#### **VACCINE BOOKING SYSTEM**

#### 21CSS101J - PROGRAMMING FOR PROBLEM SOLVING

**Mini Project Report** 

Submitted by

Tharun Subramanian.C [Reg. No.: RA2211003011187]
B.Tech. CSE - Core



# SCHOOL OF COMPUTING COLLEGE OF ENGINEERING AND TECHNOLOGY SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Under Section 3 of UGC Act, 1956) S.R.M. NAGAR, KATTANKULATHUR – 603 203 KANCHEEPURAM DISTRICT

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## PROBLEM STATEMENT

To implement a basic vaccine booking system using Python or C, allowing the users to easily book vaccine slots in their particular city according to their convenient date and time. The user can even book vaccine slots for their family members using their own account. In recent times, the lives of people have taken a serious turn. Lockdowns and restrictions everywhere we go. We have norms that we have never thought of before. Vaccines are one way we can protect ourselves from all these happening around the world. This project will make things simpler for people to book their vaccines making the world a safer place. Not long ago, most of the things we did were not online which made things a lot harder and confusing. A lot of mistakes were made and a lot of time was wasted. But these days it is neither safe for people to go out and stand in a queue nor do people have time for that.

#### **METHODOLOGY/PROCEDURE**

- This project consists of three main functions. The login function is used for the user to either register a new account using an username and a password or login into his/her database by using the already registered username and password.
- The next function is the registor function where the user will be asked to enter all his details such as details of the patient such as name, contact, email id, phone number, gender, city, and state.
- The final function used is the registraionform which creates the whole UI for this project which makes it simple for the user to use.
- This project makes it simpler for people to book vaccines and store a large amount of data and organize it.

#### **Functions Used**

✓ Login():

This is used to log in or create a new account

✓ Registor():

This is used to accept the details of the patient such as name, contact, email id, phone number, gender, city, and state

✓ Registrationform():

This is used to create the UI for the whole project

## **SOURCE CODE**

#### **LOGIN CODE**

```
from tkinter import *
from tkinter import messagebox
import mysql.connector
status = False
r status = False
register state = True
register state 1 = True
user id = ''
warn = 0
time count = 500
def login using user(password):
    global user_id, status, register state 1
    register state 1 = True
    status = False
    # Creating and executing the login interface
    def login interface():
        global register state 1
        register_state_1 = False
        # Deleting the login or register screen
        try:
            screen.destroy()
        except:
            pass
        # Function for checking the password
        def get password():
            global status, user id, warn
            # Getting the user id and password
            user id = user entry.get().lower()
            password = password entry.get()
            warning count = warn
            # Checking the user id and password
            if user id not in records:
                if warning_count in (0, 1):
                    warning count += 1
                    warn = warning_count
                    available = 3 - warning count
                    user entry.delete(0, END)
```

```
password entry.delete(0, END)
                    messagebox.showwarning('WARNING', 'USER not found')
                elif warning count == 2:
                    # Displaying and ending the login screen
                    warning count = 3
                    warn = warning count
                    messagebox.showerror('ERROR', '3 WRONG ATTEMPTS')
                    root.destroy()
                    status = False
            elif records[user id] != password:
                if warning count in (0, 1):
                    # Clearing the entry field
                    user entry.delete(0, END)
                    password entry.delete(0, END)
                    # Displaying the error
                    warning count += 1
                    warn = warning count
                    available = 3 - warning count
                    messagebox.showwarning('WARNING', 'PASSWORD does not match')
                elif warning count == 2:
                    # Displaying and ending the login screen
                    warning count = 3
                    warn = warning count
                    messagebox.showerror('ERROR', '3 WRONG ATTEMPTS')
                    root.destroy()
                    status = False
            else:
                user entry.delete(0, END)
                password entry.delete(0, END)
                # Displaying the message and ending the screen
                messagebox.showinfo('SUCCESS', 'SUCCESSFULLY LOGGED IN')
                root.destroy()
                status = True
        # Initializing the screen
        root = Tk()
        root.title('LOGIN')
        # Getting the records
        database = mysql.connector.connect(host='localhost', user='root',
password='tharun', database='vaccine project')
        cursor = database.cursor()
        cursor.execute('select * from passwords;')
        result = cursor.fetchall()
```

