="REGISTER YOURSELF",font='arial 25 bold')
  label.pack()
  frame=Frame(root1,height=500,width=200)
```

```
frame.pack()
 l1=Label(root1,text="AADHAR CARD NO.")
 11.place(x=10,y=130)
 e1=tkinter.Entry(root1)
 e1.place(x=100,y=130)
 l2=Label(root1,text="NAME")
 12.place(x=10,y=170)
 e2=tkinter.Entry(root1)
 e2.place(x=100,y=170)
 13=Label(root1,text="AGE")
 13.place(x=10,y=210)
 e3=tkinter.Entry(root1)
 e3.place(x=100,y=210)
 l4=Label(root1,text="GENDER M\F")
 14.place(x=10,y=250)
 e4=tkinter.Entry(root1)
 e4.place(x=100,y=250)
 I5=Label(root1,text="PHONE")
 15.place(x=10,y=290)
 e5=tkinter.Entry(root1)
 e5.place(x=100,y=290)
 l6=Label(root1,text="BLOOD GROUP")
 16.place(x=10,y=330)
 e6=tkinter.Entry(root1)
 e6.place(x=100,y=330)
```

```
b1=Button(root1,text="SUBMIT",command=entry)
  b1.place(x=150,y=370)
  root.resizable(False,False)
  root1.mainloop()
# Message for appointment
def apo details():
  global x1,x2,h,p1,p2,p3,o,x4,x3
  p1=x2.get()
  p2=x3.get()
  p3=x4.get()
  if int(p1)==1:
    i=("Dr. sharma \nRoom no:- 10")
    j=("Dr. Verma \nRoom no:- 11")
    q=(i,j)
    h=rd.choice(q)
    u=(23,34,12,67,53,72)
    o=rd.choice(u)
    det = (
    "Your appointment is fixed with: {}\n"
    "Date: {}\n"
    "Time: {}\n"
    "Appointment no: {}"
```

```
).format(h, p2, p3, o)
    query='insert into appointment_details values("{}", "{}", "{}", "{}",
"{}")'.format(p1,h,p2,p3,o)
    cur.execute(query)
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
  elif int(p1)==2:
    i=("Dr. Sidharth \nRoom no. 16")
    j=("Dr. Tendulkar \nRoom no. 17")
    q=(i,j)
    h=rd.choice(q)
    u=(23,34,12,67,53,72)
    o=rd.choice(u)
    det = (
    "Your appointment is fixed with: {}\n"
    "Date: {}\n"
    "Time: {}\n"
    "Appointment no: {}"
     ).format(h, p2, p3, o)
    query='insert into appointment_details values("{}", "{}", "{}", "{}",
"{}")'.format(p1,h,p2,p3,o)
    cur.execute(query)
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
  elif int(p1)==3:
    i=("Dr. Kumar \nRoom no. 12")
    j=("Dr. Khan \nRoom no. 13")
```

```
q=(i,j)
    h=rd.choice(q)
    u=(23,34,12,67,53,72)
    o=rd.choice(u)
    det = (
    "Your appointment is fixed with: {}\n"
    "Date: {}\n"
    "Time: {}\n"
    "Appointment no: {}"
     ).format(h, p2, p3, o)
    query='insert into appointment_details values("{}", "{}", "{}", "{}",
"{}")'.format(p1,h,p2,p3,o)
    cur.execute(query)
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
  elif int(p1)==4:
    i=("Dr. Virat, \nRoom no. 18")
    j=("Dr. Leo \nRoom no. 19")
    q=(i,j)
    h=rd.choice(q)
    u=(23,34,12,67,53,72)
    o=rd.choice(u)
    det = (
    "Your appointment is fixed with: {}\n"
    "Date: {}\n"
    "Time: {}\n"
    "Appointment no: {}"
```

```
).format(h, p2, p3, o)
    query='insert into appointment_details values("{}", "{}", "{}", "{}",
"{}")'.format(p1,h,p2,p3,o)
    cur.execute(query)
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
  elif int(p1)==5:
    i=("Dr. Kohli \nRoom no. 14")
    j=("Dr. singh \nRoom no. 15")
    q=(i,j)
    h=rd.choice(q)
    u=(23,34,12,67,53,72)
    o=rd.choice(u)
    det = (
    "Your appointment is fixed with: {}\n"
    "Date: {}\n"
    "Time: {}\n"
    "Appointment no: {}"
     ).format(h, p2, p3, o)
    query='insert into appointment_details values("{}", "{}", "{}", "{}",
"{}")'.format(p1,h,p2,p3,o)
    cur.execute(query)
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
  elif int(p1)==6:
    i=("Dr. Irfan \nRoom no. 001")
    j=("Dr. John \nRoom no. 002")
    k=("Dr. Sanjay \nRoom no. 003")
    I=("Dr. Shahid \nRoom no. 004")
```

