Database Project

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**Database Management Systems**

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**Introduction**

As the intricacy of medical services, treatments, and patient care continues to rise, the demand for a centralized system that enables seamless data access becomes increasingly critical. This necessity is particularly pronounced in sophisticated healthcare facilities, which require a robust data management system to efficiently meet their broad spectrum of operational needs. Within this framework, databases emerge as fundamental components, serving as the cornerstone for a myriad of vital functions within the healthcare sector. These functions include, but are not limited to, the administration of medications and therapies, the maintenance of medical histories, and the management of patient records. A well-integrated database not only enhances a hospital's administrative efficiency but also plays a significant role in elevating the quality of patient care delivered. Crucially, these databases play an indispensable role in safeguarding the confidentiality and integrity of patient data. This is achieved through the implementation of stringent access controls and sophisticated encryption methods designed to protect sensitive information from unauthorized access and breaches. The implications of such security measures extend beyond mere data protection, fostering a trust-based relationship between patients and healthcare providers. Recognizing the pivotal role that hospital databases play in the modern landscape of healthcare administration, this project seeks to conduct an in-depth investigation into the specific needs, design philosophies, and features that are essential for the development and effective implementation of a state-of-the-art hospital database system. This system is envisioned to centralize patient information, thereby facilitating more coordinated care, supporting ongoing research, and driving quality improvements across various healthcare domains. Furthermore, it aims to uphold the highest standards of data security and privacy. The applications of this comprehensive database system are diverse, extending across various departments within a hospital setting. These include patient management, medical treatment and diagnostics, pharmacy operations, and administrative monitoring and evaluation. By integrating these diverse functions, the database system contributes significantly to the provision of more personalized, efficient, and effective patient care.

**Database Requirements**

The following database is designed to manage and store comprehensive information about various aspects and operations of a specific hospital. It grants the database administrator full privileges for data manipulation, including insertion, updating, and deletion. This role is pivotal in monitoring hospital activities and enforcing compliance with established protocols. The Hospital Management Database is precisely tailored to meet these challenges head-on. The staff represents all employees working within the hospital. This includes both medical and administrative staff. Staff members are categorized into doctors and secretaries. Each staff member's Social Security Number (SSN) is a unique identifier. The First Name and Last Name fields contain the first and last names of the staff member, respectively. The staff gender  (male, female). The birthday field records the patient's date of birth (day, month, and age). A staff member's work history is recorded in terms of their years of experience. Email addresses are unique for each staff member. The phone number field captures the contact number for each staff member. The department field specifies the department to which the staff member belongs (e.g., cardiology, pediatrics, administration, etc.). The salary field represents the annual salary of the staff member in US dollars. Staff might engage in certain training programs over time to enhance their professionalism and ensure consistency in their roles within the hospital. Training programs play a crucial role in ensuring that staff members are up-to-date with the latest medical practices and administrative procedures. The training ID serves as a unique identifier for each training program. The course name specifies the name or title of the training program. The certification status indicates whether a staff member has successfully completed the training program and obtained certification. It can have values such as "completed," "in progress," or "not started." The completion date records the date when a staff member completed the training program and obtained certification. Doctors are a specialized category of staff actively involved in interactions within the hospital, including appointments, consultations, and medical procedures; they are responsible for diagnosing and treating patients by assigning rooms for checkups or treatments. Each doctor has a unique ID. Specialty denotes the medical specialization of the doctor (e.g., cardiologist, surgeon). Secretaries are responsible for administrative tasks, interactions, involvement, and appointment scheduling. Each secretary has a unique ID. Interactions encompass various activities within the hospital, including appointments, consultations, and interactions between staff and patients. Each interaction is identified by an ID. The date and time fields capture the date and time of the interaction. The description and outcome fields provide details about the interaction's description and result. The Description field in the interaction record provides a platform for healthcare providers to capture detailed notes and observations about the interaction. For example: Tracking patient progress over time, including changes in symptoms, responses to treatment, and overall health status. Recording important conversations or instructions provided to the patient. The outcome field of an interaction record provides a comprehensive description of the result or outcome of the interaction. It includes a range of possibilities, such as: Consultations: The outcome could be a diagnosis, a treatment plan, or a referral to a specialist. For surgeries, the outcome might describe the success of the surgical procedure, any complications encountered, or the need for post-operative care. For examinations, the outcome could include findings from the examination, recommendations for further tests, or a determination that the patient is in good health. For Appointments: The outcome may indicate whether the patient attended the appointment, was rescheduled, or canceled. It could also note any specific instructions given during the appointment. For emergency cases, the outcome may detail the response to the emergency, the stabilization of the patient, and any immediate treatments administered. The Outcome field should also allow for free-text descriptions, ensuring that healthcare providers can document specific details, observations, or instructions related to the interaction's outcome. Relatively, appointments taken by patients scheduled by secretaries are a critical component of the hospital's operations, facilitating the scheduling of patient visits, consultations, examinations, and various medical procedures. Each appointment is uniquely identified by an appointment ID. Appointments are scheduled for specific dates and times. Patients of all ages receive medical services at the hospital. Each patient has a unique ID. They also include  patient's first and last names, phone number, and date of birth. The patient's address is recorded with separate fields for city, street, and building. Medical records for patients serve as a fundamental component of the hospital's database, encompassing comprehensive files that contain a patient's complete medical history, including diagnoses, treatments, and test results. The record number attribute functions as a unique identifier for each medical record. These medical records include patient diagnoses and treatment plans. Patient diagnoses are essential components of a patient's medical record, providing detailed information about the patient's health condition. It includes an ID for each patient's diagnosis. Moreover, prognosis captures the expected course and outcome of the patient's health condition. It provides insights into the patient's future health outlook based on the diagnosis. It also includes the date when the diagnosis was made and the results (provides details about the results of diagnostic tests and procedures that contributed to the diagnosis). Thus, treatment plans outline the specific medical interventions and procedures prescribed for a patient based on their diagnosis. It includes the treatment ID, date (start, end), and procedures. The procedure describes the medical procedures and interventions recommended for the patient's treatment. It provides a clear plan of action for healthcare providers. The patient might undergo medical tests required by the doctor. Medical tests are crucial within the hospital's operations, as they represent various diagnostic procedures conducted on patients. These tests play a significant role in diagnosing medical conditions and determining appropriate treatment plans. The test ID serves as a unique identifier for each medical test. The medical test name specifies the official name or title of the medical test. The description provides additional detailed information about the medical test. It includes details such as the methodology used, the purpose of the test, any special instructions for patients, and other relevant information. The test results therefore show the outcome of the tests, described by an ID, and the outcome. The outcome captures the result or finding of the medical test. It provides information about the patient's health status as determined by the test. Certain patients may be covered by insurance. Insurance records are essential components of patient information, detailing the insurance coverage held by individual patients. They play a vital role in facilitating payment and reimbursement for healthcare services. Each insurance policy is identified by an ID. The policy number attribute represents the specific policy number associated with the insurance coverage. The provider specifies the insurance provider or company that offers the insurance coverage. The coverage details attribute contains comprehensive information about the extent of coverage provided by the insurance policy. It includes details such as coverage limits, covered medical services, copayment requirements, and any other relevant coverage terms. Patients have the option to provide feedback on the services they received in the hospital. The feedback includes a unique ID, the date of submitting the feedback, and other comments. Comments allow patients to provide additional written feedback and comments regarding their experience. Hospital rooms are organized to support various medical activities and ensure patient comfort and safety. The room number attribute serves as a unique identifier for each room in the hospital, preventing any ambiguity or duplication. The room type specifies the room's purpose and function within the hospital. It includes categories such as examination, operating theater, patient room, laboratory, and more. The capacity indicates the maximum number of occupants allowed in the room at any given time. The location provides comprehensive information about the room's physical location within the hospital. It is deescribed by the floor number only. The status attribute reflects the current availability and occupancy status of the room. It can have values like vacant, occupied, under maintenance, or other relevant statuses. Maintenance plays a vital role in ensuring the smooth operation of a hospital's facilities and equipment. They are instrumental in tracking and documenting the maintenance activities performed, thereby ensuring that all hospital resources remain in optimal condition. They are identified by a unique ID. The maintenance type specifies the nature of the maintenance performed. It can include categories such as routine, emergency, preventive, corrective, or other relevant types. The date records the specific date when maintenance activities were conducted. Maintenance details provide a comprehensive description of the maintenance activities carried out. It includes information on what was done during the maintenance, any issues identified and addressed, the parts replaced or repaired, and any other relevant details. A single pharmacy of name “Hospital Pharmacy” exists in the hospital where patients can access it, as it is responsible for storing and dispensing medicines to patients. It plays a vital role in ensuring that patients receive the prescribed medications in a timely and accurate manner. It is identified by its name. The location attribute specifies the physical location of the pharmacy within the hospital. The operating hours indicate the opening and closing times of the pharmacy (hours and minutes). Accordingly, medicines that might be required by treatment plans in the pharmacy play a crucial role in treating patients and managing their medical conditions. Medicine ID serves as a unique identifier for each medicine. The medicine’s name specifies the official name or title of the medicine. This name provides a clear reference to the specific medication. Its form describes the physical form of the medicine. It indicates how the medicine is administered, whether it's in the form of tablets, liquid, capsules, or other forms. The description provides detailed information about how and for what the medicine is used. It includes information about the medicine's therapeutic effects, recommended dosages, potential side effects, and any specific patient instructions. The expiration date indicates the date until which the medicine remains effective and safe for use (month, year). The price represents the cost of the medicine in US dollars. The hospital requires equipment that represents the various medical and non-medical equipment required by the hospital to support its operations. Equipment is essential for patient care, diagnosis, treatment, and the overall functioning of the hospital. A certain item is identified by an ID. It includes the name of the item, category (such as medical, diagnostic, or administrative), manufacturer (name of company), and expiration date. Financial records are an integral part of the hospital's administrative operations. They track and cover various financial transactions, including staff salaries, maintenance costs, and equipment expenses. The record ID serves as a unique identifier for each financial record. The amount represents the financial value associated with the transaction (in US dollars). The type categorizes the financial transaction into specific types, such as staff salaries, maintenance costs, or equipment expenses. The database should also save the date to record when the financial transaction occurred.

This database is integral to the hospital’s operations, facilitating efficient management of staff, patient care, room allocation, appointment scheduling, medical record keeping, and pharmacy operations. It will be instrumental in generating queries for user applications, enhancing service delivery, and ensuring operational efficiency.

**ER Model:**

Submitted on separate document.

**Document Name:**

ERDiagramUpdated

**Relational Model**

Staff (SSN, St\_FirstName, St\_LastName, Staff\_Birthday, Staff\_Gender, Work\_History, Email, St\_PhoneNumber, Department, Salary)

Doctor (Doctor-ID , SSN, Specialty)

Secretary (Secretary-ID , SSN)

Financial\_Records(Record\_ID, Amount, Type, Date)

Equipment(Equipment\_ID, Name, Category, Manufacturer,Expiry\_Date)

Training(Training\_ID,Course\_Name, Certification\_Status, Completion\_Date)

Patient(Patient-ID, Patient\_Gender, P\_FirstName, P\_LastName, P\_PhoneNumber, P\_Birthday, City, Street, Building)

Interactions (Interaction\_Location,Interaction\_ Date,Interaction\_ Time, #Doctor-ID, #Secretary-ID, #Patient-ID (NOT NULL), Interaction\_Outcome, Interaction\_Description)

Room (Room\_Number, Room-Type, Capacity, Room\_Location, Status)

Appointment (Appointmnet-ID, Appointmnet\_Date, Appointment\_Time, #Secretary-ID, #Patient-ID (NOT NULL))

Maintenance(Maintenance\_ID, Maintenance\_Type, Maintenance\_Data, Maintenance\_Details)

Feedback(Feedback\_ID, Feedback\_Data, Rating, Comments, #Patient-ID (NOT NULL))

Medical\_Test(Test\_ID, Test\_Name, Description)

Test\_Result(Result\_ID, #Test\_ID, Result\_Outcome)

Insurance(Insurance\_ID, Policy\_Number, Provider, Coverage\_Details, #Patient\_ID)

Medical\_Records (RecordNumber, #Patient-ID (NOT NULL))

Pharmacy(Pharmacy\_Name, Pharmacy\_Location, from, to)

Medicine(Medicine\_ID, Medicine\_Name, Form, Medicine\_Description, Expiry\_Date, Price)

Patient\_Diagnosis (Diagnosis-ID, #RecordNumber, Prognosis, Diagnosis\_Date, Results)

Treatment\_Plan (Treatment\_ID, #Record\_Number, #Diagnosis\_ID, #Medicine\_ID, Procedure, Start, End)

Treats(#Doc\_ID, #Patient\_ID)

Undergoes(#Room\_Number (NOT NULL), #Maintenance\_ID)

Assigns(#Doctor\_ID , #Room\_Number)

