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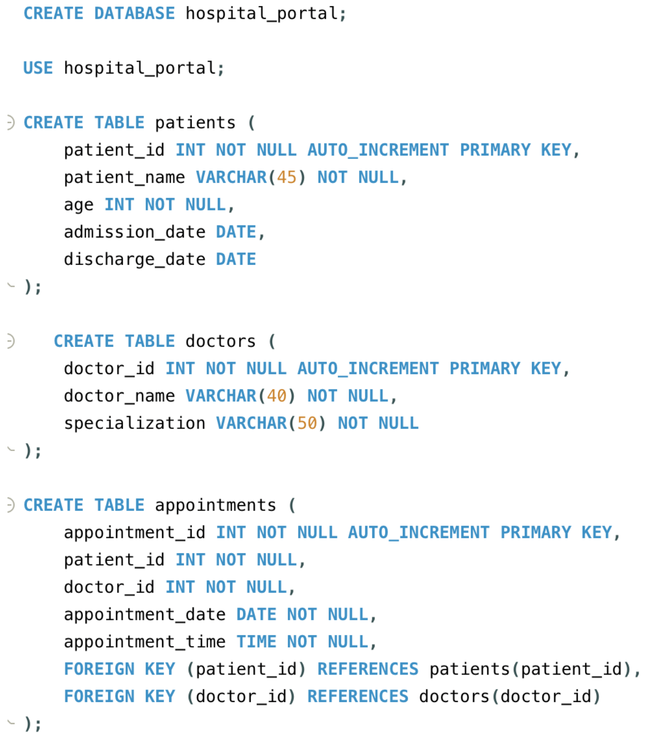
Yanilda Peralta Ramos

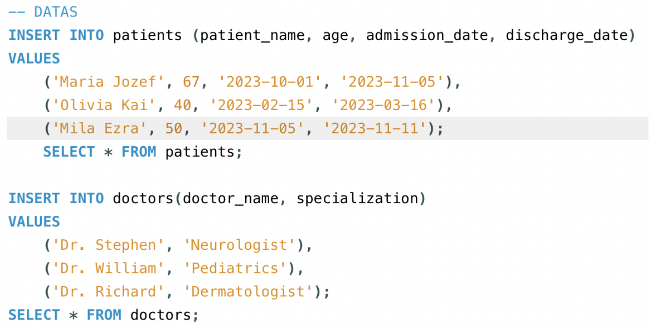
CIS 344 FINAL PROJECT REPORT
HOSPITAL PORTAL

To start the project I started with creating the database in MySQL workbench. Since this is a new project I had to use CREATE DATABASE with the name hospital_portal. Then I started to create three tables using the CREATE TABLE command. For the patients table I used attributes such as patient id, name, age, admission_date, discharge_date followed by giving each its datatype such as int, date, varchar. I also included a primary key to differentiate from the rest of the attributes. Primary key is given because it is unique and should not be a null value. I created other two tables such as doctors and appointments, each table had its own attributes followed by correct data types and primary keys along with foreign keys with references. Here are some pictures of the tables from my sql.



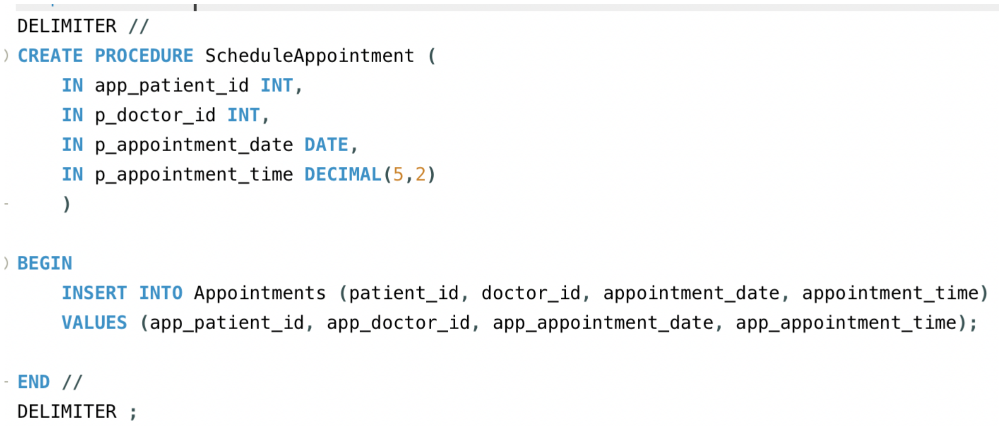
```
CREATE DATABASE hospital_portal;

USE hospital_portal;

CREATE TABLE patients (
    patient_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    patient_name VARCHAR(45) NOT NULL,
    age INT NOT NULL,
    admission_date DATE,
    discharge_date DATE
);

   CREATE TABLE doctors (
    doctor_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    doctor_name VARCHAR(40) NOT NULL,
    specialization VARCHAR(50) NOT NULL
);

CREATE TABLE appointments (
    appointment_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    patient_id INT NOT NULL,
    doctor_id INT NOT NULL,
    appointment_date DATE NOT NULL,
    appointment_time TIME NOT NULL,
    FOREIGN KEY (patient_id) REFERENCES patients(patient_id),
    FOREIGN KEY (doctor_id) REFERENCES doctors(doctor_id)
);
```

Next I added some data to each of the tables.