```
q=(i,j,k,l)
    h=rd.choice(q)
    u=(23,34,12,67,53,72)
    o=rd.choice(u)
    det = (
    "Your appointment is fixed with: {}\n"
    "Date: {}\n"
    "Time: {}\n"
    "Appointment no: {}"
    ).format(h, p2, p3, o)
    query='insert into appointment_details values("{}", "{}", "{}", "{}",
"{}")'.format(p1,h,p2,p3,o)
    cur.execute(query)
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
  else:
    tkinter.messagebox.showwarning('WRONG INPUT','PLEASE ENTER VALID
VALUE')
# For appointment
def get apoint():
  global x1,x2,x3,x4
  p1=x1.get()
  cur.execute('select * from appointment where idno=(%s)',(p1,))
  dat=cur.fetchall()
  a=[]
  for i in dat:
    a.append(i)
```

```
if len(a) == 0:
   tkinter.messagebox.showwarning("ERROR", "NO DATA FOUND!!")
 else:
   root3=Tk()
   label=Label(root3,text="APPOINTMENT",font='arial 25 bold')
   label.pack()
   frame=Frame(root3,height=500,width=300)
   frame.pack()
   if i[3]=='M' or i[3]=='m':
       x="Mr."
       name2=Label(root3,text=i[1])
       name2.place(x=140,y=80)
   else:
       x="Mrs\Ms."
       name2=Label(root3,text=i[1])
       name2.place(x=170,y=80)
   for i in dat:
     name=Label(root3,text='WELCOME')
     name.place(x=50,y=80)
     name1=Label(root3,text=x)
     name1.place(x=120,y=80)
     age=Label(root3,text='AGE:-')
     age.place(x=50,y=100)
     age1=Label(root3,text=i[2])
     age1.place(x=100,y=100)
```

```
phone=Label(root3,text='PHONE:-')
      phone.place(x=50,y=120)
      phone1=Label(root3,text=i[4])
      phone1.place(x=100,y=120)
      bg=Label(root3,text='BLOOD GROUP:-')
      bg.place(x=50,y=140)
      bg1=Label(root3,text=i[5])
      bg1.place(x=150,y=140)
   L=Label(root3,text='DEPARTMENTS')
   L.place(x=50,y=220)
   L1=Label(root3,text="1.Orthopaedic surgeon ")
   L1.place(x=50,y=250)
   L2=Label(root3,text='2.Physician')
   L2.place(x=50,y=270)
   L3=Label(root3,text='3.Nephrologist')
   L3.place(x=50,y=290)
   L4=Label(root3,text='4.Neurologist')
   L4.place(x=50,y=310)
   L5=Label(root3,text='5.Gynaecologist')
   L5.place(x=50,y=330)
   L6=Label(root3,text='6.X-ray')
   L6.place(x=50,y=350)
   L7=Label(root3,text='Enter your choice')
   L7.place(x=100,y=370)
   x2=tkinter.Entry(root3)
```

```
x2.place(x=200,y=370)
    L7=Label(root3,text=('enter date')).place(x=100,y=400)
    x3=tkinter.Entry(root3)
    x3.place(x=200,y=400)
    L8=Label(root3,text=('enter time in 24 hour format')).place(x=48,y=430
    x4=tkinter.Entry(root3)
    x4.place(x=200,v=430)
    B1=Button(root3,text='Submit',command=apo details)
    B1.place(x=120,y=480)
    root3.resizable(False,False)
    root3.mainloop()
# For AADHAAR
def apoint():
  global x1
  root2=Tk()
  label=Label(root2,text="APPOINTMENT",font='arial 25 bold')
  label.pack()
  frame=Frame(root2,height=200,width=200)
  frame.pack()
  l1=Label(root2,text="AADHAAR NO.")
  11.place(x=10,y=130)
x1=tkinter.Entry(root2)
  x1.place(x=100,y=130)
```