Undertakes(#Test\_ID (NOT NULL), #Patient\_ID, Date)

Access(#Patient\_ID, #Pharmacy\_Name)

Includes(#Pharmacy\_Name (NOT NULL), #Medicine\_ID (NOT NULL))

Engage(#SSN, #Training\_ID)

Cover(#Record\_ID, #Equipment\_ID, #Maintenance\_ID, #SSN)

**Commands:**

**Create Database:**

CREATE DATABASE HOSPITAL

**Create Tables:**

CREATE TABLE Staff (

SSN VARCHAR(11) PRIMARY KEY,

FirstName VARCHAR(10) NOT NULL,

LastName VARCHAR(15) NOT NULL,

BirthDate DATE NOT NULL,

Gender ENUM('male', 'female') NOT NULL,

YearsOfExperience INT CHECK (YearsOfExperience >= 0),

Email VARCHAR(25) UNIQUE,

PhoneNumber VARCHAR(13),

Department VARCHAR(10),

Salary INT CHECK (Salary >= 0)

);

CREATE TABLE Doctors (

DoctorID INT PRIMARY KEY,

Specialty VARCHAR(10) NOT NULL,

StaffSSN VARCHAR(11) UNIQUE,

FOREIGN KEY (StaffSSN) REFERENCES Staff(SSN)

);

CREATE TABLE Secretaries (

SecretaryID INT PRIMARY KEY,

StaffSSN VARCHAR(11) UNIQUE,

FOREIGN KEY (StaffSSN) REFERENCES Staff(SSN)

);

CREATE TABLE TrainingPrograms (

TrainingID INT PRIMARY KEY,

CourseName VARCHAR(10) NOT NULL,

CertificationStatus varchar(12) NOT NULL,

CompletionDate DATE

);

CREATE TABLE Financial\_Records (

Record\_ID INT PRIMARY KEY,

Amount DECIMAL(15, 2) NOT NULL,

Type VARCHAR(11) NOT NULL,

Date DATE NOT NULL

);

CREATE TABLE Equipment (

Equipment\_ID INT PRIMARY KEY,

Name VARCHAR(15) NOT NULL,

Category VARCHAR(10) NOT NULL,

Manufacturer VARCHAR(15),

Expiry\_Date DATE

);

CREATE TABLE Patient (

Patient\_ID INT PRIMARY KEY,

Patient\_Gender ENUM('male', 'female') NOT NULL,

P\_FirstName VARCHAR(15) NOT NULL,

P\_LastName VARCHAR(15) NOT NULL,

P\_PhoneNumber VARCHAR(15),

P\_Birthday DATE NOT NULL,

City VARCHAR(10),

Street VARCHAR(10),

Building VARCHAR(12)

);

CREATE TABLE Interactions (

Interaction\_ID INT PRIMARY KEY,

Interaction\_Location VARCHAR(20),

Interaction\_Date DATE NOT NULL,

Interaction\_Time TIME,

Doctor\_ID INT,

Secretary\_ID INT,

Patient\_ID INT NOT NULL,

Interaction\_Outcome TEXT,

Interaction\_Description TEXT,

FOREIGN KEY (Doctor\_ID) REFERENCES Doctor(Doctor\_ID),

FOREIGN KEY (Secretary\_ID) REFERENCES Secretary(Secretary\_ID),

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID)

);

CREATE TABLE Room (

Room\_Number INT PRIMARY KEY,

Room\_Type VARCHAR(15) NOT NULL,

Capacity INT CHECK (Capacity > 0),

Room\_Location VARCHAR(15),

Status VARCHAR(10) NOT NULL

);

CREATE TABLE Appointment (

Appointment\_ID INT PRIMARY KEY,

Appointment\_Date DATE NOT NULL,

Appointment\_Time TIME,

Secretary\_ID INT NOT NULL,

Patient\_ID INT NOT NULL,

FOREIGN KEY (Secretary\_ID) REFERENCES Secretary(Secretary\_ID),

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID)

);

CREATE TABLE Maintenance (

Maintenance\_ID INT PRIMARY KEY,

Maintenance\_Type VARCHAR(25) NOT NULL,

Maintenance\_Date DATE,

Maintenance\_Details TEXT

);

CREATE TABLE Feedback (

Feedback\_ID INT PRIMARY KEY,

Feedback\_Date DATE NOT NULL,

Rating INT CHECK (Rating BETWEEN 1 AND 10 ),

Comments TEXT,

Patient\_ID INT NOT NULL,

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID)

);

CREATE TABLE Medical\_Test (

Test\_ID INT PRIMARY KEY,

Test\_Name VARCHAR(15) NOT NULL,

Description TEXT

);

CREATE TABLE Test\_Result (

Result\_ID INT PRIMARY KEY,

Test\_ID INT NOT NULL,

Result\_Outcome TEXT,

FOREIGN KEY (Test\_ID) REFERENCES Medical\_Test(Test\_ID)

);

CREATE TABLE Insurance (

Insurance\_ID INT PRIMARY KEY,

Policy\_Number VARCHAR(10) NOT NULL,

Provider VARCHAR(15) NOT NULL,

Coverage\_Details TEXT,

Patient\_ID INT NOT NULL,

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID)

);

CREATE TABLE Medical\_Records (

RecordNumber INT PRIMARY KEY,

Patient\_ID INT NOT NULL,

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID)

);

CREATE TABLE Pharmacy (

Pharmacy\_Name VARCHAR(17) PRIMARY KEY,

Pharmacy\_Location VARCHAR(9),

Operating\_Hours\_From TIME,

Operating\_Hours\_To TIME

);

CREATE TABLE Medicine (

Medicine\_ID INT PRIMARY KEY,

Medicine\_Name VARCHAR(25) NOT NULL,

Form VARCHAR(50),

Medicine\_Description TEXT,

Expiry\_Date DATE,

Price DECIMAL(10, 2)

);

CREATE TABLE Patient\_Diagnosis (

Diagnosis\_ID INT PRIMARY KEY,

Record\_Number INT NOT NULL,

Prognosis TEXT,

Diagnosis\_Date DATE NOT NULL,

Results TEXT,

FOREIGN KEY (Record\_Number) REFERENCES Medical\_Records(Record\_Number)

);

CREATE TABLE Treatment\_Plan (

Treatment\_ID INT PRIMARY KEY,

Record\_Number INT NOT NULL,

Diagnosis\_ID INT NOT NULL,

Medicine\_ID INT,

Procedures TEXT,

Start DATE,

End DATE,

FOREIGN KEY (Record\_Number) REFERENCES Medical\_Records(RecordNumber),

FOREIGN KEY (Diagnosis\_ID) REFERENCES Patient\_Diagnosis(Diagnosis\_ID),

FOREIGN KEY (Medicine\_ID) REFERENCES Medicine(Medicine\_ID)

);

CREATE TABLE Treats (

SSN VARCHAR(11) NOT NULL,

Doc\_ID INT NOT NULL,

Patient\_ID INT NOT NULL,

FOREIGN KEY (SSN) REFERENCES Staff(SSN),

FOREIGN KEY (Doc\_ID) REFERENCES Doctor(Doctor\_ID),

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID),

PRIMARY KEY (SSN, Doc\_ID, Patient\_ID)

);

CREATE TABLE Undergoes (

Room\_Number INT NOT NULL,

Maintenance\_ID INT NOT NULL,

FOREIGN KEY (Room\_Number) REFERENCES Room(Room\_Number),

FOREIGN KEY (Maintenance\_ID) REFERENCES Maintenance(Maintenance\_ID),

PRIMARY KEY (Room\_Number, Maintenance\_ID)

);

CREATE TABLE Assigns (

Doctor\_ID INT NOT NULL,

Room\_Number INT NOT NULL,

FOREIGN KEY (Doctor\_ID) REFERENCES Doctor(Doctor\_ID),

FOREIGN KEY (Room\_Number) REFERENCES Room(Room\_Number),

PRIMARY KEY (Doctor\_ID, Room\_Number)

);

CREATE TABLE Undertakes (

Test\_ID INT NOT NULL,

Patient\_ID INT NOT NULL,

Date DATE NOT NULL,

FOREIGN KEY (Test\_ID) REFERENCES Medical\_Test(Test\_ID),

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID),

PRIMARY KEY (Test\_ID, Patient\_ID, Date)

);

CREATE TABLE Access (

Patient\_ID INT NOT NULL,

Pharmacy\_Name VARCHAR(9) NOT NULL,

FOREIGN KEY (Patient\_ID) REFERENCES Patient(Patient\_ID),

FOREIGN KEY (Pharmacy\_Name) REFERENCES Pharmacy(Pharmacy\_Name),

PRIMARY KEY (Patient\_ID, Pharmacy\_Name)

);

CREATE TABLE Includes (

Pharmacy\_Name VARCHAR(9) NOT NULL,

Medicine\_ID INT NOT NULL,

FOREIGN KEY (Pharmacy\_Name) REFERENCES Pharmacy(Pharmacy\_Name),

FOREIGN KEY (Medicine\_ID) REFERENCES Medicine(Medicine\_ID),

PRIMARY KEY (Pharmacy\_Name, Medicine\_ID)

);CREATE TABLE Engage (

SSN VARCHAR(11) NOT NULL,

Training\_ID INT NOT NULL,

FOREIGN KEY (SSN) REFERENCES Staff(SSN),

FOREIGN KEY (Training\_ID) REFERENCES Training(Training\_ID),

PRIMARY KEY (SSN, Training\_ID)

);

CREATE TABLE Cover (

Record\_ID INT NOT NULL,

Equipment\_ID INT NOT NULL,

Maintenance\_ID INT NOT NULL,

SSN VARCHAR(11) NOT NULL,

FOREIGN KEY (Record\_ID) REFERENCES Financial\_Records(Record\_ID),

FOREIGN KEY (Equipment\_ID) REFERENCES Equipment(Equipment\_ID),

FOREIGN KEY (Maintenance\_ID) REFERENCES Maintenance(Maintenance\_ID),

FOREIGN KEY (SSN) REFERENCES Staff(SSN),

PRIMARY KEY (Record\_ID, Equipment\_ID, Maintenance\_ID, SSN)

);

