

MySQL PROJECT ON HOSPITAL_MANAGEMENT



PRESENTED BY HARSHIT GUPTA

Introduction

The **Hospital Management System (HMS)** project is developed using SQL to effectively manage and organize critical information within a healthcare facility. This system will encompass various entities, including patients, doctors, nurses, departments, wards, appointments, and medical records. By leveraging SQL databases, the HMS aims to streamline data management, improve the accuracy of information retrieval, and enhance the overall efficiency of hospital operations.



Patient	Doctor	Department
Patient_ID	Doctor_ID	DepartmentID
Name	Name	DepartmentName
Date_of_Birth	Specialization	
Gender	Contact_Info	
Address		
Contact_Number		
Nurse	Ward	Appointment
Nurse_ID	Ward_ID	Appointment_ID
Name	Ward_Name	Patient_ID
DepartmentId	Capacity	Doctor_ID
Contact_Info	Location	DateandTime
MedicalRecord		
Record_ID		
Patient_ID		
Doctor_ID		
Date_of_Visit		
Diagnosis		
Treatment		

TABLE

1. Retrieve the names and specialties of all doctors.

```
SELECT NAME,SPECIALIZATION  
FROM DOCTOR;
```

NAME	SPECIALIZATION
Dr. John Johnson	Cardiology
Dr. Emily Brown	Pediatrics
Dr. Daniel Lee	Orthopedics
Dr. Sarah Kim	Dermatology
Dr. David Clark	General Medicine



2. Retrieve the names and genders of all patients aged

```
SELECT NAME,GENDER  
FROM PATIENT  
WHERE DATEDIFF(CURDATE(),DATE_OF_BIRTH)>=30;
```

NAME	GENDER
John Doe	Male
Jane Smith	Female
Michael Brown	Male
Emily Davis	Female
Daniel Garcia	Male
Laura Wilson	Female



3. Retrieve the names of patients treated by Dr. John Johnson.

```
SELECT P.NAME,D.NAME  
FROM PATIENT P INNER JOIN MEDICALRECORD M  
ON P.PATIENT_ID=M.PATIENT_ID  
INNER JOIN DOCTOR  
D ON M.DOCTOR_ID = D.DOCTOR_ID  
WHERE D.NAME="DR. JOHN JOHNSON";
```

+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
	N	A	M	E			N	A	M	E										
+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
	J	o	h	n		D	o	e			D	r	.		J	o	h	n		J
+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+



4. Retrieve the names of doctors who specialize in Pediatrics, ordered alphabetically by name.

```
SELECT NAME,SPECIALIZATION
FROM DOCTOR
WHERE SPECIALIZATION="PEDIATRICS"
ORDER BY NAME;
```

NAME	SPECIALIZATION
Dr. Emily Brown	Pediatrics
Dr. James Thompson	Pediatrics
Dr. Olivia Green	Pediatrics
Dr. Sophia Williams	Pediatrics



5. Retrieve the total count of patients treated by each doctor.

```
SELECT D.NAME, COUNT(*) AS TOTAL_PATIENTS
FROM DOCTOR D
INNER JOIN
MEDICALRECORD M
ON D.DOCTOR_ID = M.DOCTOR_ID
GROUP BY D.NAME;
```

NAME	TOTAL_PATIENTS
Dr. John Johnson	1
Dr. Emily Brown	1
Dr. Daniel Lee	1
Dr. Sarah Kim	1
Dr. David Clark	1



6. Retrieve the average age of patients, grouped by gender.

```
SELECT GENDER,  
AVG(DATEDIFF(CURDATE(),DATE  
AS AVG_AGE  
FROM PATIENT  
GROUP BY GENDER;
```

	GENDER	
	AVG_AGE	
	Male	
	36.91233333	
	Female	
	39.63013333	



7. Retrieve the names of patients and their corresponding doctors, sorted by patient name.

```
SELECT P.NAME,D.NAME
FROM PATIENT P INNER JOIN MEDICALRECORD M
ON P.PATIENT_ID=M.PATIENT_ID
INNER JOIN DOCTOR
D ON M.DOCTOR_ID = D.DOCTOR_ID
ORDER BY P.NAME;
```

NAME	NAME
Daniel Garcia	Dr. David Clark
Emily Davis	Dr. Sarah Kim
Jane Smith	Dr. Emily Brown
John Doe	Dr. John Johnson
Michael Brown	Dr. Daniel Lee



8. Retrieve the names of doctors who have not been assigned any patients.

```
SELECT D.NAME  
FROM DOCTOR D  
LEFT JOIN MEDICALRECORD M  
ON  
D.DOCTOR_ID=M.DOCTOR_ID WHERE  
M.DOCTOR_ID IS NULL;
```

+	-----	+
	NAME	
+	-----	+
	Dr. Olivia Green	
	Dr. Sophia Williams	
	Dr. James Thompson	
+	-----	+



9. Retrieve the names of patients who have been treated by more than one doctor.

```
SELECT P.NAME AS PATIENT_NAME,  
COUNT(M.PATIENT_ID) AS CNT FROM  
INNER JOIN  
MEDICALRECORD M  
ON P.PATIENT_ID = M.PATIENT_ID  
GROUP BY M.PATIENT_ID HAVING C
```

PATIENT_NAME	PATIENT_ID
John Doe	1
Jane Smith	2
Michael Brown	3



10. Retrieve the names of doctors and patients along with the date they were assigned to each other (assuming there's a "DateAssigned" column in the DoctorPatient table).

```
SELECT P.NAME AS PATIENT_NAME,D.NAME AS DOCTOR_NAME,  
M.DATE_OF_VISIT FROM PATIENT P  
INNER JOIN  
MEDICALRECORD M ON P.PATIENT_ID = M.PATIENT_ID  
INNER JOIN  
DOCTOR D ON M.DOCTOR_ID = D.DOCTOR_ID;
```

PATIENT_NAME	DOCTOR_NAME	DATE_OF_VISIT
John Doe	Dr. John Johnson	2024-10-25
John Doe	Dr. Olivia Green	2024-10-28
Jane Smith	Dr. Emily Brown	2024-10-26
Jane Smith	Dr. Sophia Williams	2024-10-28
Michael Brown	Dr. Daniel Lee	2024-10-26
Michael Brown	Dr. James Thompson	2024-10-28
Emily Davis	Dr. Sarah Kim	2024-10-27
Daniel Garcia	Dr. David Clark	2024-10-27



conclusion

In this presentation, we explored the entity-relationship (ER) diagram and database schema for a hospital management system. We identified various entities such as patients, doctors, departments, nurses, wards, appointments, and medical records, along with their respective attributes. Additionally, we established relationships between these entities, including primary and foreign key constraints to maintain data integrity. Furthermore, we executed several SQL queries to retrieve meaningful insights from the database. These queries ranged from fetching doctor specialties to obtaining patient demographics based on age criteria. Through these queries, we demonstrated the practical use of the database in extracting valuable information for hospital management and patient care. In conclusion, the hospital management system presented here showcases the importance of effective data modeling and database management in healthcare settings. By accurately representing the relationships between different entities and querying the database intelligently, hospitals can streamline their operations, enhance patient care, and improve overall efficiency.