```
b1=Button(root2,text='Submit',command=get apoint)
  b1.place(x=100,y=160)
  root2.resizable(False,False)
  root2.mainloop()
# List of doctors
def lst doc():
  root4=Tk()
  I=["Dr. sharma","Dr. Verma","Dr. Kumar","Dr. Khan","Dr. Kohli","Dr. singh","Dr
Sidharth","Dr. tendulkar","Dr. Virat","Dr. Leo",'Dr. Irfan','Dr. John',
    'Dr. Sanjay', 'Dr. Shahid']
  m=["Orthopaedic surgeon","Orthopaedic
surgeon", "Nephrologist", "Nephrologist", "Gynaecologist", "Gynaecologist", "Phys
cian", "Physician", "Neurologist",
    "Neurologist",'X-ray','X-ray','X-ray']
  n=[10,11,12,13,14,15,16,17,18,19,20,21,22,23]
  frame=Frame(root4,height=500,width=500)
  frame.pack()
  l1=Label(root4,text='NAME OF DOCTORS')
  11.place(x=20,y=10)
  count=20
  for i in I:
    count=count+20
   l=Label(root4,text=i)
```

```
I.place(x=20,y=count)
  12=Label(root4,text='DEPARTMENT')
  12.place(x=140,y=10)
  count1=20
  for i in m:
   count1=count1+20
   13=Label(root4,text=i)
   |3.place(x=140,y=count1)|
  l4=Label(root4,text='ROOM NO')
  14.place(x=260,y=10)
  count2=20
  for i in n:
   count2=count2+20
   I5=Label(root4,text=i)
   15.place(x=260,y=count2)
  root.resizable(False,False)
  root4.mainloop()
def ser avail():
  root5=Tk()
  frame=Frame(root5,height=500,width=500)
  frame.pack()
  l1=Label(root5,text='SERVICES AVAILABLE')
  11.place(x=20,y=10)
  f=["ULTRASOUND","X-RAY","CT Scan","MRI","BLOOD
COLLECTION", "DIALYSIS", "ECG", "CHEMIST", "LAB"]
```

```
count1=20
  for i in f:
    count1=count1+20
    13=Label(root5,text=i)
   l3.place(x=20,y=count1)
  l2=Label(root5,text='ROOM NO.')
  12.place(x=140,y=10)
  g=[1,2,3,4,5,6,7,8,9]
  count2=20
  for i in g:
   count2=count2+20
   l4=Label(root5,text=i)
   |4.place(x=140,y=count2)|
  I5=Label(root5,text='To avail any of these please contact on our no.:- 94887-
43479')
  15.place(x=20,y=240)
  root5.resizable(False,False)
  root5.mainloop()
def modify():
  global x3,x4,choice,new,x5,root6
  p1=x3.get()
  cur.execute('select * from appointment where idno=(%s)',(p1,))
  dat=cur.fetchall()
  a=[]
```

```
for i in dat:
    a.append(i)
  if len(a) == 0:
    tkinter.messagebox.showwarning("ERROR", "NO DATA FOUND!!")
  else:
   root6=Tk()
   frame=Frame(root6,height=500,width=500)
   frame.pack()
   I1=Label(root6,text='DATA MODIFICATION',font="arial 15 bold")
   11.place(x=75,y=10)
   12=Label(root6,text='WHAT YOU WANT TO CHANGE')
   12.place(x=50,y=200)
   l3=Label(root6,text='1.NAME')
   13.place(x=50,y=220)
   I4=Label(root6,text='2.AGE')
   14.place(x=50,y=240)
   I5=Label(root6,text='3.GENDER')
   15.place(x=50,y=260)
   | I6=Label(root6,text='4.PHONE')
   16.place(x=50,y=280)
   17=Label(root6,text='5.BLOOD GROUP')
   17.place(x=50,y=300)
   x2=Label(root6,text='Enter')
   x2.place(x=50,y=330)
   x4=tkinter.Entry(root6)
```