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```
records = {}
    for i in result:
        records.update({i[0]: i[1]})
    # Labels and buttons
    u label = Label(root, text='User')
    u label.grid(row=0, column=1)
    user entry = Entry(root, width=30)
    user entry.grid(row=0, column=2)
    p label = Label(root, text='Password')
    p label.grid(row=1, column=1)
    password entry = Entry(root, show='*', width=30)
    password entry.grid(row=1, column=2)
    login = Button(root, text='LOGIN', command=get password)
    login.grid(row=2, column=1, columnspan=2)
    # Initiating the loop
    root.mainloop()
    if not status and warn < 3:
        login using user(password)
# Creating and executing the register interface
def register interface():
    global register state 1
    register state 1 = False
    # Destroying the existing login or register screen
    screen.destroy()
    # Defining a function to register a record and add it to the database
    def insert records():
        global user id, status, r status
        # Getting the user id and password
        user id = user entry.get().lower()
        password = password entry.get()
        # Checking the existing records
        if password == '' or user id == '':
            user entry.delete(0, END)
            password entry.delete(0, END)
            messagebox.showwarning('WARNING', 'USER or PASSWORD cannot be empty')
        elif user id not in records:
            records[user id] = password
            r status = True
            # Adding the user to the database
```

```
cursor.execute('Insert into passwords values(\'%s\',\'%s\')' %
(user id, password))
                database.commit()
                # Showing the success message and proceeding to log in to interface
                messagebox.showinfo("SUCCESS", "SUCCESSFULLY REGISTERED")
                root.destroy()
                login interface()
            # Displaying error and getting a valid user and password
            else:
                user entry.delete(0, END)
                password entry.delete(0, END)
                messagebox.showwarning('WARNING', 'USER already exists')
        # Register interface
        root = Tk()
        root.title('REGISTER')
        # Getting the records
        database = mysql.connector.connect(host='localhost', user='root',
password='tharun', database='vaccine project')
        cursor = database.cursor()
        cursor.execute('select * from passwords;')
        result = cursor.fetchall()
        records = {}
        for i in result:
            records.update({i[0]: i[1]})
        # Labels and buttons
        u label = Label(root, text='User')
        u label.grid(row=0, column=1)
        user entry = Entry(root, width=30)
        user entry.grid(row=0, column=2)
        p label = Label(root, text='Password')
        p label.grid(row=1, column=1)
        password entry = Entry(root, show='*', width=30)
        password entry.grid(row=1, column=2)
        login = Button(root, text='REGISTER', command=insert records)
        login.grid(row=2, column=1, columnspan=2)
        root.mainloop()
        if not r status:
            login using user(password)
    def exit button():
        choice = messagebox.askyesno("EXIT", "Do you want to exit???")
        if choice:
```

```
screen.destroy()
    # Database
    new database = mysql.connector.connect(host='localhost', user='root',
password=password)
   new cursor = new database.cursor()
    new cursor.execute('create database if not exists vaccine project')
    new cursor.execute('use vaccine project')
    new cursor.execute('create table if not exists passwords(user id varchar(20),
password varchar(20))')
    # Login or Register screen
    screen = Tk()
    screen.title('REGISTER AND LOGIN')
    login button = Button(screen, text='LOGIN', padx=97, pady=4,
command=login interface, state=NORMAL, font=('Times', 15))
    login button.grid(row=0, column=0, sticky=W+E)
    register button = Button(screen, text='REGISTER', padx=61, pady=4,
command=register interface, state=NORMAL, font=('Times', 15))
    register button.grid(row=1, column=0, sticky=W+E)
    exit button display = Button(screen, text='EXIT', padx=100, pady=4,
command=exit button, state=NORMAL, font=('Times', 15))
   exit button display.grid(row=2, column=0, sticky=W+E)
    screen.protocol('WM DELETE WINDOW', exit button)
    screen.mainloop()
    return user id, status
```

#### Main Code

