

Introduction

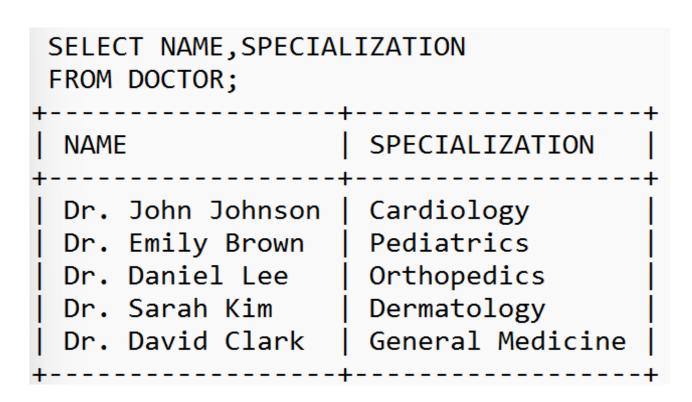
The Hospital Management System (HMS) project is developed using SQL to effectively manage and organize critical information within a healthcare facility. This system will encompass various entities, including patients, doctors, nurses, departments, wards, appointments, and medical records. By leveraging 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 Name Date_of_Birth Gender Address Contact_Number	Doctor_ID Name Specialization Contact_Info	DepartmentID DepartmentName
Nurse	Ward	Appointment
Nurse_ID Name DepartmentId Contact_Info	Ward_ID Ward_Name Capacity Location	Appointment_ID Patient_ID Doctor_ID DateandTime
+	MedicalRecord	
	Record_ID Patient_ID Doctor_ID Date_of_Visit Diagnosis Treatment	

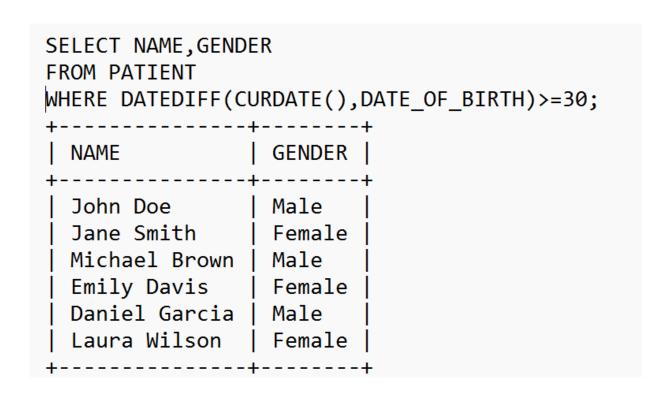
TABLE

1. Retrieve the names and specialties of all doctors.





2. Retrieve the names and genders of all patients aged



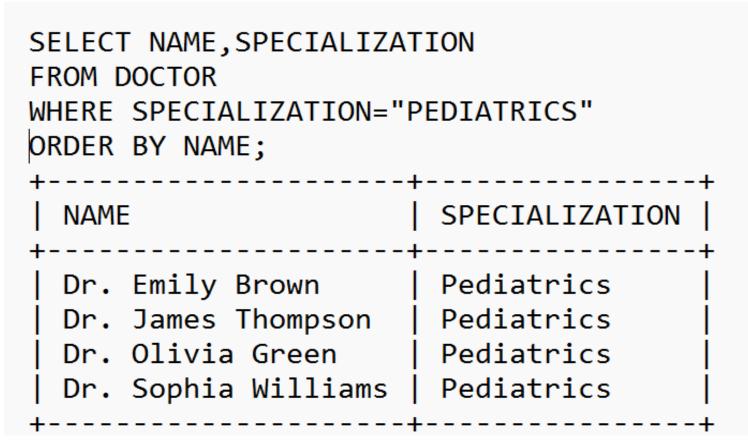


3. Retrieve the names of patients treated by Dr. John Johnson.

```
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";
 NAME
          NAME
John Doe | Dr. John Johnson |
```



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





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

SELECT D.NAME, COUNT FROM DOCTOR D INNER JOIN MEDICALRECORD M ON D.DOCTOR_ID = M. GROUP BY D.NAME;	_
NAME	TOTAL_PATIENTS
Dr. John Johnson Dr. Emily Brown Dr. Daniel Lee Dr. Sarah Kim Dr. David Clark	1 1 1 1 1 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
         39.63013333
  Female
```



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

ON P.PATIENT_ID=NINNER JOIN DOCTORD ON M.DOCTOR_IDORDER BY P.NAME;	NNER JOIN MEDICALRE M.PATIENT_ID R	
NAME	NAME	į
Daniel Garcia Emily Davis Jane Smith John Doe	Dr. David Clark	



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 FRO INNER JOIN MEDICALRECORD M ON P.PATIENT_ID = M.PATIENT_ID GROUP BY M.PATIENT_ID HAVING C PATIENT_NAME | PATIENT_ID John Doe Jane Smith Michael Brown



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 John Doe Jane Smith Jane Smith Michael Brown Michael Brown	Dr. John Johnson Dr. Olivia Green Dr. Emily Brown Dr. Sophia Williams Dr. Daniel Lee Dr. James Thompson Dr. Sarah Kim	2024-10-25 2024-10-28 2024-10-26		



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.