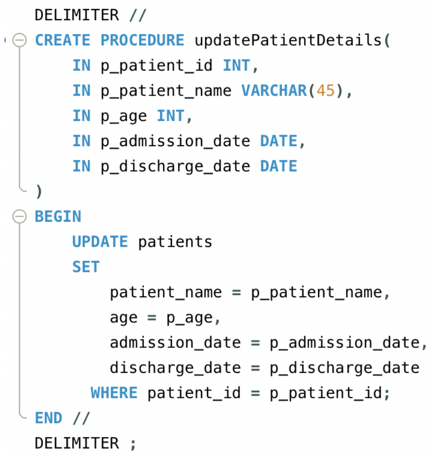


```
-- DATAS
INSERT INTO patients (patient_name, age, admission_date, discharge_date)
VALUES
    ('Maria Jozef', 67, '2023-10-01', '2023-11-05'),
    ('Olivia Kai', 40, '2023-02-15', '2023-03-16'),
    ('Mila Ezra', 50, '2023-11-05', '2023-11-11');
    SELECT * FROM patients;

INSERT INTO doctors(doctor_name, specialization)
VALUES
    ('Dr. Stephen', 'Neurologist'),
    ('Dr. William', 'Pediatrics'),
    ('Dr. Richard', 'Dermatologist');
SELECT * FROM doctors;
```

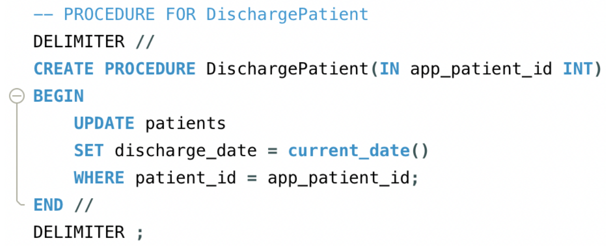
I then moved to creating stored procedures for ScheduleAppointment, updatePatientDetails, and DischargePatient. I used the DELIMITER AND CREATE PROCEDURE command followed by another “BEGIN AND END with //” to create my stored procedures. I first created the ScheduleAppointment by giving it four parameters: the patient_id, doctor_id, appointment_date, appointment_time. In between the BEGIN and END and INSERT into Appointments patient_id, doctor_id, appointment_date, appointment_time) VALUES (app_patient_id, app_doctor_id, app_appointment_date, app_appointment_time). To close off I used END // DELIMITER ;.



```
DELIMITER //
CREATE PROCEDURE ScheduleAppointment (
    IN app_patient_id INT,
    IN p_doctor_id INT,
    IN p_appointment_date DATE,
    IN p_appointment_time DECIMAL(5,2)
    )

BEGIN
    INSERT INTO Appointments (patient_id, doctor_id, appointment_date, appointment_time)
    VALUES (app_patient_id, app_doctor_id, app_appointment_date, app_appointment_time);

END //
DELIMITER ;
```

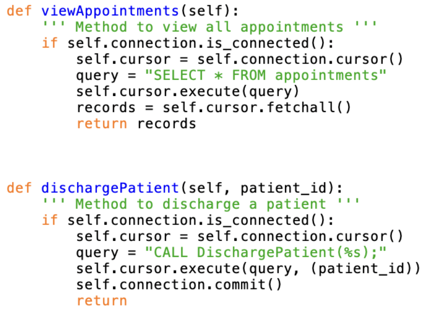


```
DELIMITER //
CREATE PROCEDURE updatePatientDetails(
    IN p_patient_id INT,
    IN p_patient_name VARCHAR(45),
    IN p_age INT,
    IN p_admission_date DATE,
    IN p_discharge_date DATE
)
BEGIN
    UPDATE patients
    SET
        patient_name = p_patient_name,
        age = p_age,
        admission_date = p_admission_date,
        discharge_date = p_discharge_date
      WHERE patient_id = p_patient_id;
END //
DELIMITER ;
```