**Insert Tables:**

1. **Staff**:
2. INSERT INTO STAFF VALUES ('123-45-6789', 'John', 'Doe', '1985-07-12', 'Male', 8, 'johndoe@email.com', '+1 (123) 456-7890', 'Cardiology', 60000);
3. INSERT INTO STAFF VALUES ('234-56-7890', 'Jane', 'Smith', '1990-03-25', 'Female', 5, 'janesmith@email.com', '+1 (234) 567-8901', 'Oncology', 55000);
4. INSERT INTO STAFF VALUES ('345-67-8901', 'David', 'Johnson', '1980-11-05', 'Male', 12, 'davidjohnson@email.com', '+1 (345) 678-9012', 'Neurology', 75000);
5. 4. INSERT INTO STAFF VALUES ('456-78-9012', 'Emily', 'Williams', '1992-09-18', 'Female', 3, 'emilywilliams@email.com', '+1 (456) 789-0123', 'Pediatrics', 52000);
6. 5. INSERT INTO STAFF VALUES ('567-89-0123', 'Michael', 'Brown', '1988-04-30', 'Male', 7, 'michaelbrown@email.com', '+1 (567) 890-1234', 'Radiology', 62000);
7. 6. INSERT INTO STAFF VALUES ('678-90-1234', 'Sarah', 'Miller', '1995-12-08', 'Female', 2, 'sarahmiller@email.com', '+1 (678) 901-2345', 'Orthopedics', 48000);
8. 7. INSERT INTO STAFF VALUES ('789-01-2345', 'Christopher', 'Davis', '1983-06-22', 'Male', 10, 'christopherdavis@email.com', '+1 (789) 012-3456', 'Emergency Department', 80000);
9. 8. INSERT INTO STAFF VALUES ('890-12-3456', 'Olivia', 'Wilson', '1987-02-14', 'Female', 6, 'oliviawilson@email.com', '+1 (890) 123-4567', 'Gastroenterology', 58000);
10. 9. INSERT INTO STAFF VALUES ('901-23-4567', 'Daniel', 'Taylor', '1993-10-10', 'Male', 4, 'danieltaylor@email.com', '+1 (901) 234-5678', 'Dermatology', 51000);
11. 10. INSERT INTO STAFF VALUES ('012-34-5678', 'Ava', 'Anderson', '1989-08-27', 'Female', 9, 'avaanderson@email.com', '+1 (012) 345-6789', 'Psychiatry', 67000);
12. 11. INSERT INTO STAFF VALUES ('143-42-4789', 'Liam', 'Martinez', '1986-07-03', 'Male', 11, 'liammartinez@email.com', '+1 (123) 456-7890', 'Anesthesiology', 82000);
13. 12. INSERT INTO STAFF VALUES ('214-56-7890', 'Sophia', 'Garcia', '1991-04-15', 'Female', 5, 'sophiagarcia@email.com', '+1 (234) 567-8901', 'Rheumatology', 54000);
14. 13. INSERT INTO STAFF VALUES ('345-63-8231', 'Noah', 'Lopez', '1981-11-20', 'Male', 15, 'noahlopez@email.com', '+1 (345) 678-9012', 'Pathology', 90000);
15. 14. INSERT INTO STAFF VALUES ('456-78-3412', 'Emma', 'Hernandez', '1994-09-10', 'Female', 3, 'emmahernandez@email.com', '+1 (456) 789-0123', 'Ophthalmology', 50000);
16. 15. INSERT INTO STAFF VALUES ('567-89-0873', 'James', 'Rivera', '1987-05-05', 'Male', 8, 'jamesrivera@email.com', '+1 (567) 890-1234', 'Nephrology', 59000);
17. 16. INSERT INTO STAFF VALUES ('678-90-9874', 'Mia', 'Gonzalez', '1996-12-29', 'Female', 1, 'miagonzalez@email.com', '+1 (678) 901-2345', 'Hematology', 48000);
18. 17. INSERT INTO STAFF VALUES ('789-01-1115', 'Alexander', 'Perez', '1984-08-12', 'Male', 13, 'alexanderperez@email.com', '+1 (789) 012-3456', 'Intensive Care Unit', 85000);
19. 18. INSERT INTO STAFF VALUES ('892-88-3456', 'Chloe', 'Torres', '1990-03-07', 'Female', 6, 'chloetorres@email.com', '+1 (890) 123-4567', 'Infectious Diseases', 64000);
20. 19. INSERT INTO STAFF VALUES ('991-23-4567', 'Ethan', 'Nguyen', '1993-10-30', 'Male', 4, 'ethannguyen@email.com', '+1 (901) 234-5678', 'Geriatrics', 52000);
21. 20. INSERT INTO STAFF VALUES ('012-34-8372', 'Isabella', 'Collins', '1988-09-22', 'Female', 7, 'isabellacollins@email.com', '+1 (012) 345-6789', 'Plastic Surgery', 75000);
22. 21. INSERT INTO STAFF VALUES ('123-45-6129', 'William', 'Adams', '1982-06-17', 'Male', 10, 'williamadams@email.com', '+1 (123) 456-7890', 'Physical Therapy', 72000);
23. 22. INSERT INTO STAFF VALUES ('234-56-1224', 'Grace', 'Hall', '1991-05-12', 'Female', 5, 'gracehall@email.com', '+1 (234) 567-8901', 'Nutrition and Dietetics', 58000);
24. 23. INSERT INTO STAFF VALUES ('345-67-9889', 'Benjamin', 'Young', '1980-12-25', 'Male', 14, 'benjaminyoung@email.com', '+1 (345) 678-9012', 'Pharmacy', 69000);
25. 24. INSERT INTO STAFF VALUES ('456-78-1023', 'Avery', 'Lee', '1995-08-05', 'Female', 2, 'averylee@email.com', '+1 (456) 789-0123', 'Administration', 50000);
26. 25. INSERT INTO STAFF VALUES ('567-89-9976', 'Michael', 'Rodriguez', '1986-04-28', 'Male', 9, 'michaelrodriguez@email.com', '+1 (567) 890-1234', 'Pulmonology', 78000);
27. **Doctor:**
28. INSERT INTO Doctors VALUES (1, 'Cardiologist', '123-45-6789');
29. INSERT INTO Doctors VALUES (2, 'Oncologist', '234-56-7890');
30. INSERT INTO Doctors VALUES (3, 'Neurologist', '345-67-8901');
31. INSERT INTO Doctors VALUES (4, 'Pediatrician', '456-78-9012');
32. INSERT INTO Doctors VALUES (5, 'Radiologist', '567-89-0123');
33. INSERT INTO Doctors VALUES (6, 'Orthopedist', '678-90-1234');
34. INSERT INTO Doctors VALUES (7, 'Emergency Medicine', '789-01-2345');
35. INSERT INTO Doctors VALUES (8, 'Gastroenterologist', '890-12-3456');
36. INSERT INTO Doctors VALUES (9, 'Dermatologist', '901-23-4567');
37. INSERT INTO Doctors VALUES (10, 'Psychiatrist', '012-34-5678');
38. INSERT INTO Doctors VALUES (11, 'Anesthesiologist', '143-42-4789');
39. INSERT INTO Doctors VALUES (12, 'Rheumatologist', '214-56-7890');
40. INSERT INTO Doctors VALUES (13, 'Pathologist', '345-63-8231');
41. INSERT INTO Doctors VALUES (14, 'Ophthalmologist', '456-78-3412');
42. INSERT INTO Doctors VALUES (15, 'Nephrologist', '567-89-0873');
43. INSERT INTO Doctors VALUES (16, 'Hematologist', '678-90-9874');
44. INSERT INTO Doctors VALUES (17, 'Intensivist', '789-01-1115');
45. INSERT INTO Doctors VALUES (18, 'Infectious Disease', '892-88-3456');
46. INSERT INTO Doctors VALUES (19, 'Geriatrician', '991-23-4567');
47. INSERT INTO Doctors VALUES (20, 'Plastic Surgeon', '012-34-8372');
48. INSERT INTO Doctors VALUES (21, 'Physical Therapist', '123-45-6129');
49. INSERT INTO Doctors VALUES (22, 'Dietitian', '234-56-1224');
50. INSERT INTO Doctors VALUES (23, 'Pharmacist', '345-67-9889');
51. INSERT INTO Doctors VALUES (24, 'Administrator', '456-78-1023');
52. INSERT INTO Doctors VALUES (25, 'Pulmonologist', '567-89-9976');
53. **Secretary:**
54. 1. `INSERT INTO SECRETARY VALUES (2001, '567-89-0873');`
55. 2. `INSERT INTO SECRETARY VALUES (2002, '678-90-9874');`
56. 3. `INSERT INTO SECRETARY VALUES (2003, '1984-08-12');`
57. 4. `INSERT INTO SECRETARY VALUES (2004, '892-88-3456');`
58. 5. `INSERT INTO SECRETARY VALUES (2005, '991-23-4567');`
59. 6. `INSERT INTO SECRETARY VALUES (2006, '012-34-8372');`
60. 7. `INSERT INTO SECRETARY VALUES (2007, '123-45-6129');`
61. 8. `INSERT INTO SECRETARY VALUES (2008, '234-56-1224');`
62. 9. `INSERT INTO SECRETARY VALUES (2009, '345-67-9889');`
63. 10. `INSERT INTO SECRETARY VALUES (2010, '567-89-9976');`
64. 11. `INSERT INTO SECRETARY VALUES (2011, ‘123-45-6782’);`
65. 12. `INSERT INTO SECRETARY VALUES (2012, ‘234-56-7821’);`
66. 13. `INSERT INTO SECRETARY VALUES (2013, ‘345-67-8444’);`
67. 14. `INSERT INTO SECRETARY VALUES (2014, ‘956-78-0123’);`
68. 15. `INSERT INTO SECRETARY VALUES (2015, ‘567-89-1232’);`
69. 16. `INSERT INTO SECRETARY VALUES (2016, ‘632-90-2322’);`
70. 17. `INSERT INTO SECRETARY VALUES (2017, ‘789-01-3489’);`
71. 18. `INSERT INTO SECRETARY VALUES (2018, ‘890-02-4522’);`
72. 19. `INSERT INTO SECRETARY VALUES (2019, ‘901-23-5642’);`
73. 20. `INSERT INTO SECRETARY VALUES (2020, ‘012-45-6722’);`
74. 21. `INSERT INTO SECRETARY VALUES (2021, ‘123-25-6722’);`
75. 22. `INSERT INTO SECRETARY VALUES (2022, ‘234-56-7833’);`
76. 23. `INSERT INTO SECRETARY VALUES (2023, ‘335-67-8022’);`
77. 24. `INSERT INTO SECRETARY VALUES (2024, ‘256-78-0122’);`
78. 25. `INSERT INTO SECRETARY VALUES (2025, ‘557-89-1222’);`
79. **TrainingPrograms:**
80. INSERT INTO TrainingPrograms VALUES (1001, 'Cardio101', 'Completed', '2023-06-15');
81. INSERT INTO TrainingPrograms VALUES (1002, 'Oncology', 'InProgress', '2023-07-10');
82. INSERT INTO TrainingPrograms VALUES (1003, 'Neuro202', 'Completed', '2023-05-20');
83. INSERT INTO TrainingPrograms VALUES (1004, 'Pediatr3', 'NotStarted', '2023-11-01');
84. INSERT INTO TrainingPrograms VALUES (1005, 'Radiolog', 'Completed', '2023-01-29');
85. INSERT INTO TrainingPrograms VALUES (1006, 'Ortho101', 'InProgress', '2023-08-17');
86. INSERT INTO TrainingPrograms VALUES (1007, 'EmergMed', 'NotStarted', '2023-12-05');
87. INSERT INTO TrainingPrograms VALUES (1008, 'Gastro', 'Completed', '2023-04-18');
88. INSERT INTO TrainingPrograms VALUES (1009, 'Dermato', 'InProgress', '2023-09-21');
89. INSERT INTO TrainingPrograms VALUES (1010, 'Psych101', 'Completed', '2023-03-22');
90. INSERT INTO TrainingPrograms VALUES (1011, 'Anesthe', 'Completed', '2023-07-30');
91. INSERT INTO TrainingPrograms VALUES (1012, 'Rheumat', 'NotStarted', '2023-10-15');
92. INSERT INTO TrainingPrograms VALUES (1013, 'Patho201', 'InProgress', '2023-06-03');
93. INSERT INTO TrainingPrograms VALUES (1014, 'Ophthal', 'Completed', '2023-02-11');
94. INSERT INTO TrainingPrograms VALUES (1015, 'Nephro', 'NotStarted', '2023-12-20');
95. INSERT INTO TrainingPrograms VALUES (1016, 'Hemato', 'Completed', '2023-08-05');
96. INSERT INTO TrainingPrograms VALUES (1017, 'ICUCare', 'InProgress', '2023-07-25');
97. INSERT INTO TrainingPrograms VALUES (1018, 'InfectD', 'NotStarted', '2023-11-30');
98. INSERT INTO TrainingPrograms VALUES (1019, 'Geriatr', 'Completed', '2023-09-09');
99. INSERT INTO TrainingPrograms VALUES (1020, 'PlastS', 'InProgress', '2023-08-12');
100. INSERT INTO TrainingPrograms VALUES (1021, 'PhysTh', 'NotStarted', '2023-10-28');
101. INSERT INTO TrainingPrograms VALUES (1022, 'DietNut', 'Completed', '2023-10-13');
102. INSERT INTO TrainingPrograms VALUES (1023, 'Pharma', 'InProgress', '2023-09-05');
103. INSERT INTO TrainingPrograms VALUES (1024, 'Admin', 'NotStarted', '2023-12-10');
104. INSERT INTO TrainingPrograms VALUES (1025, 'Pulmon', 'Completed', '2023-11-20');
105. **Financial\_Records:**
106. INSERT INTO Financial\_Records VALUES (3001, 5000.00, 'Maintenance', '2023-01-15');
107. INSERT INTO Financial\_Records VALUES (3002, 12000.50, 'Equipment Purchase', '2023-02-10');
108. INSERT INTO Financial\_Records VALUES (3003, 800.75, 'Utility Bills', '2023-03-05');
109. INSERT INTO Financial\_Records VALUES (3004, 4500.00, 'Staff Training', '2023-04-20');
110. INSERT INTO Financial\_Records VALUES (3005, 25000.00, 'Medical Supplies', '2023-05-25');
111. INSERT INTO Financial\_Records VALUES (3006, 15000.00, 'New Technology', '2023-06-30');
112. INSERT INTO Financial\_Records VALUES (3007, 3200.00, 'Cleaning Services', '2023-07-12');
113. INSERT INTO Financial\_Records VALUES (3008, 500.00, 'Office Supplies', '2023-08-17');
114. INSERT INTO Financial\_Records VALUES (3009, 7500.00, 'Software Upgrade', '2023-09-21');