```
from tkinter import *
from tkinter import ttk
# Importing connection
import mysql.connector
conn = mysql.connector.connect(user='root', password='tharun', host='localhost',
database='vaccine project')
def registration form():
   patient list.destroy()
   def register():
       name1 = name.get()
       con1 = contact.get()
       email1 = email.get()
       gen1 = gender.get()
       city1 = citychoosen.get()
       hospital1 = hospchoosen.get()
       date1 = datechoosen.get()
       slot1 = slotchoosen.get()
       vaccine1 = vaccine.get()
       hospital1 = hospital.replace(' ', ' ')
       if name1 == '' or con1 == '' or email1 == '' or gen1 == 0 or city1.upper() ==
'NONE' or hospital1 == 'NONE' or date1.upper() == 'NONE' or slot1.upper() == 'NONE' or
vaccine1 == 0:
           message.set("Fill all the fields")
       elif len(con1) == 0 or not con1.isdigit() or len(con1)!=10 :
           message.set("Provide valid contact number")
       elif len(email1.split('@')) != 2 or email1[-4:] != '.com'or
len(email1.split('0')[1].split('.')[0]) == 0:
           message.set("Provide valid email")
       else:
           cursor = conn.cursor()
           insert stmt = "INSERT INTO patient_list(NAME, CONTACT, EMAIL, GENDER, CITY,
%s, %s)"
           if gen1 == 1:
               gen name = 'Male'
           else:
               gen name = 'Female'
           if vaccine1 == 1:
               vac name = 'Covaccine'
           else:
               vac name = 'Covishield'
```

```
slot no = ['8:30 - 9:00', '9:00 - 9:30', '9:30 - 10:00', '10:00 -
10:30'].index(slot1) + 1
            data = (name1, con1, email1, gen name, city1, user id, vac name, date1,
slot1, hospital1)
            cursor.execute(insert stmt, data)
            cursor.execute('update %s set slot%d = slot%d - 1 where dov = "%s"' %
(hospital1, slot no, slot no, date1))
            conn.commit()
            # conn.rollback()
            message.set("Stored successfully")
            reg screen.destroy()
    def alter tree(event):
        global city
        city = citychoosen.get()
        citychoosen.set(city)
        req list = []
        cursor = conn.cursor()
        cursor.execute('select name from hospital where city = "%s"' % city)
        req list = cursor.fetchall()
        req list = [i[0] for i in req list]
        hospchoosen['values'] = req list
        hospchoosen.set('NONE')
        datechoosen.set('SELECT HOSPITAL')
        datechoosen['values'] = []
        slotchoosen.set('SELECT DATE')
        slotchoosen['values'] = []
    def alter tree 1(event):
        global hospital
        hospital = hospchoosen.get()
        hospchoosen.set(hospital)
        hospital1 = hospital.replace(' ', ' ')
        req list = []
        cursor = conn.cursor()
        cursor.execute('create table if not exists %s(dov date primary key, slot1 int
default 5, slot2 int default 5, slot3 int default 5, slot4 int default 5)' % hospital1)
        cursor.execute('delete from %s where dov < date(now())' % hospital1)</pre>
        for i in range(7):
            try:
                cursor.execute('insert into %s(dov) values((SELECT
DATE ADD(date(now()), INTERVAL %d DAY)));' % (hospital1, i))
            except:
                pass
        conn.commit()
```

