

Report

Introduction: This report is focused on the creation of a hospital portal website utilizing MySQL, a widely used relational database management system. And python, a high-level web developer. The hospital portal serves as a digital platform for you to add a new patient, schedule appointments, view appointments, and etc. MySQL is selected as the database system for its reliability, scalability, and adaptability in managing substantial amounts of medical data in a secure manner.

Database Design: The initial phase in developing the hospital portal involves designing the database schema. This design encompasses the definition of tables, their attributes, relationships, and constraints.

I started by using MYSQL to create the patient table, which needs to include patient_id, patient_name, age, admission_date, and discharge_date. In this table the primary key is patient_id.

```
4 • ○ CREATE TABLE patients (  
5     patient_id INT NOT NULL AUTO_INCREMENT,  
6     patient_name VARCHAR(45) NOT NULL,  
7     age INT NOT NULL,  
8     admission_date DATE,  
9     discharge_date DATE,  
10    PRIMARY KEY (patient_id),  
11    UNIQUE KEY unique_patient_name (patient_name)  
12 );
```

Then we have to create tables for doctors, appointments using the information needed for the table. After that we will add the necessary procedure and information we need which will look like this...

```

14 • CREATE TABLE Appointments (
15     appointment_id INT NOT NULL AUTO_INCREMENT,
16     patient_id INT NOT NULL,
17     doctor_id INT NOT NULL,
18     appointment_date DATE NOT NULL,
19     appointment_time DECIMAL(5,2) NOT NULL,
20     PRIMARY KEY (appointment_id)
21 );

24 • INSERT INTO patients (patient_name, age, admission_date, discharge_date)
25 VALUES
26     ('Maria Jozef', 67, '2023-10-01', '2023-10-07'),
27     ('John Smith', 45, '2023-09-15', '2023-09-20'),
28     ('Alice Johnson', 30, '2023-11-05', '2023-11-10');
29
30 DELIMITER //
31 • CREATE PROCEDURE ScheduleAppointment(IN patientID INT, IN doctorID INT, IN appDate DATE, IN appTime DECIMAL)
32 BEGIN
33     INSERT INTO appointments (patient_id, doctor_id, appointment_date, appointment_time)
34     VALUES (patientID, doctorID, appDate, appTime);
35 END //
36 DELIMITER ;
--

39 DELIMITER //
40 • CREATE PROCEDURE DischargePatient(IN patientID INT, IN disDate DATE)
41 BEGIN
42     UPDATE patients SET discharge_date = disDate WHERE patient_id = patientID;
43 END //
44 DELIMITER ;

46 • CREATE TABLE doctors (
47     doctor_id INT NOT NULL AUTO_INCREMENT,
48     doctor_name VARCHAR(45) NOT NULL,
49     specialization VARCHAR(45),
50     PRIMARY KEY (doctor_id)
51 );

53 • CREATE VIEW doctor_appointment_patient_view AS
54 SELECT
55     a.appointment_id,
56     a.appointment_date,
57     a.appointment_time,
58     p.patient_name,
59     p.age,
60     p.admission_date,
61     p.discharge_date,
62     d.doctor_name,
63     d.specialization
64 FROM appointments a
65 JOIN patients p ON a.patient_id = p.patient_id
66 JOIN doctors d ON a.doctor_id = d.doctor_id;

```

After that I have to do my portalDatabase using the information provided, finishing up any tables that were not done and fixing any mistakes and adding any lines that are necessary for it to run. Which will look like this...

```

import mysql.connector
from mysql.connector import Error

class Database():
    def __init__(self,
                  host="localhost",
                  port="3306",
                  database="hospital_portal",
                  user='root',
                  password='March.2021'):

        self.host = host
        self.port = port
        self.database = database
        self.user = user
        self.password = password
        self.connection = None
        self.cursor = None
        self.connect()

    def connect(self):
        try:
            self.connection = mysql.connector.connect(
                host=self.host,
                port=self.port,
                database=self.database,
                user=self.user,
                password=self.password)

            if self.connection.is_connected():
                return

        except Error as e:
            print("Error while connecting to MySQL", e)

    def addPatient(self, patient_name, age, admission_date, discharge_date):
        ''' Method to insert a new patient into the patients table '''
        try:
            if self.connection.is_connected():
                self.cursor = self.connection.cursor()
                query = "INSERT INTO patients (patient_name, age, admission_date, discharge_date) VALUES (%s, %s, %s, %s)"
                self.cursor.execute(query, (patient_name, age, admission_date, discharge_date))
                self.connection.commit()

        except Error as e:
            print("Error while adding patient:", e)

        finally:
            if self.cursor:
                self.cursor.close()

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

        except Error as e:
            print("Error while getting all patients:", e)

        finally:
            if self.cursor:
                self.cursor.close()

    def scheduleAppointment(self, patient_id, doctor_id, appointment_date, appointment_time):
        if self.connection.is_connected():
            self.cursor = self.connection.cursor()
            query = "INSERT INTO accounts (patient_id, doctor_id, appointment_date, appointment_time) VALUES (%s, %s, %s, %s)"
            values = (patient_id, doctor_id, appointment_date, appointment_time)
            self.cursor.execute(query, values)
            self.connection.commit()

        ''' Complete the method to Schedule Appointment'''
        pass

    def viewAppointments(self):
        if self.connection.is_connected():
            self.cursor = self.connection.cursor()
            query = "CALL viewAppointments(%s)"
            pa = (patient_id)
            self.cursor.execute(query, pa)
            results = self.cursor.fetchall()
            return results

        ''' Complete the method to call Appointments'''
        pass

    def dischargePatient(self, patient_id):
        if self.connection.is_connected():
            self.cursor = self.connection.cursor()
            query = "Discharge Patient WHERE patient_id = %s"
            params = (patient_id)
            self.cursor.execute(query, params)
            self.connection.commit()

        ''' Complete the method to discharge a patient'''
        pass