115. INSERT INTO Financial\_Records VALUES (3010, 22250.35, 'Building Renovation', '2023-10-10');
116. INSERT INTO Financial\_Records VALUES (3011, 4800.00, 'Staff Salaries', '2023-11-15');
117. INSERT INTO Financial\_Records VALUES (3012, 3700.00, 'Insurance Premiums', '2023-12-20');
118. INSERT INTO Financial\_Records VALUES (3013, 8250.00, 'Legal Fees', '2023-01-22');
119. INSERT INTO Financial\_Records VALUES (3014, 6500.00, 'Consultancy Fees', '2023-02-28');
120. INSERT INTO Financial\_Records VALUES (3015, 10000.00, 'Research Grants', '2023-03-18');
121. INSERT INTO Financial\_Records VALUES (3016, 5500.00, 'Health Programs', '2023-04-08');
122. INSERT INTO Financial\_Records VALUES (3017, 2000.00, 'Staff Bonuses', '2023-05-13');
123. INSERT INTO Financial\_Records VALUES (3018, 11000.00, 'Emergency Funds', '2023-06-19');
124. INSERT INTO Financial\_Records VALUES (3019, 300.00, 'Miscellaneous', '2023-07-27');
125. INSERT INTO Financial\_Records VALUES (3020, 9000.00, 'Patient Care', '2023-08-05');
126. INSERT INTO Financial\_Records VALUES (3021, 4350.00, 'Equipment Repair', '2023-09-15');
127. INSERT INTO Financial\_Records VALUES (3022, 1200.00, 'Advertising', '2023-10-22');
128. INSERT INTO Financial\_Records VALUES (3023, 1600.00, 'Health Campaigns', '2023-11-30');
129. INSERT INTO Financial\_Records VALUES (3024, 7200.00, 'IT Services', '2023-12-11');
130. INSERT INTO Financial\_Records VALUES (3025, 4850.00, 'Staff Training', '2023-01-09');
131. **Equipment:**
132. INSERT INTO Equipment VALUES (4001, 'Ultrasound', 'Medical', 'MediTech', '2027-03-15');
133. INSERT INTO Equipment VALUES (4002, 'X-Ray Machine', 'Medical', 'HealthScan', '2028-07-20');
134. INSERT INTO Equipment VALUES (4003, 'EKG Monitor', 'Medical', 'CardioCare', '2029-01-10');
135. INSERT INTO Equipment VALUES (4004, 'Defibrillator', 'Medical', 'LifeSaver', '2030-05-05');
136. INSERT INTO Equipment VALUES (4005, 'Ventilator', 'Medical', 'AirAid', '2031-08-30');
137. INSERT INTO Equipment VALUES (4006, 'MRI Scanner', 'Medical', 'ScanPro', '2027-12-25');
138. INSERT INTO Equipment VALUES (4007, 'CT Scanner', 'Medical', 'ImagingInc', '2028-11-17');
139. INSERT INTO Equipment VALUES (4008, 'Infusion Pump', 'Medical', 'PumpIt', '2029-09-09');
140. INSERT INTO Equipment VALUES (4009, 'Anesthesia', 'Medical', 'SleepWell', '2030-10-13');
141. INSERT INTO Equipment VALUES (4010, 'Dialysis Machine', 'Medical', 'KidneyPro', '2031-06-21');
142. INSERT INTO Equipment VALUES (4011, 'Surgical Table', 'Surgical', 'OperateEase', '2027-04-18');
143. INSERT INTO Equipment VALUES (4012, 'Endoscope', 'Medical', 'ViewInside', '2028-02-22');
144. INSERT INTO Equipment VALUES (4013, 'Pacemaker', 'Medical', 'HeartSync', '2029-07-30');
145. INSERT INTO Equipment VALUES (4014, 'Laser', 'Surgical', 'PrecisionLaser', '2030-03-14');
146. INSERT INTO Equipment VALUES (4015, 'Autoclave', 'Sterilize', 'Cleanster', '2031-11-29');
147. INSERT INTO Equipment VALUES (4016, 'Microscope', 'Lab', 'MicroZoom', '2027-05-23');
148. INSERT INTO Equipment VALUES (4017, 'Centrifuge', 'Lab', 'SpinFast', '2028-08-16');
149. INSERT INTO Equipment VALUES (4018, 'Sphygmomanometer', 'Medical', 'PressureCheck', '2029-12-12');
150. INSERT INTO Equipment VALUES (4019, 'Oxygen Tank', 'Medical', 'OxyFlow', '2030-04-27');
151. INSERT INTO Equipment VALUES (4020, 'Thermometer', 'Medical', 'TempTrack', '2031-10-05');
152. INSERT INTO Equipment VALUES (4021, 'Stethoscope', 'Medical', 'HeartListen', '2027-07-07');
153. INSERT INTO Equipment VALUES (4022, 'Treadmill', 'Rehab', 'WalkFit', '2028-09-19');
154. INSERT INTO Equipment VALUES (4023, 'Suction Device', 'Medical', 'ClearPath', '2029-11-11');
155. INSERT INTO Equipment VALUES (4024, 'Blood Analyzer', 'Lab', 'AnalyzeIt', '2030-02-20');
156. INSERT INTO Equipment VALUES (4025, 'Refrigerator', 'Storage', 'CoolStore', '2031-01-01');
157. **Patient:**
158. INSERT INTO Patient VALUES (5001, 'male', 'John', 'Smith', '+1 (555) 101-2020', '1985-04-12', 'Rivertown', 'Oak St', 'Bldg 101');
159. INSERT INTO Patient VALUES (5002, 'female', 'Emily', 'Johnson', '+1 (555) 202-3030', '1990-07-22', 'Greenville', 'Maple Ave', 'Bldg 202');
160. INSERT INTO Patient VALUES (5003, 'male', 'Michael', 'Brown', '+1 (555) 303-4040', '1975-11-15', 'Lakewood', 'Elm Dr', 'Bldg 301');
161. INSERT INTO Patient VALUES (5004, 'female', 'Sophia', 'Garcia', '+1 (555) 404-5050', '2000-03-09', 'Hillside', 'Pine Rd', 'Bldg 402');
162. INSERT INTO Patient VALUES (5005, 'male', 'James', 'Miller', '+1 (555) 505-6060', '1988-08-23', 'Sandview', 'Cedar Ln', 'Bldg 503');
163. INSERT INTO Patient VALUES (5006, 'female', 'Olivia', 'Wilson', '+1 (555) 606-7070', '1995-05-19', 'Mountain', 'Birch St', 'Bldg 604');
164. INSERT INTO Patient VALUES (5007, 'male', 'William', 'Davis', '+1 (555) 707-8080', '1970-12-31', 'Seaside', 'Willow Ct', 'Bldg 705');
165. INSERT INTO Patient VALUES (5008, 'female', 'Isabella', 'Martinez', '+1 (555) 808-9090', '2003-09-14', 'Eastview', 'Spruce Pl', 'Bldg 806');
166. INSERT INTO Patient VALUES (5009, 'male', 'David', 'Hernandez', '+1 (555) 909-1010', '1992-06-07', 'Westville', 'Aspen Way', 'Bldg 907');
167. INSERT INTO Patient VALUES (5010, 'female', 'Mia', 'Gonzalez', '+1 (555) 100-1111', '2005-01-21', 'Northtown', 'Fir Blvd', 'Bldg 1008');
168. INSERT INTO Patient VALUES (5011, 'male', 'Ethan', 'Lee', '+1 (555) 111-2222', '1983-10-30', 'Southville', 'Holly St', 'Bldg 1109');
169. INSERT INTO Patient VALUES (5012, 'female', 'Ava', 'Perez', '+1 (555) 222-3333', '1998-02-27', 'Cliffside', 'Juniper Rd', 'Bldg 1210');
170. INSERT INTO Patient VALUES (5013, 'male', 'Daniel', 'Young', '+1 (555) 333-4444', '1965-05-15', 'Riverbend', 'Magnolia Ln', 'Bldg 1311');
171. INSERT INTO Patient VALUES (5014, 'female', 'Emma', 'Torres', '+1 (555) 444-5555', '2002-07-18', 'Lakeshore', 'Alder St', 'Bldg 1412');
172. INSERT INTO Patient VALUES (5015, 'male', 'Christopher', 'Nguyen', '+1 (555) 555-6666', '1978-09-04', 'Brookside', 'Sequoia Tr', 'Bldg 1513');
173. INSERT INTO Patient VALUES (5016, 'female', 'Grace', 'Collins', '+1 (555) 666-7777', '1993-12-08', 'Meadowland', 'Cherry Ave', 'Bldg 1614');
174. INSERT INTO Patient VALUES (5017, 'male', 'Benjamin', 'Adams', '+1 (555) 777-8888', '2006-04-22', 'Sunset', 'Dogwood Ct', 'Bldg 1715');
175. INSERT INTO Patient VALUES (5018, 'female', 'Charlotte', 'Hall', '+1 (555) 888-9999', '1989-11-13', 'Ridgeview', 'Redwood Ln', 'Bldg 1816');
176. INSERT INTO Patient VALUES (5019, 'male', 'Lucas', 'Scott', '+1 (555) 999-0000', '1972-03-06', 'Clearview', 'Ivy Rd', 'Bldg 1917');
177. INSERT INTO Patient VALUES (5020, 'female', 'Amelia', 'Wright', 'NULL', '2007-08-29', 'Hilltop', 'Larch St', 'Bldg 2018');
178. INSERT INTO Patient VALUES (5021, 'male', 'Alexander', 'Lopez', 'NULL', '1986-01-16', 'Springfield', 'Cypress Cir', 'Bldg 2119');
179. INSERT INTO Patient VALUES (5022, 'female', 'Sofia', 'Hill', 'NULL', '1997-10-03', 'Oakridge', 'Sycamore Tr', 'Bldg 2220');
180. INSERT INTO Patient VALUES (5023, 'male', 'Jacob', 'Sanchez', 'NULL', '1974-06-21', 'Pineview', 'Elmwood Ave', 'Bldg 2321');
181. INSERT INTO Patient VALUES (5024, 'female', 'Lily', 'Morales', 'NULL', '2004-12-30', 'Forest', 'Cedar Ct', 'Bldg 2422');
182. INSERT INTO Patient VALUES (5025, 'male', 'Noah', 'Rivera', 'NULL', '1981-08-15', 'Lakeview', 'Beech Rd', 'Bldg 2523');
183. **Interactions:**
184. INSERT INTO Interactions VALUES (6001, 'Consultation Room 101', '2023-03-15', '10:30:00', 1, 2001, 5001, 'Patient diagnosed with hypertension', 'Routine check-up and blood pressure measurement');
185. INSERT INTO Interactions VALUES (6002, 'Examination Room 5', '2023-04-20', '14:15:00', 2, 2002, 5002, 'Allergy tests conducted', 'Discussion about allergy symptoms and potential triggers');
186. INSERT INTO Interactions VALUES (6003, 'Surgical Theater 3', '2023-05-10', '09:00:00', 3, 2003, 5003, 'Successful knee surgery', 'Knee replacement procedure due to severe arthritis');
187. INSERT INTO Interactions VALUES (6004, 'Pediatric Ward', '2023-06-22', '11:45:00', 4, 2004, 5004, 'Child vaccination completed', 'Routine childhood vaccination and growth monitoring');
188. INSERT INTO Interactions VALUES (6005, 'Radiology Department', '2023-07-30', '16:00:00', 5, 2005, 5005, 'MRI results normal', 'MRI scan to investigate chronic headaches');
189. INSERT INTO Interactions VALUES (6006, 'Orthopedics Department', '2023-08-18', '08:30:00', 6, 2006, 5006, 'Physical therapy session scheduled', 'Evaluation for physical therapy after shoulder injury');
190. INSERT INTO Interactions VALUES (6007, 'ER Room 2', '2023-09-05', '23:00:00', 7, 2007, 5007, 'Treated for minor laceration', 'Emergency treatment for a cut sustained during a fall');
191. INSERT INTO Interactions VALUES (6008, 'Gastroenterology Clinic', '2023-10-13', '15:20:00', 8, 2008, 5008, 'Endoscopy scheduled', 'Consultation for recurring abdominal pain');
192. INSERT INTO Interactions VALUES (6009, 'Dermatology Office', '2023-11-21', '10:00:00', 9, 2009, 5009, 'Skin biopsy taken', 'Examination of a suspicious mole on the skin');
193. INSERT INTO Interactions VALUES (6010, 'Psychiatry Ward', '2023-12-19', '13:30:00', 10, 2010, 5010, 'Therapy session for anxiety', 'Regular follow-up for anxiety management');
194. INSERT INTO Interactions VALUES (6011, 'Anesthesiology', '2024-01-11', '09:45:00', 11, 2011, 5011, 'Pre-surgery consultation', 'Discussion about anesthesia for upcoming surgery');
195. INSERT INTO Interactions VALUES (6012, 'Rheumatology Office', '2024-02-07', '14:00:00', 12, 2012, 5012, 'Arthritis treatment plan', 'Assessment of rheumatoid arthritis symptoms');
196. INSERT INTO Interactions VALUES (6013, 'Pathology Lab', '2024-03-20', '11:15:00', 13, 2013, 5013, 'Biopsy results discussed', 'Review of pathology results for tissue biopsy');
197. INSERT INTO Interactions VALUES (6014, 'Ophthalmology Clinic', '2024-04-18', '10:30:00', 14, 2014, 5014, 'Eye examination completed', 'Annual eye check-up and vision test');
198. INSERT INTO Interactions VALUES (6015, 'Nephrology Department', '2024-05-22', '15:45:00', 15, 2015, 5015, 'Kidney function tests ordered', 'Evaluation for chronic kidney disease');
199. INSERT INTO Interactions VALUES (6016, 'Hematology Lab', '2024-06-16', '09:00:00', 16, 2016, 5016, 'Blood disorder consultation', 'Discussion about abnormal blood test results');
200. INSERT INTO Interactions VALUES (6017, 'ICU', '2024-07-13', '22:30:00', 17, 2017, 5017, 'Critical patient stabilized', 'Intensive care for severe respiratory distress');