```
cursor.execute('select dov from %s where slot1 > 0 or slot2 > 0 or slot3 > 0 or
slot4 > 0' % hospital1)
        req list = cursor.fetchall()
        req list = [i[0] for i in req list]
        datechoosen['values'] = req_list
        datechoosen.set('NONE')
        slotchoosen.set('SELECT DATE')
        slotchoosen['values'] = []
    def alter tree 2(event):
        global hospital, slot, date
        hospital1 = hospital.replace(' ', ' ')
        date = datechoosen.get()
        datechoosen.set(date)
        req list = []
        cursor = conn.cursor()
        cursor.execute('select slot1, slot2, slot3, slot4 from %s where dov = "%s"' %
(hospital1, date))
        req list = cursor.fetchall()[0]
        slot1, slot2, slot3, slot4 = req list
        req list = []
        if slot1 > 0:
            req list.append('8:30 - 9:00')
        if slot2 > 0:
            req list.append('9:00 - 9:30')
        if slot3 > 0:
            req list.append('9:30 - 10:00')
        if slot4 > 0:
            req list.append('10:00 - 10:30')
        slotchoosen['values'] = req list
        slotchoosen.set('NONE')
    global reg_screen
    reg screen = Tk()
    reg screen.title("Registration Form")
    # Setting height and width of screen
    reg_screen.geometry("350x480")
    global message
    global name
    global email
    global gender
    global city
    global hospital
    global date
    global slot
```