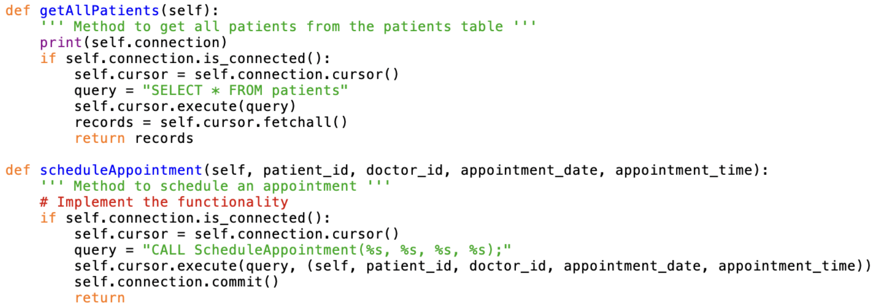


```
-- PROCEDURE FOR DischargePatient
DELIMITER //
CREATE PROCEDURE DischargePatient(IN app_patient_id INT)
BEGIN
    UPDATE patients
    SET discharge_date = current_date()
    WHERE patient_id = app_patient_id;
END //
DELIMITER ;
```

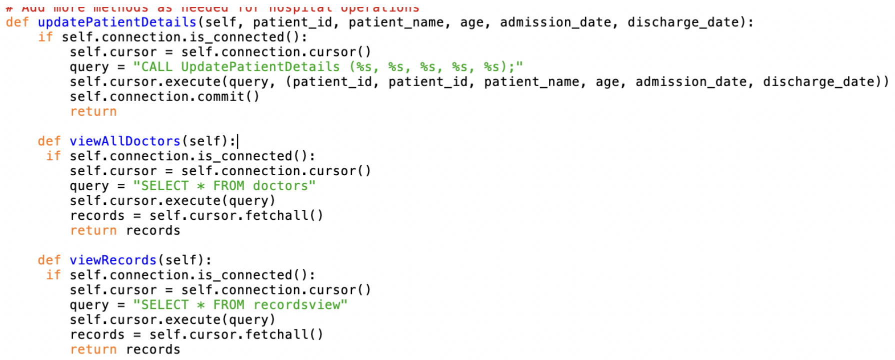
To connect all the files together for it to show up on the browser we need to download mysql.connector and add the mysql password, host, port number, and correct database name to the portalDatabase.py file. After all of the files were connected and showed up on the browser it was time to add the rest of the codes. On the files portalDatabase.py I used the given code to implement the rest of the codes for scheduleAppointment,viewAppointments, dischargePatient, updatePatientDetails, viewAllDoctors, viewRecords.



```
def viewAppointments(self):
    ''' Method to view all appointments '''
    if self.connection.is_connected():
        self.cursor = self.connection.cursor()
        query = "SELECT * FROM appointments"
        self.cursor.execute(query)
        records = self.cursor.fetchall()
        return records


def dischargePatient(self, patient_id):
    ''' Method to discharge a patient '''
    if self.connection.is_connected():
        self.cursor = self.connection.cursor()
        query = "CALL DischargePatient(%s);"
        self.cursor.execute(query, (patient_id))
        self.connection.commit()
        return
```



```
def getAllPatients(self):
    ''' Method to get all patients from the patients table '''
    print(self.connection)
    if self.connection.is_connected():
        self.cursor = self.connection.cursor()
        query = "SELECT * FROM patients"
        self.cursor.execute(query)
        records = self.cursor.fetchall()
        return records

def scheduleAppointment(self, patient_id, doctor_id, appointment_date, appointment_time):
    ''' Method to schedule an appointment '''
    # Implement the functionality
    if self.connection.is_connected():
        self.cursor = self.connection.cursor()
        query = "CALL ScheduleAppointment(%s, %s, %s, %s);"
        self.cursor.execute(query, (self, patient_id, doctor_id, appointment_date, appointment_time))
        self.connection.commit()
        return
```