201. INSERT INTO Interactions VALUES (6018, 'Infectious Disease Office', '2024-08-09', '11:00:00', 18, 2018, 5018, 'Treatment for tropical disease', 'Follow-up for treatment of dengue fever');
202. INSERT INTO Interactions VALUES (6019, 'Geriatrics Clinic', '2024-09-15', '14:15:00', 19, 2019, 5019, 'Alzheimer’s care plan', 'Management of Alzheimer’s disease symptoms');
203. INSERT INTO Interactions VALUES (6020, 'Plastic Surgery', '2024-10-12', '13:00:00', 20, 2020, 5020, 'Post-operative check', 'Assessment after cosmetic surgery');
204. INSERT INTO Interactions VALUES (6021, 'Physical Therapy', '2024-11-23', '16:30:00', 21, 2021, 5021, 'Rehabilitation session', 'Physical therapy for back pain recovery');
205. INSERT INTO Interactions VALUES (6022, 'Nutrition Clinic', '2024-12-10', '10:00:00', 22, 2022, 5022, 'Diet plan for diabetes', 'Consultation about dietary changes for diabetes');
206. INSERT INTO Interactions VALUES (6023, 'Pharmacy', '2025-01-19', '09:45:00', 23, 2023, 5023, 'Medication prescription', 'Prescription of new medication for hypertension');
207. INSERT INTO Interactions VALUES (6024, 'Administration Office', '2025-02-17', '15:00:00', 24, 2024, 5024, 'Insurance paperwork', 'Assistance with health insurance claim forms');
208. INSERT INTO Interactions VALUES (6025, 'Pulmonology Ward', '2025-03-25', '14:30:00', 25, 2025, 5025, 'Asthma management plan', 'Review of asthma treatment and inhaler technique');
209. **Room**:
210. INSERT INTO Room VALUES (101, 'Examination', 2, 'First Floor', 'Occupied');
211. INSERT INTO Room VALUES (102, 'Surgical', 1, 'Second Floor', 'Vacant');
212. INSERT INTO Room VALUES (103, 'ICU', 1, 'Third Floor', 'Occupied');
213. INSERT INTO Room VALUES (104, 'Recovery', 3, 'Fourth Floor', 'Under Maintenance');
214. INSERT INTO Room VALUES (105, 'Maternity', 2, 'Fifth Floor', 'Occupied');
215. INSERT INTO Room VALUES (106, 'Radiology', 1, 'First Floor', 'Vacant');
216. INSERT INTO Room VALUES (107, 'Pediatric', 4, 'Second Floor', 'Occupied');
217. INSERT INTO Room VALUES (108, 'Psychiatry', 2, 'Third Floor', 'Vacant');
218. INSERT INTO Room VALUES (109, 'Dialysis', 4, 'Fourth Floor', 'Occupied');
219. INSERT INTO Room VALUES (110, 'Orthopedic', 3, 'Fifth Floor', 'Vacant');
220. INSERT INTO Room VALUES (111, 'Oncology', 2, 'First Floor', 'Occupied');
221. INSERT INTO Room VALUES (112, 'Cardiology', 2, 'Second Floor', 'Under Maintenance');
222. INSERT INTO Room VALUES (113, 'Neurology', 1, 'Third Floor', 'Occupied');
223. INSERT INTO Room VALUES (114, 'Gastroenterology', 3, 'Fourth Floor', 'Vacant');
224. INSERT INTO Room VALUES (115, 'Dermatology', 1, 'Fifth Floor', 'Occupied');
225. INSERT INTO Room VALUES (116, 'General Ward', 6, 'First Floor', 'Occupied');
226. INSERT INTO Room VALUES (117, 'Emergency', 2, 'Second Floor', 'Occupied');
227. INSERT INTO Room VALUES (118, 'Laboratory', 2, 'Third Floor', 'Vacant');
228. INSERT INTO Room VALUES (119, 'Storage', 2, 'Fourth Floor', 'Vacant');
229. INSERT INTO Room VALUES (120, 'Pharmacy', 1, 'Fifth Floor', 'Occupied');
230. INSERT INTO Room VALUES (121, 'Consultation', 1, 'First Floor', 'Vacant');
231. INSERT INTO Room VALUES (122, 'Administration', 3, 'Second Floor', 'Occupied');
232. INSERT INTO Room VALUES (123, 'Staff Lounge', 4, 'Third Floor', 'Vacant');
233. INSERT INTO Room VALUES (124, 'Meeting Room', 10, 'Fourth Floor', 'Occupied');
234. INSERT INTO Room VALUES (125, 'Physical Therapy', 3, 'Fifth Floor', 'Under Maintenance');
235. **Appointment:**
236. INSERT INTO Appointment VALUES (7001, '2023-03-15', '10:30:00', 2001, 5001);
237. INSERT INTO Appointment VALUES (7002, '2023-03-20', '09:00:00', 2002, 5002);
238. INSERT INTO Appointment VALUES (7003, '2023-03-22', '11:45:00', 2003, 5003);
239. INSERT INTO Appointment VALUES (7004, '2023-03-25', '14:30:00', 2004, 5004);
240. INSERT INTO Appointment VALUES (7005, '2023-03-28', '08:15:00', 2005, 5005);
241. INSERT INTO Appointment VALUES (7006, '2023-04-02', '10:00:00', 2006, 5006);
242. INSERT INTO Appointment VALUES (7007, '2023-04-05', '16:00:00', 2007, 5007);
243. INSERT INTO Appointment VALUES (7008, '2023-04-10', '13:00:00', 2008, 5008);
244. INSERT INTO Appointment VALUES (7009, '2023-04-12', '15:30:00', 2009, 5009);
245. INSERT INTO Appointment VALUES (7010, '2023-04-17', '09:30:00', 2010, 5010);
246. INSERT INTO Appointment VALUES (7011, '2023-04-20', '11:00:00', 2011, 5011);
247. INSERT INTO Appointment VALUES (7012, '2023-04-23', '14:45:00', 2012, 5012);
248. INSERT INTO Appointment VALUES (7013, '2023-04-27', '08:30:00', 2013, 5013);
249. INSERT INTO Appointment VALUES (7014, '2023-05-01', '10:15:00', 2014, 5014);
250. INSERT INTO Appointment VALUES (7015, '2023-05-04', '15:00:00', 2015, 5015);
251. INSERT INTO Appointment VALUES (7016, '2023-05-08', '09:45:00', 2016, 5016);
252. INSERT INTO Appointment VALUES (7017, '2023-05-11', '13:30:00', 2017, 5017);
253. INSERT INTO Appointment VALUES (7018, '2023-05-15', '16:15:00', 2018, 5018);
254. INSERT INTO Appointment VALUES (7019, '2023-05-18', '14:00:00', 2019, 5019);
255. INSERT INTO Appointment VALUES (7020, '2023-05-22', '11:30:00', 2020, 5020);
256. INSERT INTO Appointment VALUES (7021, '2023-05-25', '08:00:00', 2021, 5021);
257. INSERT INTO Appointment VALUES (7022, '2023-05-29', '12:00:00', 2022, 5022);
258. INSERT INTO Appointment VALUES (7023, '2023-06-02', '15:45:00', 2023, 5023);
259. INSERT INTO Appointment VALUES (7024, '2023-06-05', '10:30:00', 2024, 5024);
260. INSERT INTO Appointment VALUES (7025, '2023-06-08', '09:15:00', 2025, 5025);
261. **Maintenance:**
262. INSERT INTO Maintenance VALUES (8001, 'Routine Cleaning', '2023-03-15', 'Regular cleaning and sanitization of hospital wards.');
263. INSERT INTO Maintenance VALUES (8002, 'HVAC System Check', '2023-03-20', 'Inspection and maintenance of heating, ventilation, and air conditioning systems.');
264. INSERT INTO Maintenance VALUES (8003, 'Electrical Inspection', '2023-03-25', 'Routine electrical systems check to ensure safety and efficiency.');
265. INSERT INTO Maintenance VALUES (8004, 'Plumbing Repair', '2023-04-01', 'Fixing leaks and clogs in hospital plumbing systems.');
266. INSERT INTO Maintenance VALUES (8005, 'Elevator Service', '2023-04-10', 'Annual maintenance of hospital elevators for safety and reliability.');
267. INSERT INTO Maintenance VALUES (8006, 'Medical Equipment Calibration', '2023-04-15', 'Calibration of medical equipment to ensure accuracy and functionality.');
268. INSERT INTO Maintenance VALUES (8007, 'Fire Safety Check', '2023-04-20', 'Inspection and testing of fire alarms and extinguishers.');
269. INSERT INTO Maintenance VALUES (8008, 'IT Systems Update', '2023-05-05', 'Updating and maintaining hospital information technology systems.');
270. INSERT INTO Maintenance VALUES (8009, 'Security Systems Upgrade', '2023-05-15', 'Enhancement of security cameras and access control systems.');
271. INSERT INTO Maintenance VALUES (8010, 'Painting and Renovation', '2023-05-25', 'Repainting wards and renovating patient rooms.');
272. INSERT INTO Maintenance VALUES (8011, 'Landscape Maintenance', '2023-06-01', 'Gardening and upkeep of hospital grounds.');
273. INSERT INTO Maintenance VALUES (8012, 'Pest Control', '2023-06-10', 'Routine pest control to maintain a hygienic environment.');
274. INSERT INTO Maintenance VALUES (8013, 'Flooring Repair', '2023-06-20', 'Repair and replacement of damaged flooring in corridors.');
275. INSERT INTO Maintenance VALUES (8014, 'Window Cleaning', '2023-07-01', 'Cleaning of exterior windows and glass surfaces.');
276. INSERT INTO Maintenance VALUES (8015, 'Roof Inspection', '2023-07-15', 'Inspection of the hospital roof for leaks or damage.');
277. INSERT INTO Maintenance VALUES (8016, 'Emergency Generator Testing', '2023-07-25', 'Testing of backup generators for power outage readiness.');
278. INSERT INTO Maintenance VALUES (8017, 'Furniture Replacement', '2023-08-05', 'Updating worn-out furniture in patient rooms and waiting areas.');
279. INSERT INTO Maintenance VALUES (8018, 'Signage Update', '2023-08-15', 'Replacing and updating informational and directional signs.');
280. INSERT INTO Maintenance VALUES (8019, 'Lighting Fixtures Maintenance', '2023-08-25', 'Maintenance of lighting fixtures and replacement of bulbs.');
281. INSERT INTO Maintenance VALUES (8020, 'Water System Check', '2023-09-01', 'Inspection of water heating and cooling systems.');
282. INSERT INTO Maintenance VALUES (8021, 'Air Quality Assessment', '2023-09-10', 'Testing indoor air quality for pollutants and allergens.');
283. INSERT INTO Maintenance VALUES (8022, 'Sterilization Equipment Check', '2023-09-20', 'Maintenance of autoclaves and other sterilization equipment.');
284. INSERT INTO Maintenance VALUES (8023, 'Parking Lot Repaving', '2023-10-01', 'Repaving and line marking of the hospital parking lot.');
285. INSERT INTO Maintenance VALUES (8024, 'Laundry Equipment Servicing', '2023-10-15', 'Service and maintenance of industrial laundry machines.');
286. INSERT INTO Maintenance VALUES (8025, 'Waste Disposal System Upgrade', '2023-10-25', 'Upgrading waste disposal and management systems.');
287. **Pharmacy:**
288. INSERT INTO PHARMACY VALUES (‘Hospital Pharmacy’, '1st floor', '08:00:00', '18:00:00');
289. **Feedback:**
290. INSERT INTO Feedback VALUES (9001, '2023-03-15', 8, 'Very satisfied with the medical care received.', 5001);
291. INSERT INTO Feedback VALUES (9002, '2023-03-20', 7, 'Good service but long waiting times.', 5002);
292. INSERT INTO Feedback VALUES (9003, '2023-03-25', 9, 'Exceptional care and attention from the nursing staff.', 5003);
293. INSERT INTO Feedback VALUES (9004, '2023-04-01', 6, 'Satisfactory experience, although the facility needs updating.', 5004);
294. INSERT INTO Feedback VALUES (9005, '2023-04-10', 10, 'Outstanding professionalism from the doctors.', 5005);
295. INSERT INTO Feedback VALUES (9006, '2023-04-15', 5, 'Average service, unremarkable experience.', 5006);
296. INSERT INTO Feedback VALUES (9007, '2023-04-20', 4, 'Disappointed with the administrative process.', 5007);
297. INSERT INTO Feedback VALUES (9008, '2023-05-05', 7, 'Clean and well-maintained rooms.', 5008);
298. INSERT INTO Feedback VALUES (9009, '2023-05-15', 8, 'Efficient and caring staff, made me feel comfortable.', 5009);
299. INSERT INTO Feedback VALUES (9010, '2023-05-25', 6, 'Decent care but the staff seemed overworked.', 5010);
300. INSERT INTO Feedback VALUES (9011, '2023-06-01', 9, 'Very attentive to patient needs.', 5011);