```
global vaccine
    name = StringVar()
    contact = StringVar()
    email = StringVar()
    gender = IntVar()
    vaccine = IntVar()
    city = StringVar()
    state = StringVar()
    message = StringVar()
    hospital = StringVar()
    date = StringVar()
    slot = IntVar()
    Label (reg screen, width="300", text="Please enter details below", bg="lightblue",
fg="red").pack()
    # Name Label
    Label (reg screen, text="Name * ").place(x=20, y=40)
    # Name textbox
    Entry(reg screen, textvariable=name).place(x=90, y=44)
    # Contact Label
    Label (reg screen, text="Contact * ").place(x=20, y=80)
    # Contact textbox
    Entry(reg screen, textvariable=contact).place(x=90, y=80)
    # email Label
    Label (reg screen, text="Email * ").place(x=20, y=120)
    # email textbox
    Entry(reg screen, textvariable=email).place(x=90, y=122)
    # gender Label
    Label (reg screen, text="Gender * ").place(x=20, y=160)
    # gender radiobutton
    Radiobutton(reg screen, text="Male", variable=gender, value=1).place(x=90, y=162)
    Radiobutton(reg screen, text="Female", variable=gender, value=2).place(x=150,
y=162)
    Label (reg screen, text="Vaccine * ").place(x=20, y=202)
   Radiobutton(reg screen, text="Covaccine", variable=vaccine, value=1).place(x=90,
y = 202)
    Radiobutton(reg screen, text="Covishield", variable=vaccine, value=2).place(x=170,
y = 202)
    # city Label
    Label (reg screen, text="City * ").place(x=20, y=242)
    # city combobox
    citychoosen = ttk.Combobox(reg screen, width=27, textvariable=city)
```

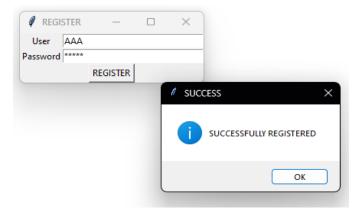
```
citychoosen['values'] = ('NONE', 'Chennai', 'Mumbai', 'Bangalore', 'Kochi',
'Kolkata',)
    citychoosen.current(0)
    citychoosen.place(x=90, y=242)
    citychoosen.bind('<<ComboboxSelected>>', alter tree)
    # hosp Label
    Label (reg screen, text="Hospital * ").place(x=20, y=282)
    # hosp combobox
    hospchoosen = ttk.Combobox(reg screen, width=27, textvariable=hospital)
    hospchoosen['values'] = []
    hospchoosen.set('SELECT HOSPITAL')
    hospchoosen.place(x=90, y=282)
    hospchoosen.bind('<<ComboboxSelected>>', alter tree 1)
    # date Label
    Label (reg screen, text="Date * ").place(x=20, y=322)
    # date combobox
    datechoosen = ttk.Combobox(reg screen, width=27, textvariable=date)
    datechoosen['values'] = []
    datechoosen.set('SELECT DATE')
    datechoosen.place(x=90, y=322)
    datechoosen.bind('<<ComboboxSelected>>', alter tree 2)
    # slot Label
    Label (reg screen, text="Slot * ").place(x=20, y=362)
    # slot combobox
    slotchoosen = ttk.Combobox(reg screen, width=27, textvariable=slot)
    slotchoosen['values'] = []
    slotchoosen.set('SELECT SLOT')
    slotchoosen.place (x=90, y=362)
    slotchoosen.bind('<<ComboboxSelected>>')
    # Label for displaying login status[success/failed]
    Label (reg screen, text="", textvariable=message).place(x=95, y=442)
    # Login button
    Button (reg screen, text="Register", width=10, height=1, bg="gold",
command=register).place(x=105, y=402)
    reg screen.mainloop()
def vacancy():
    # city Label
   Label (reg screen, text="City * ").place(x=20, y=242)
    # city combobox
    citychoosen = ttk.Combobox(reg screen, width=27, textvariable=city)
    citychoosen['values'] = ('NONE', 'Chennai', 'Mumbai', 'Bangalore', 'Kochi',
'Kolkata',)
    citychoosen.current(0)
    citychoosen.place(x=90, y=242)
    citychoosen.bind('<<ComboboxSelected>>', alter tree)
```

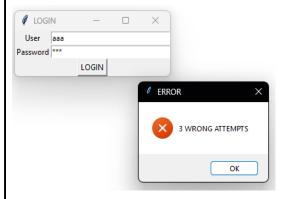
```
# hosp Label
    Label (reg screen, text="Hospital * ").place(x=20, y=282)