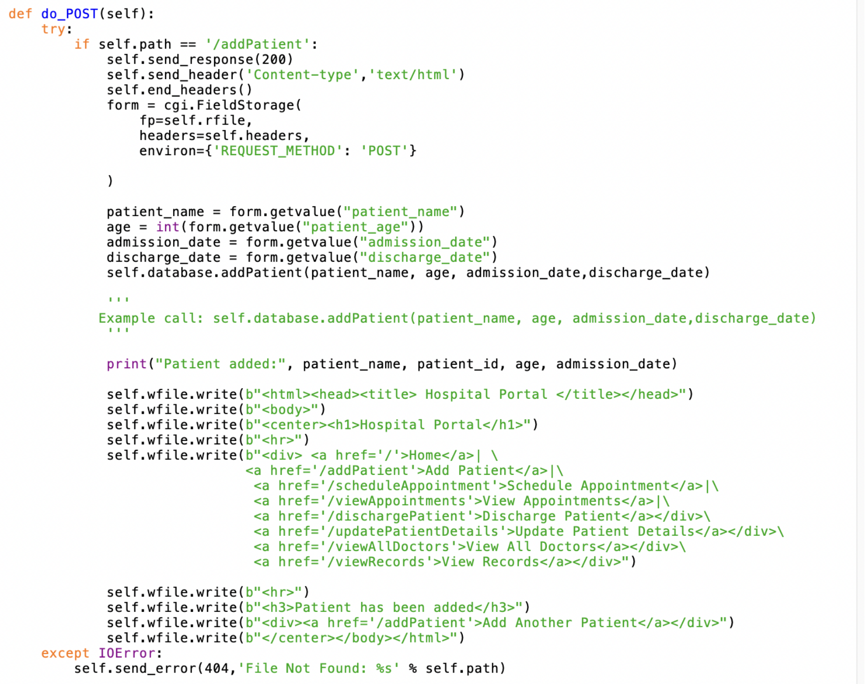


```
# Add more methods as needed for hospital operations
def updatePatientDetails(self, patient_id, patient_name, age, admission_date, discharge_date):
     if self.connection.is_connected():
         self.cursor = self.connection.cursor()
         query = "CALL UpdatePatientDetails (%s, %s, %s, %s, %s);"
         self.cursor.execute(query, (patient_id, patient_id, patient_name, age, admission_date, discharge_date))
         self.connection.commit()
         return

     def viewAllDoctors(self):|
      if self.connection.is_connected():
         self.cursor = self.connection.cursor()
         query = "SELECT * FROM doctors"
         self.cursor.execute(query)
         records = self.cursor.fetchall()
         return records

     def viewRecords(self):
      if self.connection.is_connected():
         self.cursor = self.connection.cursor()
         query = "SELECT * FROM recordsview"
         self.cursor.execute(query)
         records = self.cursor.fetchall()
         return records
```

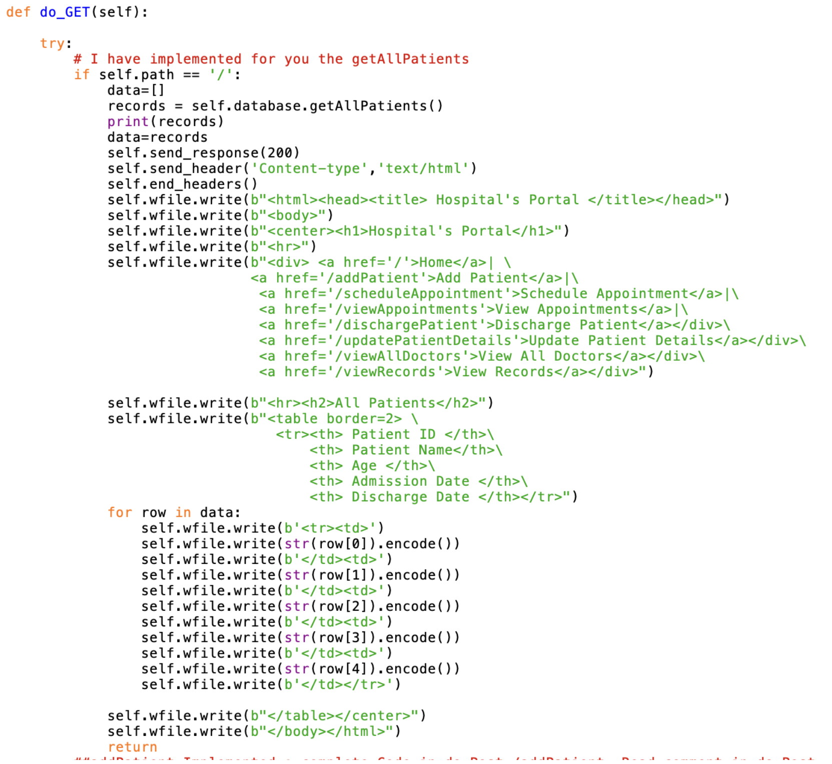
After finishing the portalDatabase.py. I moved on to the portalServer.py.