301. INSERT INTO Feedback VALUES (9012, '2023-06-10', 8, 'Positive experience during my visit.', 5012);
302. INSERT INTO Feedback VALUES (9013, '2023-06-20', 7, 'Good medical care, but the facilities could be better.', 5013);
303. INSERT INTO Feedback VALUES (9014, '2023-07-01', 10, 'Excellent treatment and friendly staff.', 5014);
304. INSERT INTO Feedback VALUES (9015, '2023-07-15', 5, 'Average experience, nothing exceptional.', 5015);
305. INSERT INTO Feedback VALUES (9016, '2023-07-25', 4, 'Long wait times and unorganized appointment scheduling.', 5016);
306. INSERT INTO Feedback VALUES (9017, '2023-08-05', 6, 'Fair service, but could improve in patient communication.', 5017);
307. INSERT INTO Feedback VALUES (9018, '2023-08-15', 9, 'Impressed with the medical expertise.', 5018);
308. INSERT INTO Feedback VALUES (9019, '2023-08-25', 8, 'Friendly and efficient, but the waiting area is cramped.', 5019);
309. INSERT INTO Feedback VALUES (9020, '2023-09-01', 7, 'Good overall, but some delays in service.', 5020);
310. INSERT INTO Feedback VALUES (9021, '2023-09-10', 5, 'Mediocre service, unimpressed with the facility cleanliness.', 5021);
311. INSERT INTO Feedback VALUES (9022, '2023-09-20', 6, 'Satisfactory healthcare but lack of parking space.', 5022);
312. INSERT INTO Feedback VALUES (9023, '2023-10-01', 7, 'Pleasant staff, but the wait time was too long.', 5023);
313. INSERT INTO Feedback VALUES (9024, '2023-10-15', 8, 'Very helpful and compassionate care.', 5024);
314. INSERT INTO Feedback VALUES (9025, '2023-10-25', 9, 'Professional and efficient treatment.', 5025);
315. **Medical\_Test:**
316. INSERT INTO Medical\_Test VALUES (10001, 'Blood Test', 'A general test to check for various conditions and diseases.');
317. INSERT INTO Medical\_Test VALUES (10002, 'MRI Scan', 'Magnetic Resonance Imaging to create detailed images of the organs and tissues.');
318. INSERT INTO Medical\_Test VALUES (10003, 'CT Scan', 'Computed Tomography scan used to create cross-sectional images of the body.');
319. INSERT INTO Medical\_Test VALUES (10004, 'X-Ray', 'Radiation-based test to view the inside of the body, especially bones.');
320. INSERT INTO Medical\_Test VALUES (10005, 'Echocardiogram', 'Ultrasound of the heart to visualize the heart chambers.');
321. INSERT INTO Medical\_Test VALUES (10006, 'Ultrasound', 'Sound wave imaging used for monitoring pregnancies and diagnosing certain conditions.');
322. INSERT INTO Medical\_Test VALUES (10007, 'Biopsy', 'A procedure involving the removal of tissue to examine for disease.');
323. INSERT INTO Medical\_Test VALUES (10008, 'Electrocardiogram', 'A test that measures the electrical activity of the heartbeat.');
324. INSERT INTO Medical\_Test VALUES (10009, 'Mammography', 'An X-ray of the breast used to detect and diagnose breast disease.');
325. INSERT INTO Medical\_Test VALUES (10010, 'Colonoscopy', 'An exam used to detect changes or abnormalities in the large intestine.');
326. INSERT INTO Medical\_Test VALUES (10011, 'Skin Allergy Test', 'Testing for allergic reactions to substances on the skin.');
327. INSERT INTO Medical\_Test VALUES (10012, 'Thyroid Function Test', 'Blood test to measure the functioning of the thyroid gland.');
328. INSERT INTO Medical\_Test VALUES (10013, 'Liver Function Test', 'Blood test to assess the health and functioning of the liver.');
329. INSERT INTO Medical\_Test VALUES (10014, 'Lung Function Test', 'Tests to measure how well the lungs work.');
330. INSERT INTO Medical\_Test VALUES (10015, 'Hearing Test', 'Examination to evaluate a person's ability to hear various sounds.');
331. INSERT INTO Medical\_Test VALUES (10016, 'Eye Test', 'Various tests to evaluate vision and diagnose eye conditions.');
332. INSERT INTO Medical\_Test VALUES (10017, 'Stress Test', 'Measures the heart's activity during physical exertion.');
333. INSERT INTO Medical\_Test VALUES (10018, 'Bone Density Scan', 'A form of X-ray to detect weakening of bones.');
334. INSERT INTO Medical\_Test VALUES (10019, 'HIV Test', 'Blood test to detect the presence of HIV infection.');
335. INSERT INTO Medical\_Test VALUES (10020, 'Pap Smear', 'Test for cervical cancer in women.');
336. INSERT INTO Medical\_Test VALUES (10021, 'Cholesterol Test', 'Blood test to evaluate cholesterol levels.');
337. INSERT INTO Medical\_Test VALUES (10022, 'PSA Test', 'Blood test to screen for prostate cancer.');
338. INSERT INTO Medical\_Test VALUES (10023, 'Glucose Test', 'Blood sugar test for diabetes.');
339. INSERT INTO Medical\_Test VALUES (10024, 'Hepatitis Panel', 'Series of blood tests used to detect hepatitis infection.');
340. INSERT INTO Medical\_Test VALUES (10025, 'Tuberculosis Test', 'Test for the detection of tuberculosis bacteria.');
341. **Test\_Result:**
342. INSERT INTO Test\_Result VALUES (14001, 10001, 'Blood cell counts within normal range.');
343. INSERT INTO Test\_Result VALUES (14002, 10002, 'MRI shows no signs of abnormalities.');
344. INSERT INTO Test\_Result VALUES (14003, 10003, 'CT scan indicates a minor fracture.');
345. INSERT INTO Test\_Result VALUES (14004, 10004, 'X-Ray reveals clear lung fields.');
346. INSERT INTO Test\_Result VALUES (14005, 10005, 'Echocardiogram shows healthy heart function.');
347. INSERT INTO Test\_Result VALUES (14006, 10006, 'Ultrasound confirms a healthy pregnancy.');
348. INSERT INTO Test\_Result VALUES (14007, 10007, 'Biopsy results suggest benign growth.');
349. INSERT INTO Test\_Result VALUES (14008, 10008, 'Electrocardiogram indicates normal heart rhythm.');
350. INSERT INTO Test\_Result VALUES (14009, 10009, 'Mammography shows no signs of malignancy.');
351. INSERT INTO Test\_Result VALUES (14010, 10010, 'Colonoscopy results confirm polyps removed.');
352. INSERT INTO Test\_Result VALUES (14011, 10011, 'Skin allergy test identifies pollen allergy.');
353. INSERT INTO Test\_Result VALUES (14012, 10012, 'Thyroid function test results within normal limits.');
354. INSERT INTO Test\_Result VALUES (14013, 10013, 'Liver function tests indicate elevated enzymes.');
355. INSERT INTO Test\_Result VALUES (14014, 10014, 'Lung function test shows decreased capacity.');
356. INSERT INTO Test\_Result VALUES (14015, 10015, 'Hearing test indicates mild hearing loss.');
357. INSERT INTO Test\_Result VALUES (14016, 10016, 'Eye test results suggest need for prescription glasses.');
358. INSERT INTO Test\_Result VALUES (14017, 10017, 'Stress test shows good physical response to exercise.');
359. INSERT INTO Test\_Result VALUES (14018, 10018, 'Bone density scan indicates early signs of osteoporosis.');
360. INSERT INTO Test\_Result VALUES (14019, 10019, 'HIV test results are negative.');
361. INSERT INTO Test\_Result VALUES (14020, 10020, 'Pap smear results are normal.');
362. INSERT INTO Test\_Result VALUES (14021, 10021, 'Cholesterol levels are slightly elevated.');
363. INSERT INTO Test\_Result VALUES (14022, 10022, 'PSA levels within the normal range.');
364. INSERT INTO Test\_Result VALUES (14023, 10023, 'Glucose test indicates normal blood sugar levels.');
365. INSERT INTO Test\_Result VALUES (14024, 10024, 'Hepatitis panel shows no signs of infection.');
366. INSERT INTO Test\_Result VALUES (14025, 10025, 'Tuberculosis test is negative.');
367. **Insurance:**
368. INSERT INTO Insurance VALUES (11001, 'POL12345', 'HealthFirst', 'Full coverage including emergency and surgical procedures.', 5001);
369. INSERT INTO Insurance VALUES (11002, 'POL23456', 'MediCare', 'Covers up to 80% of medical expenses excluding cosmetic surgeries.', 5002);
370. INSERT INTO Insurance VALUES (11003, 'POL34567', 'LifeShield', 'Comprehensive coverage including outpatient services.', 5003);
371. INSERT INTO Insurance VALUES (11004, 'POL45678', 'WellnessPlan', 'Includes general check-ups, vaccinations, and emergency services.', 5004);
372. INSERT INTO Insurance VALUES (11005, 'POL56789', 'SecureHealth', 'Covers major surgeries and inpatient care with a low deductible.', 5005);
373. INSERT INTO Insurance VALUES (11006, 'POL67890', 'FamilyCare', 'Covers all family members for most medical procedures.', 5006);
374. INSERT INTO Insurance VALUES (11007, 'POL78901', 'GlobalMed', 'International coverage including travel vaccines.', 5007);
375. INSERT INTO Insurance VALUES (11008, 'POL89012', 'CarePlus', 'Extended coverage for chronic illnesses and therapy sessions.', 5008);
376. INSERT INTO Insurance VALUES (11009, 'POL90123', 'PrimeLife', 'High coverage for senior citizens, includes home care services.', 5009);
377. INSERT INTO Insurance VALUES (11010, 'POL01234', 'NextGen', 'Specialized for young adults, includes mental health services.', 5010);
378. INSERT INTO Insurance VALUES (11011, 'POL11111', 'HealthGuard', 'Coverage for a wide range of medical tests and prescription drugs.', 5011);
379. INSERT INTO Insurance VALUES (11012, 'POL22222', 'PulseCare', 'Includes heart-related procedures and regular cardiology check-ups.', 5012);
380. INSERT INTO Insurance VALUES (11013, 'POL33333', 'MediTrust', 'Provides benefits for long-term hospitalization.', 5013);
381. INSERT INTO Insurance VALUES (11014, 'POL44444', 'VitalCover', 'Focused on critical illness coverage and emergency care.', 5014);
382. INSERT INTO Insurance VALUES (11015, 'POL55555', 'HarmonyHealth', 'Emphasizes on holistic care, including alternative treatments.', 5015);
383. INSERT INTO Insurance VALUES (11016, 'POL66666', 'CareFirst', 'Comprehensive plan with a focus on preventive care.', 5016);
384. INSERT INTO Insurance VALUES (11017, 'POL77777', 'HealthNet', 'Covers both inpatient and outpatient mental health services.', 5017);
385. INSERT INTO Insurance VALUES (11018, 'POL88888', 'PeakLife', 'Geared towards athletes, covers sports injuries and rehabilitation.', 5018);
386. INSERT INTO Insurance VALUES (11019, 'POL99999', 'SecureFuture', 'Long-term care insurance, including disability and retirement health plans.', 5019);
387. INSERT INTO Insurance VALUES (11020, 'POL00000', 'WellCare', 'Offers a range of benefits for general wellness and screenings.', 5020);
388. INSERT INTO Insurance VALUES (11021, 'POL12321', 'FlexiHealth', 'Flexible plan, allows adjustments to coverage as needed.', 5021);
389. INSERT INTO Insurance VALUES (11022, 'POL23232', 'EcoHealth', 'Environmentally conscious health plan, includes green living benefits.', 5022);
390. INSERT INTO Insurance VALUES (11023, 'POL34343', 'QuickCover', 'Focused on quick claim settlements and emergency coverage.', 5023);