```
choice=x4.get()
  x4.place(x=100,y=330)
  for i in dat:
      name=Label(root6,text='NAME:-')
      name.place(x=50,y=80)
      name1=Label(root6,text=i[1])
      name1.place(x=150,y=80)
      age=Label(root6,text='AGE:-')
      age.place(x=50,y=100)
      age1=Label(root6,text=i[2])
      age1.place(x=150,y=100)
      gen=Label(root6,text='GENDER:-')
      gen.place(x=50,y=120)
      gen1=Label(root6,text=i[3])
      gen1.place(x=150,y=120)
      pho=Label(root6,text='PHONE:-')
      pho.place(x=50,y=140)
      pho1=Label(root6,text=i[4])
      pho1.place(x=150,y=140)
      bg=Label(root6,text='BLOOD GROUP:-')
      bg.place(x=50,y=160)
      bg1=Label(root6,text=i[5])
      bg1.place(x=150,y=160)
   b=Button(root6,text='Submit',command=do modify)
  b.place(x=50,y=400)
```

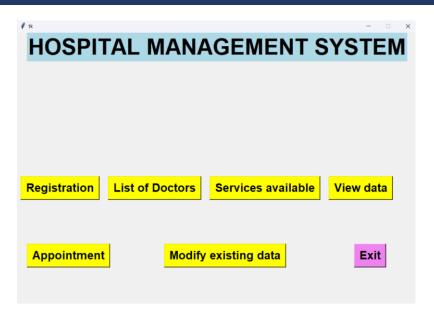
```
L1=Label(root6,text='OLD DETAILS')
   L1.place(x=50,y=50)
   L2=Label(root6,text='ENTER NEW DETAIL')
   L2.place(x=50,y=360)
   x5=tkinter.Entry(root6)
   new=x5.get()
   x5.place(x=160,y=360)
   root6.resizable(False,False)
   root6.mainloop()
def do modify():
  global ad,x3,x4,x5
  ad=x3.get()
  choice=x4.get()
  new=x5.get()
  if choice=='1':
    cur.execute('update appointment set name="{}" where
idno="{}"'.format(new,ad))
  elif choice=='2':
    cur.execute('update appointment set age="{}" where
idno="{}"'.format(new,ad))
  elif choice=='3':
    cur.execute('update appointment set gender="{}" where
idno="{}"'.format(new,ad))
  elif choice=='4':
    cur.execute('update appointment set phone="{}" where
idno="{}"'.format(new,ad))
  elif choice=='5':
    cur.execute('update appointment set bg="{}" where
idno="{}"'.format(new,ad))
```

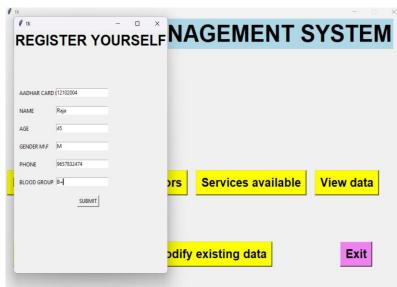
```
else:
    pass
  root6.destroy()
  tkinter.messagebox.showinfo("DONE", "YOUR DATA HAS BEEN MODIFIED")
choice=None
new=None
ad=None
def mod sub():
  global x3,ad
  root7=Tk()
  label=Label(root7,text="MODIFICATION",font='arial 25 bold')
  label.pack()
  frame=Frame(root7,height=200,width=200)
  frame.pack()
  I1=Label(root7,text="AADHAAR NO.")
  11.place(x=10,y=130)
  x3=tkinter.Entry(root7)
  x3.place(x=100,y=130)
  ad=x3.get()
  b1=Button(root7,text='Submit',command=modify)
  b1.place(x=100,y=160)
  root7.resizable(False,False)
  root7.mainloop()
def search data():
  global x3,ad
  root7=Tk()
  label=Label(root7,text="SEARCH DATA",font='arial 25 bold')
  label.pack()
```

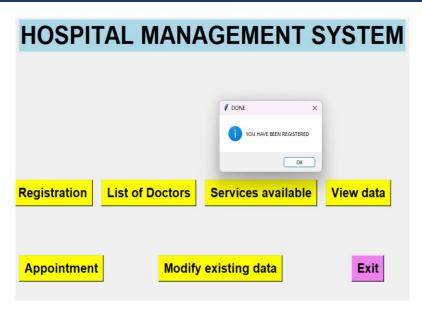
```
frame=Frame(root7,height=200,width=200)
  frame.pack()
  l1=Label(root7,text="AADHAAR NO.")
  11.place(x=10,y=130)
  x3=tkinter.Entry(root7)
  x3.place(x=100,y=130)
  ad=x3.get()
  b1=Button(root7,text='Submit',command=view_data)
  b1.place(x=100,y=160)
  root7.resizable(False,False)
  root7.mainloop()
def view data():
  global p1
  p1=x3.get()
  cur.execute('select * from appointment where idno=(%s)',(p1,))
  dat=cur.fetchall()
  print(dat)
a=[]
  for i in dat:
    a.append(i)
  if len(a) == 0:
    tkinter.messagebox.showwarning("ERROR", "NO DATA FOUND!!")
  else:
    det=a
    tkinter.messagebox.showinfo("APPOINTMENT DETAILS",det)
root=Tk()
```

