**Hospital Management System**

**Team Members:**

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**Introduction**:

A Hospital Management System (HMS) is a comprehensive, integrated information system designed to manage the administrative, financial, and clinical aspects of a hospital. By streamlining operations, enhancing efficiency, and improving the quality of patient care, an HMS serves as the backbone of a modern healthcare facility. It consolidates critical processes such as patient registration, appointment scheduling, billing, medical record management, and inventory control into a unified platform. This digital transformation not only ensures compliance with healthcare regulations but also facilitates real-time data access and analytics, empowering healthcare providers to make informed decisions. Ultimately, an HMS aims to elevate the patient experience by reducing wait times, minimizing errors, and ensuring timely and effective treatment, thereby fostering a more responsive and patient-centric healthcare environment.

**Entities and Attributes:**

1. **Hospital:**
   * **Hospital\_ID (Primary Key)**
   * **Phone\_No**
   * **Hospital\_Name**
   * **Hospital\_Address**
2. **Doctor:**
   * **Doctor\_ID (Primary Key)**
   * **Gender**
   * **Age**
   * **Name**
   * **Position**
   * **Phone\_Number**
   * **Hospital\_ID (Foreign Key referencing Hospital)**
   * **dep\_id (Foreign Key referencing Department)**
3. **Nurse:**
   * **Nurse\_ID (Primary Key)**
   * **Name**
   * **Gender**
   * **Age**
   * **Hospital\_ID (Foreign Key referencing Hospital)**
4. **Department:**
   * **dep\_id (Primary Key)**
   * **dep\_name**
   * **head**
   * **staff\_no**
5. **Patient:**
   * **patient\_id (Primary Key, also a Foreign Key referencing USERS)**
   * **patient\_name**
   * **patient\_age**
   * **patient\_gender**
   * **patient\_address**
   * **patient\_phone**
6. **Outpatient:**
   * **patient\_id (Primary Key, Foreign Key referencing Patient)**
   * **checkback\_date**
7. **Inpatient:**
   * **patient\_id (Primary Key, Foreign Key referencing Patient)**
   * **date\_admission**
   * **date\_discharge**
   * **room\_no (Foreign Key referencing Room)**
8. **Medication:**
   * **med\_id (Primary Key)**
   * **name**
   * **brand**
   * **quantity**
   * **price**
   * **patient\_id (Foreign Key referencing Patient)**
9. **Room:**
   * **room\_no (Primary Key)**
   * **room\_type**
   * **room\_status**
10. **Appointment:**
    * **app\_id (Primary Key)**
    * **app\_dr\_id (Foreign Key referencing Doctor)**
    * **app\_date**
    * **patient\_id (Foreign Key referencing Patient)**
    * **app\_time**
    * **notes**
11. **USERS:**
    * **id (Primary Key)**
    * **user**
    * **password**
    * **isadmin**

**Relationships between entities :**

1. **Hospital - Doctor: One-to-Many**
   * **A hospital can have multiple doctors, but each doctor is associated with one and only one hospital.**
   * **Relationship: Hospital(Hospital\_ID) 1 <--> N Doctor(Hospital\_ID)**
2. **Hospital - Nurse: One-to-Many**
   * **A hospital can have multiple nurses, but each nurse is associated with one and only one hospital.**
   * **Relationship: Hospital(Hospital\_ID) 1 <--> N Nurse(Hospital\_ID)**
3. **Department - Doctor: One-to-Many**
   * **A department can have multiple doctors, but each doctor is associated with one and only one department.**
   * **Relationship: Department(dep\_id) 1 <--> N Doctor(dep\_id)**
4. **Doctor - Appointment: One-to-Many**
   * **A doctor can have multiple appointments, but each appointment is associated with one and only one doctor.**
   * **Relationship: Doctor(Doctor\_ID) 1 <--> N Appointment(app\_dr\_id)**
5. **Patient - Appointment: One-to-Many**
   * **A patient can have multiple appointments, but each appointment is associated with one and only one patient.**
   * **Relationship: Patient(patient\_id) 1 <--> N Appointment(patient\_id)**
6. **Patient - Outpatient: One-to-One**
   * **Each patient can have only one outpatient record, and each outpatient record is associated with one and only one patient.**
   * **Relationship: Patient(patient\_id) 1 <--> 1 Outpatient(patient\_id)**
7. **Patient - Inpatient: One-to-One**
   * **Each patient can have only one inpatient record, and each inpatient record is associated with one and only one patient.**
   * **Relationship: Patient(patient\_id) 1 <--> 1 Inpatient(patient\_id)**
8. **Patient - Medication: One-to-Many**
   * **A patient can have multiple medication records, but each medication record is associated with one and only one patient.**
   * **Relationship: Patient(patient\_id) 1 <--> N Medication(patient\_id)**

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**Main panel:**

**A screenshot of a computer

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**A screenshot of a computer error

Description automatically generatedA screenshot of a computer screen

Description automatically generatedA screenshot of a computer screen

Description automatically generatedAdd Doctor:**

**A screenshot of a computer error

Description automatically generatedA screenshot of a computer

Description automatically generatedA screenshot of a computer error

Description automatically generatedAdd patient:**

**A screenshot of a computer error

Description automatically generatedA screenshot of a computer error message

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**A screenshot of a chat

Description automatically generatedView Patient:**

**A screenshot of a computer error message

Description automatically generatedA screenshot of a computer screen

Description automatically generatedSchedule appointment:**

**A screenshot of a computer screen

Description automatically generated A screenshot of a computer error

Description automatically generated**

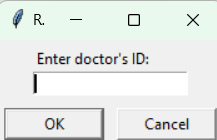
**View appointments:**

A screenshot of a computer

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**Remove doctor or patient:**

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Note: when the either the patient or the doctor removed the Schedule appointment is also removed from the database.