391. INSERT INTO Insurance VALUES (11024, 'POL45454', 'TruHealth', 'Emphasizes on accurate and truthful coverage, no hidden clauses.', 5024);
392. INSERT INTO Insurance VALUES (11025, 'POL56565', 'CompleteCare', 'All-inclusive plan covering a wide spectrum of health services.', 5025);
393. **Medical\_Records:**
394. INSERT INTO Medical\_Records VALUES (12001, 5001);
395. INSERT INTO Medical\_Records VALUES (12002, 5002);
396. INSERT INTO Medical\_Records VALUES (12003, 5003);
397. INSERT INTO Medical\_Records VALUES (12004, 5004);
398. INSERT INTO Medical\_Records VALUES (12005, 5005);
399. INSERT INTO Medical\_Records VALUES (12006, 5006);
400. INSERT INTO Medical\_Records VALUES (12007, 5007);
401. INSERT INTO Medical\_Records VALUES (12008, 5008);
402. INSERT INTO Medical\_Records VALUES (12009, 5009);
403. INSERT INTO Medical\_Records VALUES (12010, 5010);
404. INSERT INTO Medical\_Records VALUES (12011, 5011);
405. INSERT INTO Medical\_Records VALUES (12012, 5012);
406. INSERT INTO Medical\_Records VALUES (12013, 5013);
407. INSERT INTO Medical\_Records VALUES (12014, 5014);
408. INSERT INTO Medical\_Records VALUES (12015, 5015);
409. INSERT INTO Medical\_Records VALUES (12016, 5016);
410. INSERT INTO Medical\_Records VALUES (12017, 5017);
411. INSERT INTO Medical\_Records VALUES (12018, 5018);
412. INSERT INTO Medical\_Records VALUES (12019, 5019);
413. INSERT INTO Medical\_Records VALUES (12020, 5020);
414. INSERT INTO Medical\_Records VALUES (12021, 5021);
415. INSERT INTO Medical\_Records VALUES (12022, 5022);
416. INSERT INTO Medical\_Records VALUES (12023, 5023);
417. INSERT INTO Medical\_Records VALUES (12024, 5024);
418. INSERT INTO Medical\_Records VALUES (12025, 5025);
419. **Medicine:**
420. INSERT INTO Medicine VALUES (13001, 'Acetaminophen', 'Tablet', 'Pain reliever and fever reducer.', '2025-05-01', 5.99);
421. INSERT INTO Medicine VALUES (13002, 'Ibuprofen', 'Capsule', 'Nonsteroidal anti-inflammatory drug for pain relief.', '2024-08-15', 7.50);
422. INSERT INTO Medicine VALUES (13003, 'Amoxicillin', 'Liquid', 'Antibiotic used to treat various bacterial infections.', '2023-12-30', 15.20);
423. INSERT INTO Medicine VALUES (13004, 'Lisinopril', 'Tablet', 'Used to treat high blood pressure and heart failure.', '2025-07-22', 12.00);
424. INSERT INTO Medicine VALUES (13005, 'Metformin', 'Tablet', 'Medication for type 2 diabetes.', '2024-11-10', 8.75);
425. INSERT INTO Medicine VALUES (13006, 'Omeprazole', 'Capsule', 'Used to treat gastroesophageal reflux disease.', '2023-10-05', 10.50);
426. INSERT INTO Medicine VALUES (13007, 'Cetirizine', 'Liquid', 'Antihistamine for allergy relief.', '2024-09-19', 6.30);
427. INSERT INTO Medicine VALUES (13008, 'Simvastatin', 'Tablet', 'Lowers cholesterol and triglyceride levels.', '2025-08-30', 18.00);
428. INSERT INTO Medicine VALUES (13009, 'Aspirin', 'Tablet', 'Used to reduce fever, pain, and inflammation.', '2023-06-15', 4.50);
429. INSERT INTO Medicine VALUES (13010, 'Albuterol', 'Inhaler', 'Treats bronchospasm in asthma and COPD patients.', '2025-03-27', 25.00);
430. INSERT INTO Medicine VALUES (13011, 'Gabapentin', 'Capsule', 'Used for nerve pain and seizures.', '2024-12-22', 20.75);
431. INSERT INTO Medicine VALUES (13012, 'Atorvastatin', 'Tablet', 'Helps lower bad cholesterol and fats.', '2025-04-18', 15.50);
432. INSERT INTO Medicine VALUES (13013, 'Furosemide', 'Liquid', 'Diuretic used to treat fluid retention.', '2023-08-09', 9.40);
433. INSERT INTO Medicine VALUES (13014, 'Prednisone', 'Tablet', 'Steroid used to reduce inflammation.', '2024-05-13', 12.10);
434. INSERT INTO Medicine VALUES (13015, 'Insulin', 'Injection', 'Regulates blood sugar in diabetics.', '2025-01-01', 45.00);
435. INSERT INTO Medicine VALUES (13016, 'Warfarin', 'Tablet', 'Anticoagulant to prevent blood clots.', '2024-07-07', 16.80);
436. INSERT INTO Medicine VALUES (13017, 'Hydrochlorothiazide', 'Capsule', 'Treats high blood pressure and fluid retention.', '2023-11-20', 7.60);
437. INSERT INTO Medicine VALUES (13018, 'Fluoxetine', 'Liquid', 'Antidepressant belonging to the SSRI class.', '2025-02-15', 22.00);
438. INSERT INTO Medicine VALUES (13019, 'Ranitidine', 'Tablet', 'Used to treat and prevent ulcers.', '2024-04-04', 9.90);
439. INSERT INTO Medicine VALUES (13020, 'Losartan', 'Tablet', 'Treats high blood pressure and kidney disease.', '2025-06-25', 14.50);
440. INSERT INTO Medicine VALUES (13021, 'Amlodipine', 'Capsule', 'Calcium channel blocker for high blood pressure.', '2024-10-10', 11.00);
441. INSERT INTO Medicine VALUES (13022, 'Tamsulosin', 'Capsule', 'Used to treat enlarged prostate.', '2023-09-05', 19.75);
442. INSERT INTO Medicine VALUES (13023, 'Diphenhydramine', 'Liquid', 'Antihistamine used to treat allergy symptoms.', '2025-03-20', 5.45);
443. INSERT INTO Medicine VALUES (13024, 'Glucosamine', 'Tablet', 'Supplement for joint health.', '2024-01-17', 17.30);
444. INSERT INTO Medicine VALUES (13025, 'Vitamin D', 'Capsule', 'Supplement to help maintain bone health.', '2025-05-31', 8.25);
445. **Patient\_Diagnosis:**
446. INSERT INTO Patient\_Diagnosis VALUES (15001, 12001, 'Stable', '2023-03-15', 'Diagnosed with Type 2 Diabetes.');
447. INSERT INTO Patient\_Diagnosis VALUES (15002, 12002, 'Improving', '2023-03-20', 'Acute Bronchitis.');
448. INSERT INTO Patient\_Diagnosis VALUES (15003, 12003, 'Requires Monitoring', '2023-03-25', 'Hypertension detected.');
449. INSERT INTO Patient\_Diagnosis VALUES (15004, 12004, 'Good', '2023-04-01', 'Recovery from viral infection.');
450. INSERT INTO Patient\_Diagnosis VALUES (15005, 12005, 'Stable', '2023-04-10', 'Asthma, regular treatment recommended.');
451. INSERT INTO Patient\_Diagnosis VALUES (15006, 12006, 'Critical', '2023-04-15', 'Coronary heart disease.');
452. INSERT INTO Patient\_Diagnosis VALUES (15007, 12007, 'Under Treatment', '2023-04-20', 'Osteoarthritis diagnosed.');
453. INSERT INTO Patient\_Diagnosis VALUES (15008, 12008, 'Regular Check-up Needed', '2023-05-05', 'Chronic kidney disease.');
454. INSERT INTO Patient\_Diagnosis VALUES (15009, 12009, 'Positive Response to Treatment', '2023-05-15', 'Treated for skin cancer.');
455. INSERT INTO Patient\_Diagnosis VALUES (15010, 12010, 'Stable under Medication', '2023-05-25', 'Rheumatoid arthritis.');
456. INSERT INTO Patient\_Diagnosis VALUES (15011, 12011, 'Monitor Regularly', '2023-06-01', 'Diagnosed with glaucoma.');
457. INSERT INTO Patient\_Diagnosis VALUES (15012, 12012, 'Stable', '2023-06-10', 'Thyroid disorder.');
458. INSERT INTO Patient\_Diagnosis VALUES (15013, 12013, 'Improving', '2023-06-20', 'Recovery from surgical procedure.');
459. INSERT INTO Patient\_Diagnosis VALUES (15014, 12014, 'Rehabilitation', '2023-07-01', 'Hip replacement surgery.');
460. INSERT INTO Patient\_Diagnosis VALUES (15015, 12015, 'Stable with Treatment', '2023-07-15', 'Chronic migraines.');
461. INSERT INTO Patient\_Diagnosis VALUES (15016, 12016, 'Requires Follow-up', '2023-07-25', 'Gastroesophageal reflux disease.');
462. INSERT INTO Patient\_Diagnosis VALUES (15017, 12017, 'Progressing', '2023-08-05', 'Undergoing chemotherapy for lymphoma.');
463. INSERT INTO Patient\_Diagnosis VALUES (15018, 12018, 'Stable', '2023-08-15', 'Diabetes mellitus, well-controlled.');
464. INSERT INTO Patient\_Diagnosis VALUES (15019, 12019, 'Regular Monitoring', '2023-08-25', 'Multiple sclerosis.');
465. INSERT INTO Patient\_Diagnosis VALUES (15020, 12020, 'Good Prognosis', '2023-09-01', 'Appendicitis post-surgery.');
466. INSERT INTO Patient\_Diagnosis VALUES (15021, 12021, 'Under Observation', '2023-09-10', 'Suspected case of Lyme disease.');
467. INSERT INTO Patient\_Diagnosis VALUES (15022, 12022, 'Improving', '2023-09-20', 'Tuberculosis treatment ongoing.');
468. INSERT INTO Patient\_Diagnosis VALUES (15023, 12023, 'Recovery', '2023-10-01', 'Post-fracture rehabilitation.');
469. INSERT INTO Patient\_Diagnosis VALUES (15024, 12024, 'Stable', '2023-10-15', 'Managed hypertension.');
470. INSERT INTO Patient\_Diagnosis VALUES (15025, 12025, 'Ongoing Treatment', '2023-10-25', 'Treatment for chronic liver disease.');
471. **Treatment\_Plan:**
472. INSERT INTO Treatment\_Plan VALUES (16001, 12001, 15001, 13001, 'Regular blood sugar monitoring', '2023-03-15', '2023-09-15');
473. INSERT INTO Treatment\_Plan VALUES (16002, 12002, 15002, 13002, 'Physical therapy for bronchitis recovery', '2023-03-20', '2023-06-20');
474. INSERT INTO Treatment\_Plan VALUES (16003, 12003, 15003, NULL, 'Diet and exercise plan for hypertension', '2023-03-25', '2023-09-25');
475. INSERT INTO Treatment\_Plan VALUES (16004, 12004, 15004, 13003, 'Antiviral medication', '2023-04-01', '2023-05-01');
476. INSERT INTO Treatment\_Plan VALUES (16005, 12005, 15005, 13004, 'Asthma management with inhalers', '2023-04-10', '2023-10-10');
477. INSERT INTO Treatment\_Plan VALUES (16006, 12006, 15006, 13005, 'Heart-healthy diet and regular exercise', '2023-04-15', '2023-10-15');
478. INSERT INTO Treatment\_Plan VALUES (16007, 12007, 15007, 13006, 'Physical therapy for osteoarthritis', '2023-04-20', '2023-10-20');
479. INSERT INTO Treatment\_Plan VALUES (16008, 12008, 15008, 13007, 'Regular kidney function tests', '2023-05-05', '2023-11-05');
480. INSERT INTO Treatment\_Plan VALUES (16009, 12009, 15009, 13008, 'Follow-up skin examinations', '2023-05-15', '2023-08-15');
481. INSERT INTO Treatment\_Plan VALUES (16010, 12010, 15010, 13009, 'Rheumatoid arthritis medication', '2023-05-25', '2023-11-25');
482. INSERT INTO Treatment\_Plan VALUES (16011, 12011, 15011, 13010, 'Regular eye pressure tests', '2023-06-01', '2023-12-01');
483. INSERT INTO Treatment\_Plan VALUES (16012, 12012, 15012, 13011, 'Thyroid hormone therapy', '2023-06-10', '2023-12-10');
484. INSERT INTO Treatment\_Plan VALUES (16013, 12013, 15013, 13012, 'Post-surgery rehabilitation exercises', '2023-06-20', '2023-09-20');
485. INSERT INTO Treatment\_Plan VALUES (16014, 12014, 15014, 13013, 'Hip exercises and pain management', '2023-07-01', '2023-10-01');
486. INSERT INTO Treatment\_Plan VALUES (16015, 12015, 15015, 13014, 'Migraine medication and stress management', '2023-07-15', '2023-10-15');
487. INSERT INTO Treatment\_Plan VALUES (16016, 12016, 15016, 13015, 'GERD medication and dietary adjustments', '2023-07-25', '2023-10-25');
488. INSERT INTO Treatment\_Plan VALUES (16017, 12017, 15017, 13016, 'Chemotherapy and nutritional support', '2023-08-05', '2024-02-05');
489. INSERT INTO Treatment\_Plan VALUES (16018, 12018, 15018, 13017, 'Diabetes management with insulin therapy', '2023-08-15', '2024-02-15');