There were two sections: do_POST and do_GET. The do_GET is used to retrieve information from the server while the do_POST is used for sending data to the server. There were some codes given for each of the sections which I used as my template to implement the rest of the codes. But

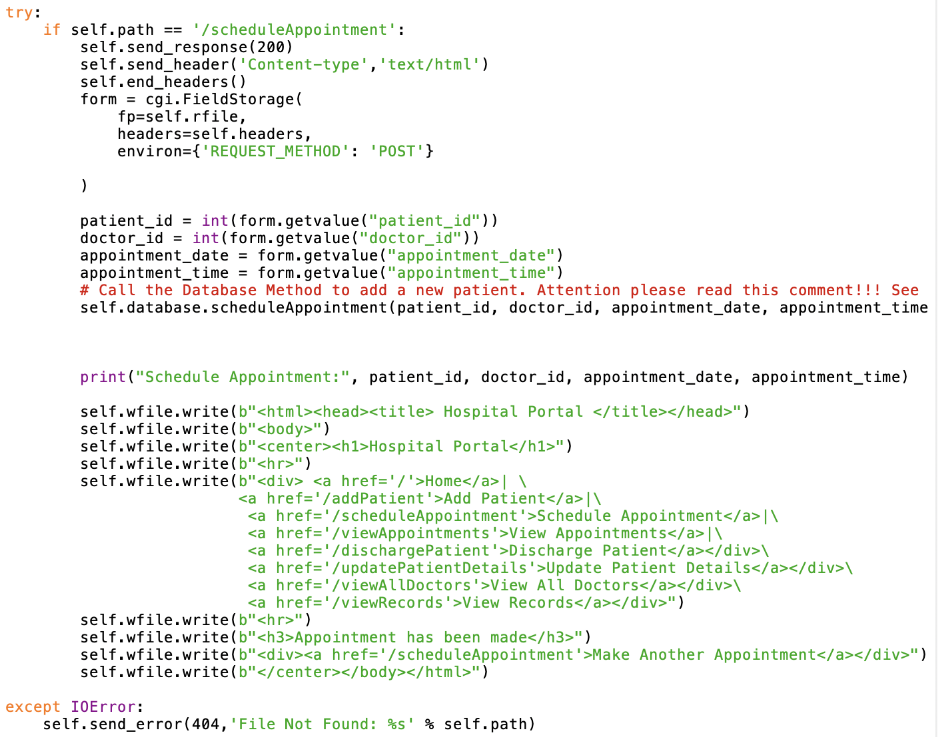
codes that were given there were some bugs that needed to be fixed before I could implement the rest of the functionalities. Such as viewPatients needed to be changed to viewAppointments. After changing that viewAppointments was clickable.We also needed to add the call self.database.addPatient(patient_name, age, admission_date,discharge_date). Later I used the fixed codes to do the rest. Each time I was done making a change or completed a section, I saved it and runned the server.py to see what shows up on the browser. It was trial and error, and I kept changing little by little until I was able to get all the inputs. In the GET sections we included html to create the forms and submit button. The GET section was used to add webpages where if you click on the links it would take you to next pages, or if you click submit it would take the data and add to the tables. Here are some pictures of Server.py



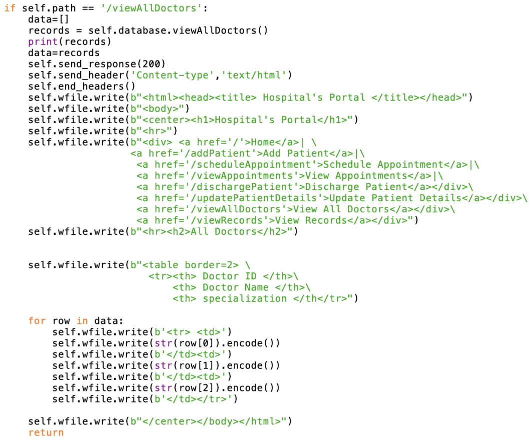
```
def do_POST(self):
    try:
        if self.path == '/addPatient':
            self.send_response(200)
            self.send_header('Content-type','text/html')
            self.end_headers()
            form = cgi.FieldStorage(
                fp=self.rfile,
                headers=self.headers,
                environ={'REQUEST_METHOD': 'POST'}

            )

            patient_name = form.getvalue("patient_name")
            age = int(form.getvalue("patient_age"))
            admission_date = form.getvalue("admission_date")
            discharge_date = form.getvalue("discharge_date")
            self.database.addPatient(patient_name, age, admission_date,discharge_date)

            '''
           Example call: self.database.addPatient(patient_name, age, admission_date,discharge_date)
            '''

            print("Patient added:", patient_name, patient_id, age, admission_date)

            self.wfile.write(b"<html><head><title> Hospital Portal </title></head>")
            self.wfile.write(b"<body>")
            self.wfile.write(b"<center><h1>Hospital Portal</h1>")
            self.wfile.write(b"<hr>")
            self.wfile.write(b"<div> <a href='/'>Home</a>| \
                             <a href='/addPatient'>Add Patient</a>|\
                              <a href='/scheduleAppointment'>Schedule Appointment</a>|\
                              <a href='/viewAppointments'>View Appointments</a>|\
                              <a href='/dischargePatient'>Discharge Patient</a></div>\
                              <a href='/updatePatientDetails'>Update Patient Details</a></div>\
                              <a href='/viewAllDoctors'>View All Doctors</a></div>\
                              <a href='/viewRecords'>View Records</a></div>")

            self.wfile.write(b"<hr>")
            self.wfile.write(b"<h3>Patient has been added</h3>")
            self.wfile.write(b"<div><a href='/addPatient'>Add Another Patient</a></div>")
            self.wfile.write(b"</center></body></html>")
    except IOError:
        self.send_error(404,'File Not Found: %s' % self.path)
```



