Hospital Management System

The hotel management system that I have an idea to create is a basic example, that has features like:

1)Storage for information about patients

2)Ability to add or remove patients

3)Ability to print the information already existing in the hospital management system.

Class: Patient

Attributes:

- name: String
- age: int
- gender: String
- address: String
- phoneNumber: String
- medicalHistory: String

Class: Doctor

Attributes:

- name: String
- specialization: String
- phoneNumber: String
- email: String

Class: Appointment

Attributes:

- appointmentId: int
- patient: Patient
- doctor: Doctor
- date: String
- time: String

Class: Department

Attributes:

- name: String
- description: String
- head: Doctor
- staff: List<Doctor>

HMS Structure

We will need following classes for the software:

1. **Hospital**:

- Attributes: List of patients, list of doctors, list of appointments, list of departments, etc.

2. **Appointment**:

- Attributes: Appointment ID, patient ID, doctor ID, date and time, reason, status, etc.

3. **MedicalRecord**:

- Attributes: Patient ID, doctor ID, diagnosis, treatment, medications prescribed, test results, etc.

.

4. **Patient**:

- Attributes: ID, name, gender, date of birth, contact information, medical history, insurance details, etc.

Class Hospital

This class provides a list of patients, doctors and lists of departments and appointments. This class can be implemented the following way:

```
import java.util.ArrayList;

import java.util.List;


public class Hospital {

   private String name;

   private List<Patient> patients;

   private List<Doctor> doctors;

   private List<Appointment> appointments;

   private List<Department> departments;


   /

   public Hospital(String name) {

      this.name = name;

      this.patients = new ArrayList<>();

      this.doctors = new ArrayList<>();

      this.appointments = new ArrayList<>();

      this.departments = new ArrayList<>();

   }


   public String getName() {

      return name;

   }
```

```
public void setName(String name) {
   this.name = name;
}


public void addPatient(Patient patient) {
   patients.add(patient);
}


public void removePatient(Patient patient) {
   patients.remove(patient);
}


public void addDoctor(Doctor doctor) {
   doctors.add(doctor);
}

public void removeDoctor(Doctor doctor) {
   doctors.remove(doctor);
}


public void addAppointment(Appointment appointment) {
```

```
    appointments.add(appointment);

  public void removeAppointment(Appointment appointment) {
    appointments.remove(appointment);
  }


  public void addDepartment(Department department) {
    departments.add(department);
  }


  public void removeDepartment(Department department) {
    departments.remove(department);
  }

  /}
```

Appointment Class

The **`Appointment`** class contains following attributes:

5. **`appointmentId`**: Unique identifier for the appointment.
6. **`patientId`**: ID of the patient who scheduled the appointment.
7. **`doctorId`**: ID of the doctor with whom the appointment is scheduled.
8. **`dateTime`**: Date and time of the appointment.
9. **`reason`**: Reason for the appointment.
10. **`status`**: Indicates whether the appointment is confirmed or not.

```
import java.time.LocalDateTime;

public class Appointment {
   private int appointmentId;
   private int patientId;
   private int doctorId;
   private LocalDateTime dateTime;
   private String reason;
   private boolean status;

   public Appointment(int appointmentId, int patientId, int doctorId, LocalDateTime
dateTime, String reason) {
      this.appointmentId = appointmentId;
      this.patientId = patientId;
      this.doctorId = doctorId;
      this.dateTime = dateTime;
      this.reason = reason;
      this.status = false;
   }


   public int getAppointmentId() {
      return appointmentId;
   }

   public void setAppointmentId(int appointmentId) {
      this.appointmentId = appointmentId;
   }

   public int getPatientId() {
      return patientId;
   }

   public void setPatientId(int patientId) {
      this.patientId = patientId;
   }
```

```
    public int getDoctorId() {
        return doctorId;
    }

    public void setDoctorId(int doctorId) {
        this.doctorId = doctorId;
    }

    public LocalDateTime getDateTime() {
        return dateTime;
    }

    public void setDateTime(LocalDateTime dateTime) {
        this.dateTime = dateTime;
    }

    public String getReason() {
        return reason;
    }

    public void setReason(String reason) {
        this.reason = reason;
    }

    public boolean isConfirmed() {
        return status;
    }

    public void confirmAppointment() {
        this.status = true;
    }

    public void cancelAppointment() {
        this.status = false;
    }
}
```