```
label=Label(root,text="HOSPITAL MANAGEMENT SYSTEM",font="arial 40"
bold",bg='light blue')
b1=Button(text="Registration",font="arial 20
bold",bg='yellow',command=register)
b2=Button(text="Appointment",font="arial 20
bold",bg='yellow',command=apoint)
b3=Button(text="List of Doctors",font="arial 20
bold",bg='yellow',command=lst doc)
b4=Button(text="Services available",font='arial 20
bold',bg='yellow',command=ser avail)
b7=Button(text="View data",font='arial 20
bold',bg='yellow',command=search data)
b5=Button(text="Modify existing data",font='arial 20
bold',bg='yellow',command=mod sub)
b6=Button(text="Exit",font='arial 20 bold',command=root.destroy,bg='violet')
label.pack()
b1.pack(side=LEFT,padx=10)
b3.pack(side=LEFT,padx=10)
b4.pack(side=LEFT,padx=10)
b2.place(x=25,y=500)
b7.pack(side=LEFT,padx=10)
b5.place(x=350,y=500)
b6.place(x=800,y=500)
frame=Frame(root,height=600,width=50)
frame.pack()
root.resizable(False,False)
root.mainloop()
```

OUTPUT



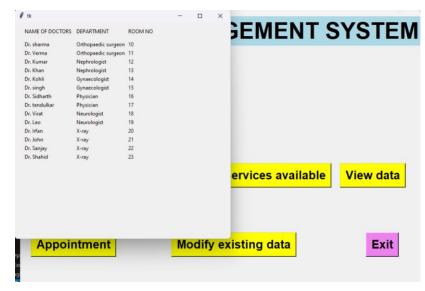




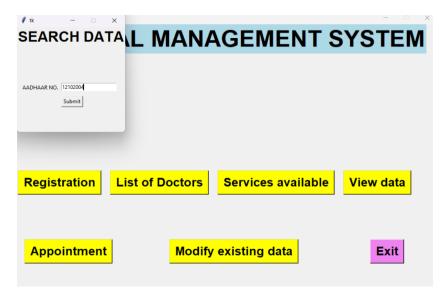
MAIN PAGE

REGISTRATION PAGE

REGISTRATION SUCCESSFUL

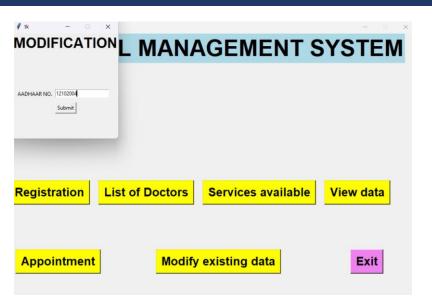


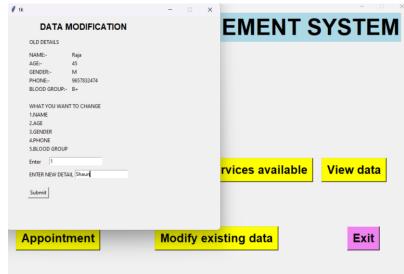
LIST OF DOCTORS

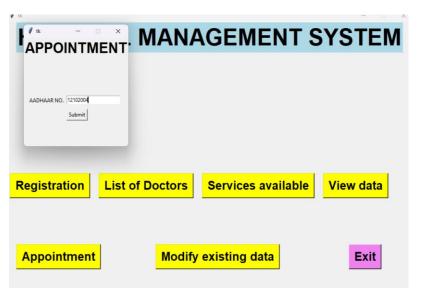


VIEW DATA

OUTPUT



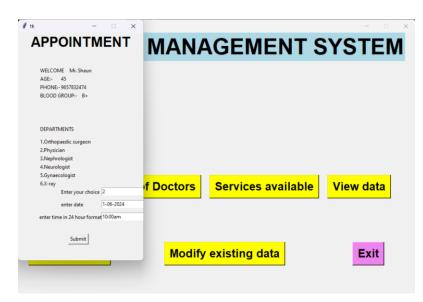




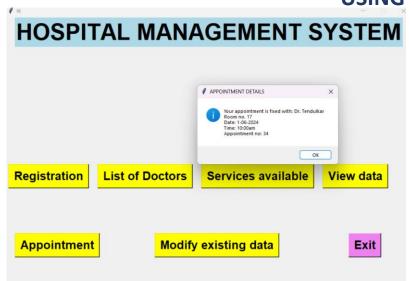
MODIFY EXISTING DATA

MODIFICATION PROCESS

BOOK AN APPOINTMENT USING AADHAR



BOOKING AN APPOINTMENT



BOOKING SUCCESSFUL

THANKYOU