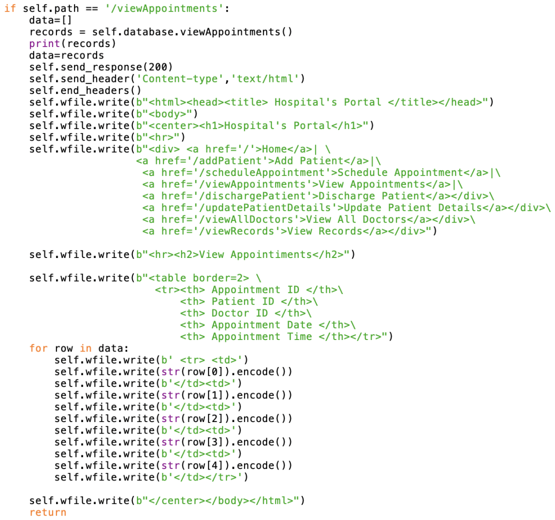
```
def do_GET(self):

    try:
        # I have implemented for you the getAllPatients
        if self.path == '/':
            data=[]
            records = self.database.getAllPatients()
            print(records)
            data=records
            self.send_response(200)
            self.send_header('Content-type','text/html')
            self.end_headers()
            self.wfile.write(b"<html><head><title> Hospital's Portal </title></head>")
            self.wfile.write(b"<body>")
            self.wfile.write(b"<center><h1>Hospital's Portal</h1>")
            self.wfile.write(b"<hr>")
            self.wfile.write(b"<div> <a href='/'>Home</a>| \
                             <a href='/addPatient'>Add Patient</a>|\
                              <a href='/scheduleAppointment'>Schedule Appointment</a>|\
                              <a href='/viewAppointments'>View Appointments</a>|\
                              <a href='/dischargePatient'>Discharge Patient</a></div>\
                              <a href='/updatePatientDetails'>Update Patient Details</a></div>\
                              <a href='/viewAllDoctors'>View All Doctors</a></div>\
                              <a href='/viewRecords'>View Records</a></div>")

            self.wfile.write(b"<hr><h2>All Patients</h2>")
            self.wfile.write(b"<table border=2> \
                                <tr><th> Patient ID </th>\
                                    <th> Patient Name</th>\
                                    <th> Age </th>\
                                    <th> Admission Date </th>\
                                    <th> Discharge Date </th></tr>")
            for row in data:
                self.wfile.write(b'<tr><td>')
                self.wfile.write(str(row[0]).encode())
                self.wfile.write(b'</td><td>')
                self.wfile.write(str(row[1]).encode())
                self.wfile.write(b'</td><td>')
                self.wfile.write(str(row[2]).encode())
                self.wfile.write(b'</td><td>')
                self.wfile.write(str(row[3]).encode())
                self.wfile.write(b'</td><td>')
                self.wfile.write(str(row[4]).encode())
                self.wfile.write(b'</td></tr>')

            self.wfile.write(b"</table></center>")
            self.wfile.write(b"</body></html>")
            return
        ##addPatient Implemented : complete Code in do_Post (addPatient. Read comment in do_Post
```