```

For the last step I took the information provided and added the necessary information asked for in the project and added them as asked then ran it.

```
from http.server import HTTPServer, BaseHTTPRequestHandler
from os import curdir, sep
from portalDatabase import Database

class HospitalPortalHandler(BaseHTTPRequestHandler):

    def __init__(self, *args):
        self.database = Database()
        BaseHTTPRequestHandler.__init__(self, *args)

    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)

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

                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='/viewAppointment'>View Appointment </a>|\
                    <a href='/dischargeDate'>Discharge Date</a></div>")
                self.wfile.write(b"<hr>")
                self.wfile.write(b"<h3>Patient have been added</h3>")
                self.wfile.write(b"<div><a href='/addPatient'>Add a New Patient</a></div>")
                self.wfile.write(b"</center></body></html>")

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

        return

    def do_GET(self):
        try:
            if self.path == '/':
                data=[]
                records = self.database.getAllPatient()
                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='/viewAppointment'>View Appointment</a>|\
                    <a href='/dischargeDate'>Discharge Date</a></div>")
                self.wfile.write(b"<hr><h2>All Patient</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
```

```

if self.path == '/addPatient':
    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='/viewAppointment'>View Appointment</a>|\
        <a href='/dischargeDate'>Discharge Date</a></div>")
    self.wfile.write(b"<hr><h2>Add New Patient</h2>")

    self.wfile.write(b"<form action='/addPatient' method='post'>")
    self.wfile.write(b"<label for='pname'>Patient Name:</label>\
        <input type='text' id='pname' name='pname'><br><br>\
        <label for='owner_ssn'>Age:</label>\
        <input type='Number' id='PatientAge' name='Patient_Age'><br><br>\
        <label for='admission_date'>Admission Date:</label>\
        <input type='date' id='admission_date' name='admission_data'><br><br>\
        <label for='discharge_date'>Discharge Date:</label>\
        <input type='date' id='discharge_date' name='discharge_data'><br><br>\
        <input type='submit' value='Submit'>\
        </form>")

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

if self.path == '/dischargeDate':
    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='/viewAppointment'>View Appointment</a>|\
        <a href='/dischargeDate'>Discharge Date</a></div>")
    self.wfile.write(b"<hr><h2>Discharge Date</h2>")
    self.wfile.write(b"<form action='/addPatient' method='post'>")
    self.wfile.write(b"<label for='pname'>Patient ID:</label>\
        <input type='text' id='pname' name='pname'><br><br>\
        <input type='submit' value='Submit'>\
        </form>")

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

if self.path == '/viewAppointment':
    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='/viewAppointment'>View Appointment</a>|\
        <a href='/dischargeDate'>Discharge Date</a></div>")
    self.wfile.write(b"<hr><h2>View Appointment</h2>")

    # Table for View Appointment
    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"</table></center>")

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

```

```

if self.path == '/viewAppointment':
    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='/viewAppointment'>View Appointment</a>|\
        <a href='/dischargeDate'>Discharge Date</a></div>")
    self.wfile.write(b"<hr><h2>View Appointment</h2>")

    # Table for View Appointment
    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())
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        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"</table></center>")

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

```

Website

Hospital's Portal

[Home](#) | [Add Patient](#) | [Schedule Appointment](#) | [View Appointment](#) | [Discharge Date](#)

All Patient

Patient ID	Patient Name	Age	Admission Date	Discharge Date
1	Maria Jozef	67	2023-10-01	2023-10-07
2	John Smith	45	2023-09-15	2023-09-20
3	Alice Johnson	30	2023-11-05	2023-11-10

Home

Patient ID, Patient Name, Patient Age, Admission Date, and Discharge Date.


Hospital's Portal


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Add New Patient

Patient Name:

Age:

Admission Date: 

Discharge Date: 

Add New Patient

Patient Name, Patient Age, Admission Date, and Discharge Date


Hospital's Portal


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Schedule Appointment

Patient ID:

Doctor ID:

Appointment Date: 

Appointment Time: 

Schedule Appointment

Patient ID, Doctor ID, Appointment Date, and Appointment Time

Hospital's Portal

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View Appointment

Appointment ID	Patient ID	Doctor ID	Appointment Date	Appointment Time
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View Appointment

Appointment ID, Patient ID, Doctor ID, Appointment Date, and Appointment Time

Hospital's Portal

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Discharge Date

Patient ID:

Discharge Date

Patient ID

<https://github.com/jehadprojects/Final.git>