Medical Record Class

The **`MedicalRecord`** contains following attributes:

11. **`patientId`**: ID of the patient associated with the medical record.
12. **`doctorId`**: ID of the doctor who created or updated the medical record.
13. **`diagnosis`**: Diagnosis or medical condition of the patient.
14. **`medications`**: List of medications prescribed to the patient.
15. **`testResults`**: List of test results associated with the patient's medical condition.

```
import java.util.List;

public class MedicalRecord {
   private int patientId;
   private int doctorId;
   private String diagnosis;
   private List<String> medications;
   private List<String> testResults;


   public MedicalRecord(int patientId, int doctorId, String diagnosis, List<String>
medications, List<String> testResults) {
      this.patientId = patientId;
      this.doctorId = doctorId;
      this.diagnosis = diagnosis;
      this.medications = medications;
      this.testResults = testResults;
   }


   public int getPatientId() {
      return patientId;
   }

   public void setPatientId(int patientId) {
```

```
        this.patientId = patientId;
    }

    public int getDoctorId() {
        return doctorId;
    }

    public void setDoctorId(int doctorId) {
        this.doctorId = doctorId;
    }

    public String getDiagnosis() {
        return diagnosis;
    }

    public void setDiagnosis(String diagnosis) {
        this.diagnosis = diagnosis;
    }

    public List<String> getMedications() {
        return medications;
    }

    public void setMedications(List<String> medications) {
        this.medications = medications;
    }

    public List<String> getTestResults() {
        return testResults;
    }

    public void setTestResults(List<String> testResults) {
        this.testResults = testResults;
    }
}
```

Patient Class

The **`Patient`** class contains following attributes:

16. **`patientId`**: Unique identifier for the patient.
17. **`name`**: Name of the patient.
18. **`gender`**: Gender of the patient.
19. **`dateOfBirth`**: Date of birth of the patient.
20. **`contactInformation`**: Contact information of the patient.
21. **`medicalHistory`**: Medical history of the patient.
22. **`insuranceDetails`**: Insurance details of the patient.

```
import java.util.Date;

public class Patient {
    private int patientId;
    private String name;
    private String gender;
    private Date dateOfBirth;
    private String contactInformation;
    private String medicalHistory;
    private String insuranceDetails;


    public Patient(int patientId, String name, String gender, Date dateOfBirth, String
contactInformation, String medicalHistory, String insuranceDetails) {
        this.patientId = patientId;
        this.name = name;
        this.gender = gender;
        this.dateOfBirth = dateOfBirth;
        this.contactInformation = contactInformation;
        this.medicalHistory = medicalHistory;
        this.insuranceDetails = insuranceDetails;
    }


    public int getPatientId() {
        return patientId;
```

```
}

public void setPatientId(int patientId) {
    this.patientId = patientId;
}

public String getName() {
    return name;
}

public void setName(String name) {
    this.name = name;
}

public String getGender() {
    return gender;
}

public void setGender(String gender) {
    this.gender = gender;
}

public Date getDateOfBirth() {
    return dateOfBirth;
}

public void setDateOfBirth(Date dateOfBirth) {
    this.dateOfBirth = dateOfBirth;
}

public String getContactInformation() {
    return contactInformation;
}

public void setContactInformation(String contactInformation) {
    this.contactInformation = contactInformation;
}

public String getMedicalHistory() {
```

```
        return medicalHistory;
    }

    public void setMedicalHistory(String medicalHistory) {
        this.medicalHistory = medicalHistory;
    }

    public String getInsuranceDetails() {
        return insuranceDetails;
    }

    public void setInsuranceDetails(String insuranceDetails) {
        this.insuranceDetails = insuranceDetails;
    }
}
```