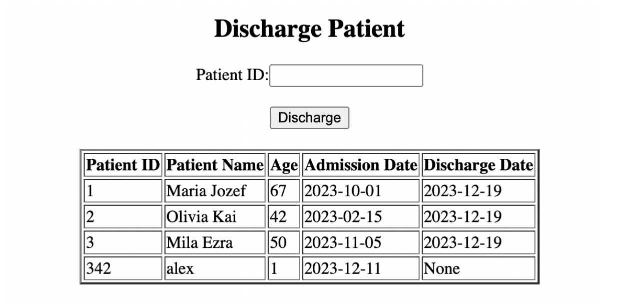
```
try:
    if self.path == '/scheduleAppointment':
        self.send_response(200)
        self.send_header('Content-type','text/html')
        self.end_headers()
        form = cgi.FieldStorage(
            fp=self.rfile,
            headers=self.headers,
            environ={'REQUEST_METHOD': 'POST'}

        )

        patient_id = int(form.getvalue("patient_id"))
        doctor_id = int(form.getvalue("doctor_id"))
        appointment_date = form.getvalue("appointment_date")
        appointment_time = form.getvalue("appointment_time")
        # Call the Database Method to add a new patient. Attention please read this comment!!! See
        self.database.scheduleAppointment(patient_id, doctor_id, appointment_date, appointment_time



        print("Schedule Appointment:", patient_id, doctor_id, appointment_date, appointment_time)

        self.wfile.write(b"<html><head><title> Hospital Portal </title></head>")
        self.wfile.write(b"<body>")
        self.wfile.write(b"<center><h1>Hospital Portal</h1>")
        self.wfile.write(b"<hr>")
        self.wfile.write(b"<div> <a href='/'>Home</a>| \
                         <a href='/addPatient'>Add Patient</a>|\
                          <a href='/scheduleAppointment'>Schedule Appointment</a>|\
                          <a href='/viewAppointments'>View Appointments</a>|\
                          <a href='/dischargePatient'>Discharge Patient</a></div>\
                          <a href='/updatePatientDetails'>Update Patient Details</a></div>\
                          <a href='/viewAllDoctors'>View All Doctors</a></div>\
                          <a href='/viewRecords'>View Records</a></div>")
        self.wfile.write(b"<hr>")
        self.wfile.write(b"<h3>Appointment has been made</h3>")
        self.wfile.write(b"<div><a href='/scheduleAppointment'>Make Another Appointment</a></div>")
        self.wfile.write(b"</center></body></html>")

except IOError:
    self.send_error(404,'File Not Found: %s' % self.path)
```



```
if self.path == '/viewAllDoctors':
    data=[]
    records = self.database.viewAllDoctors()
    print(records)
    data=records
    self.send_response(200)
    self.send_header('Content-type','text/html')
    self.end_headers()
    self.wfile.write(b"<html><head><title> Hospital's Portal </title></head>")
    self.wfile.write(b"<body>")
    self.wfile.write(b"<center><h1>Hospital's Portal</h1>")
    self.wfile.write(b"<hr>")
    self.wfile.write(b"<div> <a href='/'>Home</a>| \
                     <a href='/addPatient'>Add Patient</a>|\
                      <a href='/scheduleAppointment'>Schedule Appointment</a>|\
                      <a href='/viewAppointments'>View Appointments</a>|\
                      <a href='/dischargePatient'>Discharge Patient</a></div>\
                      <a href='/updatePatientDetails'>Update Patient Details</a></div>\
                      <a href='/viewAllDoctors'>View All Doctors</a></div>\
                      <a href='/viewRecords'>View Records</a></div>")
    self.wfile.write(b"<hr><h2>All Doctors</h2>")


    self.wfile.write(b"<table border=2> \
                        <tr><th> Doctor ID </th>\
                            <th> Doctor Name </th>\
                            <th> specialization </th</tr>")

    for row in data:
        self.wfile.write(b'<tr> <td>')
        self.wfile.write(str(row[0]).encode())
        self.wfile.write(b'</td><td>')
        self.wfile.write(str(row[1]).encode())
        self.wfile.write(b'</td><td>')
        self.wfile.write(str(row[2]).encode())
        self.wfile.write(b'</td></tr>')

    self.wfile.write(b"</center></body></html>")
    return
```