    # hosp combobox
    hospchoosen = ttk.Combobox(reg screen, width=27, textvariable=hospital)
    hospchoosen['values'] = []
    hospchoosen.set('SELECT CITY')
    hospchoosen.place(x=90, y=282)
    hospchoosen.bind('<<ComboboxSelected>>', alter tree 1)
def form():
   patient list.destroy()
    cursor = conn.cursor()
    cursor.execute('select Name, Contact, Email, Gender, City, Vaccine, Dov, Slot no,
Hospital_Name from patient_list where user id = "%s"' % user id)
    result = cursor.fetchall()
    if not result:
        result = [('', '', '', 'NO', 'RECORDS', 'FOUND', '', '', '')]
    def back function():
        display screen.destroy()
    display screen = Tk()
    display screen.title('PATIENT LIST')
    user label = Label(display screen, text='USER ID : '+user id, font=('Times New
roman', 12))
    user label.grid(row=0, column=0)
    patient frame = Frame(display screen)
    patient frame.grid(row=1, column=0)
    back = Button(display screen, text='BACK', command=back function)
    back.grid(row=2, column=0, sticky=N + S + W + E, pady=4)
    scroll = Scrollbar(patient frame, orient=VERTICAL)
    scroll.pack(side=RIGHT, fill='y')
   high score = ttk.Treeview(patient frame, height=7, yscrollcommand=scroll.set)
   high score.pack()
    scroll.config(command=high score.yview)
   high score['columns'] = ("Name", "Contact", "Email", "Gender", "City", "Vaccine",
"Date", "Slot", "Hospital")
    high score.column("#0", width=0, stretch=NO)
    high score.column("Name", anchor=CENTER, width=150)
    high_score.column("Contact", anchor=CENTER, width=100)
   high score.column("Email", anchor=CENTER, width=150)
   high score.column("Gender", anchor=CENTER, width=70)
    high score.column("City", anchor=CENTER, width=100)
```

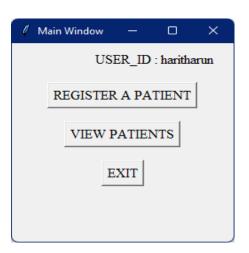
```
high score.column("Vaccine", anchor=CENTER, width=80)
    high score.column("Date", anchor=CENTER, width=80)
    high score.column("Slot", anchor=CENTER, width=80)
    high score.column("Hospital", anchor=CENTER, width=150)
    high score.heading('Name', text='Name', anchor=CENTER)
    high score.heading('Contact', text='Contact', anchor=CENTER)
    high score.heading('Email', text='Email', anchor=CENTER)
    high score.heading('Gender', text='Gender', anchor=CENTER)
    high_score.heading('City', text='City', anchor=CENTER)
    high score.heading('Vaccine', text='Vaccine', anchor=CENTER)
    high score.heading('Date', text='Date', anchor=CENTER)
    high score.heading('Slot', text='Slot', anchor=CENTER)
    high score.heading('Hospital', text='Hospital', anchor=CENTER)
    for position in range(len(result)):
        result[position] = list(result[position])
        high score.insert(parent='', index=END, iid=position, text='',
value=result[position])
    display screen.mainloop()
import login
user id, status = login.login using user('tharun')
def exit button():
    patient list.destroy()
    global status
    status = False
    exit()
while status:
   patient list = Tk()
   patient_list.geometry('250x250')
    patient list.title('Main Window')
    userid = Label(patient list, text='USER ID : '+user id, font=('Times New roman',
12))
    userid.pack(anchor=NE, padx=20, pady=8)
    newp = Button(patient list, text='REGISTER A PATIENT', command=registration form,
font=('Times New roman', 12))
    newp.pack(padx=20, pady=8)
    oldp = Button(patient list, text='VIEW PATIENTS', command=form, font=('Times New
roman', 12))
    oldp.pack(padx=20, pady=8)
    exitb = Button(patient list, text='EXIT', command=exit button, font=('Times New
roman', 12))
