import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.Statement;

public class HospitalManagementSystem {

private static final String DB\_URL = "jdbc:sqlite:hospital\_management.db";

public static void main(String[] args) {

try (Connection conn = DriverManager.getConnection(DB\_URL)) {

if (conn != null) {

createTables(conn);

// Sample data

addPatient(conn, "John Doe", 30, "Male", "1234567890");

addDoctor(conn, "Dr. Smith", "Cardiology", "0987654321");

addAppointment(conn, 1, 1, "2024-06-24", "10:00 AM");

// Display all records

displayPatients(conn);

displayDoctors(conn);

displayAppointments(conn);

}

} catch (Exception e) {

e.printStackTrace();

}

}

private static void createTables(Connection conn) throws Exception {

String createPatientsTable = "CREATE TABLE IF NOT EXISTS patients ("

+ "id INTEGER PRIMARY KEY AUTOINCREMENT,"

+ "name TEXT NOT NULL,"

+ "age INTEGER,"

+ "gender TEXT,"

+ "contact TEXT"

+ ")";

String createDoctorsTable = "CREATE TABLE IF NOT EXISTS doctors ("

+ "id INTEGER PRIMARY KEY AUTOINCREMENT,"

+ "name TEXT NOT NULL,"

+ "specialty TEXT,"

+ "contact TEXT"

+ ")";

String createAppointmentsTable = "CREATE TABLE IF NOT EXISTS appointments ("

+ "id INTEGER PRIMARY KEY AUTOINCREMENT,"

+ "patient\_id INTEGER,"

+ "doctor\_id INTEGER,"

+ "date TEXT,"

+ "time TEXT,"

+ "FOREIGN KEY(patient\_id) REFERENCES patients(id),"

+ "FOREIGN KEY(doctor\_id) REFERENCES doctors(id)"

+ ")";

try (Statement stmt = conn.createStatement()) {

stmt.execute(createPatientsTable);

stmt.execute(createDoctorsTable);

stmt.execute(createAppointmentsTable);

}

}

private static void addPatient(Connection conn, String name, int age, String gender, String contact) throws Exception {

String sql = "INSERT INTO patients (name, age, gender, contact) VALUES (?, ?, ?, ?)";

try (PreparedStatement pstmt = conn.prepareStatement(sql)) {

pstmt.setString(1, name);

pstmt.setInt(2, age);

pstmt.setString(3, gender);

pstmt.setString(4, contact);

pstmt.executeUpdate();

}

}

private static void addDoctor(Connection conn, String name, String specialty, String contact) throws Exception {

String sql = "INSERT INTO doctors (name, specialty, contact) VALUES (?, ?, ?)";

try (PreparedStatement pstmt = conn.prepareStatement(sql)) {

pstmt.setString(1, name);

pstmt.setString(2, specialty);

pstmt.setString(3, contact);

pstmt.executeUpdate();

}

}

private static void addAppointment(Connection conn, int patientId, int doctorId, String date, String time) throws Exception {

String sql = "INSERT INTO appointments (patient\_id, doctor\_id, date, time) VALUES (?, ?, ?, ?)";

try (PreparedStatement pstmt = conn.prepareStatement(sql)) {

pstmt.setInt(1, patientId);

pstmt.setInt(2, doctorId);

pstmt.setString(3, date);

pstmt.setString(4, time);

pstmt.executeUpdate();

}

}

private static void displayPatients(Connection conn) throws Exception {

String sql = "SELECT \* FROM patients";

try (Statement stmt = conn.createStatement();

ResultSet rs = stmt.executeQuery(sql)) {

while (rs.next()) {

System.out.println("Patient ID: " + rs.getInt("id"));

System.out.println("Name: " + rs.getString("name"));

System.out.println("Age: " + rs.getInt("age"));

System.out.println("Gender: " + rs.getString("gender"));

System.out.println("Contact: " + rs.getString("contact"));

System.out.println();

}

}

}

private static void displayDoctors(Connection conn) throws Exception {

String sql = "SELECT \* FROM doctors";

try (Statement stmt = conn.createStatement();

ResultSet rs = stmt.executeQuery(sql)) {

while (rs.next()) {

System.out.println("Doctor ID: " + rs.getInt("id"));

System.out.println("Name: " + rs.getString("name"));

System.out.println("Specialty: " + rs.getString("specialty"));

System.out.println("Contact: " + rs.getString("contact"));

System.out.println();

}

}

}

private static void displayAppointments(Connection conn) throws Exception {

String sql = "SELECT \* FROM appointments";

try (Statement stmt = conn.createStatement();

ResultSet rs = stmt.executeQuery(sql)) {

while (rs.next()) {

System.out.println("Appointment ID: " + rs.getInt("id"));

System.out.println("Patient ID: " + rs.getInt("patient\_id"));

System.out.println("Doctor ID: " + rs.getInt("doctor\_id"));

System.out.println("Date: " + rs.getString("date"));

System.out.println("Time: " + rs.getString("time"));

System.out.println();

}

}

}

}