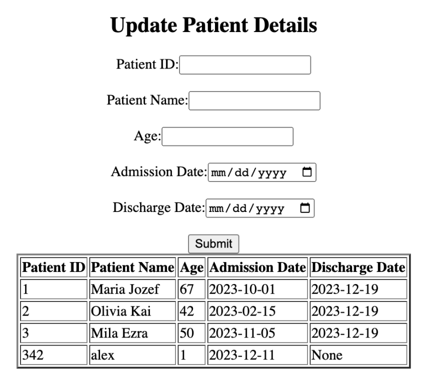
```
if self.path == '/viewAppointments':
    data=[]
    records = self.database.viewAppointments()
    print(records)
    data=records
    self.send_response(200)
    self.send_header('Content-type','text/html')
    self.end_headers()
    self.wfile.write(b"<html><head><title> Hospital's Portal </title></head>")
    self.wfile.write(b"<body>")
    self.wfile.write(b"<center><h1>Hospital's Portal</h1>")
    self.wfile.write(b"<hr>")
    self.wfile.write(b"<div> <a href='/'>Home</a>| \
                     <a href='/addPatient'>Add Patient</a>|\
                      <a href='/scheduleAppointment'>Schedule Appointment</a>|\
                      <a href='/viewAppointments'>View Appointments</a>|\
                      <a href='/dischargePatient'>Discharge Patient</a></div>\
                      <a href='/updatePatientDetails'>Update Patient Details</a></div>\
                      <a href='/viewAllDoctors'>View All Doctors</a></div>\
                      <a href='/viewRecords'>View Records</a></div>")

    self.wfile.write(b"<hr><h2>View Appointiments</h2>")

    self.wfile.write(b"<table border=2> \
                        <tr><th> Appointment ID </th>\
                            <th> Patient ID </th>\
                            <th> Doctor ID </th>\
                            <th> Appointment Date </th>\
                            <th> Appointment Time </th></tr>")
    for row in data:
        self.wfile.write(b' <tr> <td>')
        self.wfile.write(str(row[0]).encode())
        self.wfile.write(b'</td><td>')
        self.wfile.write(str(row[1]).encode())
        self.wfile.write(b'</td><td>')
        self.wfile.write(str(row[2]).encode())
        self.wfile.write(b'</td><td>')
        self.wfile.write(str(row[3]).encode())
        self.wfile.write(b'</td><td>')
        self.wfile.write(str(row[4]).encode())
        self.wfile.write(b'</td></tr>')

    self.wfile.write(b"</center></body></html>")
    return
```



Discharge Patient

Patient ID:

Patient ID	Patient Name	Age	Admission Date	Discharge Date
1	Maria Jozef	67	2023-10-01	2023-12-19
2	Olivia Kai	42	2023-02-15	2023-12-19
3	Mila Ezra	50	2023-11-05	2023-12-19
342	alex	1	2023-12-11	None



Update Patient Details

Patient ID:

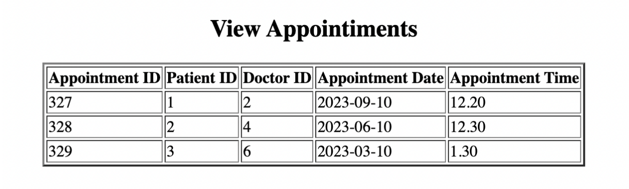
Patient Name:

Age:

Admission Date: mm/dd/yyyy

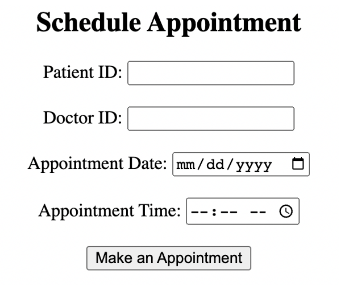
Discharge Date: mm/dd/yyyy

Patient ID	Patient Name	Age	Admission Date	Discharge Date
1	Maria Jozef	67	2023-10-01	2023-12-19
2	Olivia Kai	42	2023-02-15	2023-12-19
3	Mila Ezra	50	2023-11-05	2023-12-19
342	alex	1	2023-12-11	None



View Appointments

Appointment ID	Patient ID	Doctor ID	Appointment Date	Appointment Time
327	1	2	2023-09-10	12.20
328	2	4	2023-06-10	12.30
329	3	6	2023-03-10	1.30



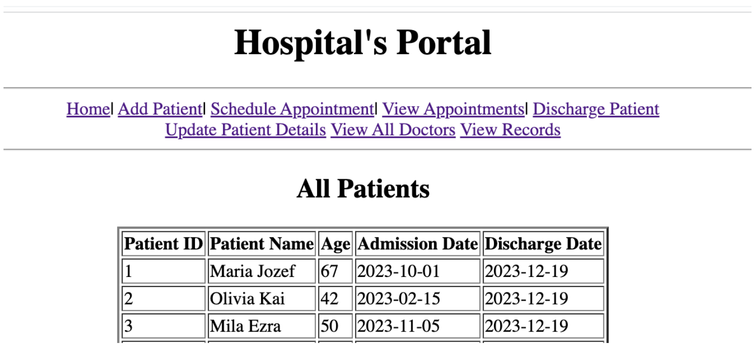
Schedule Appointment

Patient ID:

Doctor ID:

Appointment Date: mm/dd/yyyy

Appointment Time: --:-- --



Hospital's Portal

Home| Add Patient| Schedule Appointment| View Appointments| Discharge Patient
Update Patient Details View All Doctors View Records

All Patients

Patient ID	Patient Name	Age	Admission Date	Discharge Date
1	Maria Jozef	67	2023-10-01	2023-12-19
2	Olivia Kai	42	2023-02-15	2023-12-19
3	Mila Ezra	50	2023-11-05	2023-12-19