*CORE JAVA PROJECT*

import java.util.\*;

class Doctor {

private String name;

private String specialization;

private List<Patient> patients;

public Doctor(String name, String specialization) {

this.name = name;

this.specialization = specialization;

this.patients = new ArrayList<>();

}

public String getName() {

return name;

}

public String getSpecialization() {

return specialization;

}

public List<Patient> getPatients() {

return patients;

}

public void addPatient(Patient patient) {

patients.add(patient);

}

}

class Patient {

private String name;

private int age;

private String gender;

private String contactNumber;

public Patient(String name, int age, String gender, String contactNumber) {

this.name = name;

this.age = age;

this.gender = gender;

this.contactNumber = contactNumber;

}

public String getName() {

return name;

}

public int getAge() {

return age;

}

public String getGender() {

return gender;

}

public String getContactNumber() {

return contactNumber;

}

}

class Hospital {

private List<Doctor> doctors;

public Hospital() {

this.doctors = new ArrayList<>();

}

public void addDoctor(Doctor doctor) {

doctors.add(doctor);

}

public List<Doctor> getDoctors() {

return doctors;

}

}

public class HospitalManagementApp {

private static Scanner scanner = new Scanner(System.in);

private static Hospital hospital = new Hospital();

public static void main(String[] args) {

while (true) {

displayMenu();

int choice = getUserChoice();

switch (choice) {

case 1:

bookAppointment();

break;

case 2:

displayPatientDetails();

break;

case 3:

displayDoctorDetails();

break;

case 4:

System.out.println("Thank you for using the Hospital Management App. Goodbye!");

System.exit(0);

}

}

}

private static void displayMenu() {

System.out.println("\*\*\*\*\*\*\*\*\*\* Hospital Management App \*\*\*\*\*\*\*\*\*\*");

System.out.println("1. Book an appointment");

System.out.println("2. Display patient details");

System.out.println("3. Display doctor details");

System.out.println("4. Exit");

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

}

private static int getUserChoice() {

System.out.print("Enter your choice: ");

return scanner.nextInt();

}

private static void bookAppointment() {

scanner.nextLine(); // Clear the input buffer

System.out.print("Enter patient name: ");

String name = scanner.nextLine();

System.out.print("Enter patient age: ");

int age = scanner.nextInt();

scanner.nextLine(); // Clear the input buffer

System.out.print("Enter patient gender: ");

String gender = scanner.nextLine();

System.out.print("Enter patient contact number: ");

String contactNumber = scanner.nextLine();

Patient patient = new Patient(name, age, gender, contactNumber);

System.out.println("\nAvailable doctors:");

displayDoctorDetails();

System.out.print("Enter doctor's name: ");

String doctorName = scanner.nextLine();

Doctor selectedDoctor = findDoctorByName(doctorName);

if (selectedDoctor != null) {

selectedDoctor.addPatient(patient);

System.out.println("Appointment booked successfully!");

} else {

System.out.println("Invalid doctor name. Appointment booking failed.");

}

}

private static void displayPatientDetails() {

System.out.println("\n--- Patient Details ---");

for (Doctor doctor : hospital.getDoctors()) {

List<Patient> patients = doctor.getPatients();

if (!patients.isEmpty()) {

System.out.println("\nDoctor: " + doctor.getName() + " (" + doctor.getSpecialization() + ")");

for (Patient patient : patients) {

System.out.println("Patient Name: " + patient.getName());

System.out.println("Age: " + patient.getAge());

System.out.println("Gender: " + patient.getGender());

System.out.println("Contact Number: " + patient.getContactNumber());

System.out.println("----------------------------------------");

}

}

}

System.out.println();

}

private static void displayDoctorDetails() {

System.out.println("\n--- Doctor Details ---");

for (Doctor doctor : hospital.getDoctors()) {

System.out.println("Doctor Name: " + doctor.getName());

System.out.println("Specialization: " + doctor.getSpecialization());

System.out.println("----------------------------------------");

}

System.out.println();

}

private static Doctor findDoctorByName(String name) {

for (Doctor doctor : hospital.getDoctors()) {

if (doctor.getName().equalsIgnoreCase(name)) {

return doctor;

}

}

return null;

}

}