    exitb.pack(padx=20, pady=8)
    patient list.protocol('WM DELETE WINDOW', exit_button)
    patient list.mainloop()
```

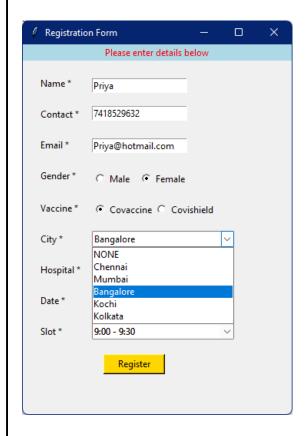
# **RESULTS**

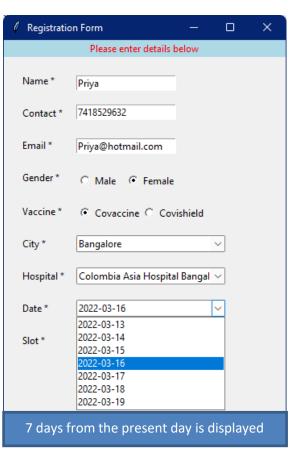


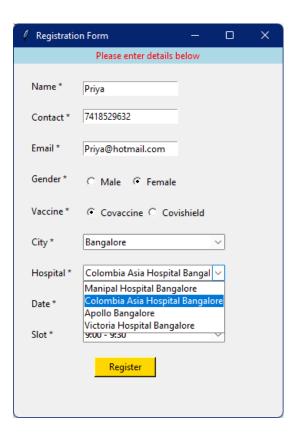


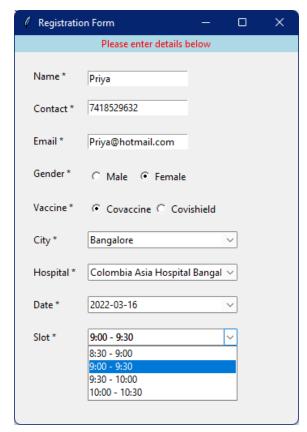


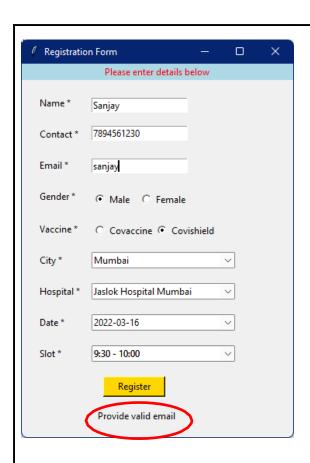


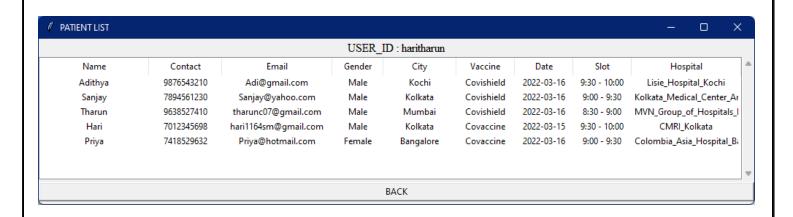












SelectMySQL 80 Command Line Client - Unicode

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use vaccine\_project;

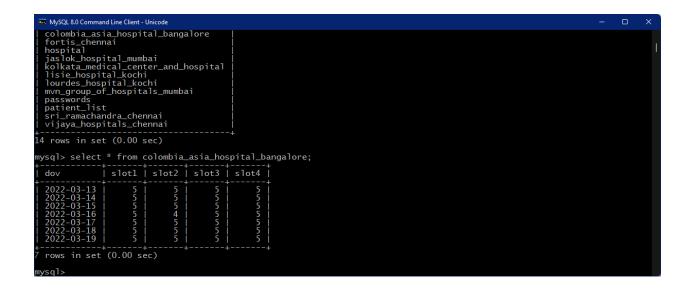
Database changed

mysql> show tables;

I Tables\_in\_vaccine\_project

apollo\_chennai | coninkolkata | colombia\_asia\_hospital\_bangalore | fortis\_chennai | laisie\_hospital\_mumbai | laisie\_hospital\_kochi | lourdes\_hospital\_kochi | lourdes\_hospital\_kochi | lourdes\_hospital\_kochi | myn\_group\_of\_hospitals\_mumbai | passwords | patient\_list | sri\_ramachandra\_chennai | vijaya\_hospitals\_chennai | vijaya\_hospitals

MySQL	8.0 Command Line Client - Unicode												_ ×
	+ name   contact     hospital_name	email			city	1	user_id	1	vaccine	1	dov	  -	slot_n
9:30   3	+ abc   9876543210     Apollo_Chennai abcc   9874563210	abc@gmail.com			Chennai Chennai		tharun tharun				2022-01-11 2022-01-16		
9:00   5   9:30   6	Fortis_Chennai   haha   9875442555     Vijaya_Hospitals_Chen	 tharunc@gmail.com	Male		Chennai Chennai		tharun tharun				2022-01-13		
9:30	Vijaya_Hospitals_Chen	nai     abc@gmail.com nai			Chennai Kochi		tharun		Covaccine		2022-03-16 2022-03-16		9:00 -
10:00   9   9:30	Lisie_Hospital_Kochi   Sanjay   7894561230     Kolkata_Medical_Cente	   Sanjay@yahoo.com  r_And_Hospital	Male		Kolkata		haritharun		Covishield		2022-03-16		9:00 -
9:00   11   10:00	CMRI_Kolkata	s_Mumbai	Male		Kolkata		haritharun		Covaccine		2022-03-16 2022-03-15		9:30 -
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#### **CONCLUSION**

The process of developing this project has been a challenging yet interesting task. This topic had as steep learning curve which required our dedication and hard work to execute and achieve within the stipulated time. The application has turned out exactly as the initial plan with some added extra features.

This code of this project contains about 600 lines. Our aim was to make this project really simple so that even common people can use it easily.

We made login modules so that the safety of the users wont be compromised. Users can easily check the patient list of their account by logging in using their account.

The Python language is one of the most accessible programming languages available because it has simplified syntax and is not complicated, which gives more emphasis on natural language. Due to its ease of learning and usage, python codes can be easily written and executed much faster than other programming languages: Python language is

efficient, reliable, and much faster than most modern languages.

One more best thing about the versatility of python language is that it can be used in many varieties of environments such as mobile applications, desktop applications, web development, hardware programming, and many more. The versatility of python makes it more attractive to use due to its high number of applications.

Now python language is being treated as the core programming language in schools and colleges due to its countless uses in Artificial Intelligence, Deep Learning, Data Science, etc. It has now become a fundamental part of the development world that schools and colleges cannot afford not to teach python language.