490. INSERT INTO Treatment\_Plan VALUES (16019, 12019, 15019, 13018, 'MS medication and physical therapy', '2023-08-25', '2024-02-25');
491. INSERT INTO Treatment\_Plan VALUES (16020, 12020, 15020, 13019, 'Post-appendectomy care', '2023-09-01', '2023-10-01');
492. INSERT INTO Treatment\_Plan VALUES (16021, 12021, 15021, 13020, 'Antibiotics and regular check-ups for Lyme disease', '2023-09-10', '2023-12-10');
493. INSERT INTO Treatment\_Plan VALUES (16022, 12022, 15022, 13021, 'Tuberculosis treatment regimen', '2023-09-20', '2024-03-20');
494. INSERT INTO Treatment\_Plan VALUES (16023, 12023, 15023, 13022, 'Rehabilitation program for fracture recovery', '2023-10-01', '2024-01-01');
495. INSERT INTO Treatment\_Plan VALUES (16024, 12024, 15024, 13023, 'Hypertension medication and lifestyle changes', '2023-10-15', '2024-04-15');
496. INSERT INTO Treatment\_Plan VALUES (16025, 12025, 15025, 13024, 'Liver disease medication and regular liver function tests', '2023-10-25', '2024-04-25');
497. **Treats:**
498. INSERT INTO Treats VALUES (1, 5001);
499. INSERT INTO Treats VALUES (2, 5002);
500. INSERT INTO Treats VALUES (3, 5003);
501. INSERT INTO Treats VALUES (4, 5004);
502. INSERT INTO Treats VALUES (5, 5005);
503. INSERT INTO Treats VALUES (6, 5006);
504. INSERT INTO Treats VALUES (7, 5007);
505. INSERT INTO Treats VALUES (8, 5008);
506. INSERT INTO Treats VALUES (9, 5009);
507. INSERT INTO Treats VALUES (10, 5010);
508. INSERT INTO Treats VALUES (11, 5011);
509. INSERT INTO Treats VALUES (12, 5012);
510. INSERT INTO Treats VALUES (13, 5013);
511. INSERT INTO Treats VALUES (14, 5014);
512. INSERT INTO Treats VALUES (15, 5015);
513. INSERT INTO Treats VALUES (16, 5016);
514. INSERT INTO Treats VALUES (17, 5017);
515. INSERT INTO Treats VALUES (18, 5018);
516. INSERT INTO Treats VALUES (19, 5019);
517. INSERT INTO Treats VALUES (20, 5020);
518. INSERT INTO Treats VALUES (21, 5021);
519. INSERT INTO Treats VALUES (22, 5022);
520. INSERT INTO Treats VALUES (23, 5023);
521. INSERT INTO Treats VALUES (24, 5024);
522. INSERT INTO Treats VALUES (25, 5025);
523. **Undergoes:**
524. INSERT INTO Undergoes VALUES (101, 8001);
525. INSERT INTO Undergoes VALUES (102, 8002);
526. INSERT INTO Undergoes VALUES (103, 8003);
527. INSERT INTO Undergoes VALUES (104, 8004);
528. INSERT INTO Undergoes VALUES (105, 8005);
529. INSERT INTO Undergoes VALUES (106, 8006);
530. INSERT INTO Undergoes VALUES (107, 8007);
531. INSERT INTO Undergoes VALUES (108, 8008);
532. INSERT INTO Undergoes VALUES (109, 8009);
533. INSERT INTO Undergoes VALUES (110, 8010);
534. INSERT INTO Undergoes VALUES (111, 8011);
535. INSERT INTO Undergoes VALUES (112, 8012);
536. INSERT INTO Undergoes VALUES (113, 8013);
537. INSERT INTO Undergoes VALUES (114, 8014);
538. INSERT INTO Undergoes VALUES (115, 8015);
539. INSERT INTO Undergoes VALUES (116, 8016);
540. INSERT INTO Undergoes VALUES (117, 8017);
541. INSERT INTO Undergoes VALUES (118, 8018);
542. INSERT INTO Undergoes VALUES (119, 8019);
543. INSERT INTO Undergoes VALUES (120, 8020);
544. INSERT INTO Undergoes VALUES (121, 8021);
545. INSERT INTO Undergoes VALUES (122, 8022);
546. INSERT INTO Undergoes VALUES (123, 8023);
547. INSERT INTO Undergoes VALUES (124, 8024);
548. INSERT INTO Undergoes VALUES (125, 8025);
549. **Assigns:**
550. INSERT INTO Assigns VALUES (1, 101);
551. INSERT INTO Assigns VALUES (2, 102);
552. INSERT INTO Assigns VALUES (3, 103);
553. INSERT INTO Assigns VALUES (4, 104);
554. INSERT INTO Assigns VALUES (5, 105);
555. INSERT INTO Assigns VALUES (6, 106);
556. INSERT INTO Assigns VALUES (7, 107);
557. INSERT INTO Assigns VALUES (8, 108);
558. INSERT INTO Assigns VALUES (9, 109);
559. INSERT INTO Assigns VALUES (10, 110);
560. INSERT INTO Assigns VALUES (11, 111);
561. INSERT INTO Assigns VALUES (12, 112);
562. INSERT INTO Assigns VALUES (13, 113);
563. INSERT INTO Assigns VALUES (14, 114);
564. INSERT INTO Assigns VALUES (15, 115);
565. INSERT INTO Assigns VALUES (16, 116);
566. INSERT INTO Assigns VALUES (17, 117);
567. INSERT INTO Assigns VALUES (18, 118);
568. INSERT INTO Assigns VALUES (19, 119);
569. INSERT INTO Assigns VALUES (20, 120);
570. INSERT INTO Assigns VALUES (21, 121);
571. INSERT INTO Assigns VALUES (22, 122);
572. INSERT INTO Assigns VALUES (23, 123);
573. INSERT INTO Assigns VALUES (24, 124);
574. INSERT INTO Assigns VALUES (25, 125);
575. **Undertakes:**
576. INSERT INTO Undertakes VALUES (10001, 5001, '2023-03-15');
577. INSERT INTO Undertakes VALUES (10002, 5002, '2023-03-20');
578. INSERT INTO Undertakes VALUES (10003, 5003, '2023-03-25');
579. INSERT INTO Undertakes VALUES (10004, 5004, '2023-04-01');
580. INSERT INTO Undertakes VALUES (10005, 5005, '2023-04-10');
581. INSERT INTO Undertakes VALUES (10006, 5006, '2023-04-15');
582. INSERT INTO Undertakes VALUES (10007, 5007, '2023-04-20');
583. INSERT INTO Undertakes VALUES (10008, 5008, '2023-05-05');
584. INSERT INTO Undertakes VALUES (10009, 5009, '2023-05-15');
585. INSERT INTO Undertakes VALUES (10010, 5010, '2023-05-25');
586. INSERT INTO Undertakes VALUES (10011, 5011, '2023-06-01');
587. INSERT INTO Undertakes VALUES (10012, 5012, '2023-06-10');
588. INSERT INTO Undertakes VALUES (10013, 5013, '2023-06-20');
589. INSERT INTO Undertakes VALUES (10014, 5014, '2023-07-01');
590. INSERT INTO Undertakes VALUES (10015, 5015, '2023-07-15');
591. INSERT INTO Undertakes VALUES (10016, 5016, '2023-07-25');
592. INSERT INTO Undertakes VALUES (10017, 5017, '2023-08-05');
593. INSERT INTO Undertakes VALUES (10018, 5018, '2023-08-15');
594. INSERT INTO Undertakes VALUES (10019, 5019, '2023-08-25');
595. INSERT INTO Undertakes VALUES (10020, 5020, '2023-09-01');
596. INSERT INTO Undertakes VALUES (10021, 5021, '2023-09-10');
597. INSERT INTO Undertakes VALUES (10022, 5022, '2023-09-20');
598. INSERT INTO Undertakes VALUES (10023, 5023, '2023-10-01');
599. INSERT INTO Undertakes VALUES (10024, 5024, '2023-10-15');
600. INSERT INTO Undertakes VALUES (10025, 5025, '2023-10-25');
601. **Access:**
602. INSERT INTO Access VALUES (5001, 'Hospital Pharmacy');
603. INSERT INTO Access VALUES (5002, 'Hospital Pharmacy');
604. INSERT INTO Access VALUES (5003, 'Hospital Pharmacy');
605. INSERT INTO Access VALUES (5004, 'Hospital Pharmacy');
606. INSERT INTO Access VALUES (5005, 'Hospital Pharmacy');
607. INSERT INTO Access VALUES (5006, 'Hospital Pharmacy');
608. INSERT INTO Access VALUES (5007, 'Hospital Pharmacy');
609. INSERT INTO Access VALUES (5008, 'Hospital Pharmacy');
610. INSERT INTO Access VALUES (5009, 'Hospital Pharmacy');
611. INSERT INTO Access VALUES (5010, 'Hospital Pharmacy');
612. INSERT INTO Access VALUES (5011, 'Hospital Pharmacy');
613. INSERT INTO Access VALUES (5012, 'Hospital Pharmacy');
614. INSERT INTO Access VALUES (5013, 'Hospital Pharmacy');
615. INSERT INTO Access VALUES (5014, 'Hospital Pharmacy');
616. INSERT INTO Access VALUES (5015, 'Hospital Pharmacy');
617. INSERT INTO Access VALUES (5016, 'Hospital Pharmacy');
618. INSERT INTO Access VALUES (5017, 'Hospital Pharmacy');
619. INSERT INTO Access VALUES (5018, 'Hospital Pharmacy');
620. INSERT INTO Access VALUES (5019, 'Hospital Pharmacy');
621. INSERT INTO Access VALUES (5020, 'Hospital Pharmacy');
622. INSERT INTO Access VALUES (5021, 'Hospital Pharmacy');
623. INSERT INTO Access VALUES (5022, 'Hospital Pharmacy');
624. INSERT INTO Access VALUES (5023, 'Hospital Pharmacy');
625. INSERT INTO Access VALUES (5024, 'Hospital Pharmacy');
626. INSERT INTO Access VALUES (5025, 'Hospital Pharmacy');
627. **Includes:**
628. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13001);
629. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13002);
630. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13003);
631. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13004);
632. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13005);
633. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13006);
634. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13007);
635. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13008);
636. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13009);
637. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13010);
638. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13011);
639. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13012);
640. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13013);
641. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13014);
642. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13015);
643. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13016);
644. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13017);
645. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13018);
646. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13019);
647. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13020);
648. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13021);
649. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13022);
650. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13023);
651. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13024);
652. INSERT INTO Includes VALUES ('Hospital Pharmacy', 13025);
653. **Engage:**
654. INSERT INTO Engage VALUES ('123-45-6789', 101);
655. INSERT INTO Engage VALUES ('234-56-7890', 102);
656. INSERT INTO Engage VALUES ('345-67-8901', 103);
657. INSERT INTO Engage VALUES ('456-78-9012', 104);
658. INSERT INTO Engage VALUES ('567-89-0123', 105);
659. INSERT INTO Engage VALUES ('678-90-1234', 106);
660. INSERT INTO Engage VALUES ('789-01-2345', 107);
661. INSERT INTO Engage VALUES ('890-12-3456', 108);
662. INSERT INTO Engage VALUES ('901-23-4567', 109);
663. INSERT INTO Engage VALUES ('012-34-5678', 110);
664. INSERT INTO Engage VALUES ('143-42-4789', 111);
665. INSERT INTO Engage VALUES ('214-56-7890', 112);
666. INSERT INTO Engage VALUES ('345-63-8231', 113);
667. INSERT INTO Engage VALUES ('456-78-3412', 114);
668. INSERT INTO Engage VALUES ('567-89-0873', 115);
669. INSERT INTO Engage VALUES ('678-90-9874', 116);
670. INSERT INTO Engage VALUES ('789-01-1115', 117);
671. INSERT INTO Engage VALUES ('892-88-3456', 118);
672. INSERT INTO Engage VALUES ('991-23-4567', 119);
673. INSERT INTO Engage VALUES ('012-34-8372', 120);
674. INSERT INTO Engage VALUES ('123-45-6129', 121);
675. INSERT INTO Engage VALUES ('234-56-1224', 122);
676. INSERT INTO Engage VALUES ('345-67-9889', 123);
677. INSERT INTO Engage VALUES ('456-78-1023', 124);
678. INSERT INTO Engage VALUES ('567-89-9976', 125);
679. **Cover**:
680. INSERT INTO Cover VALUES (3001, 4001, 8001, '123-45-6789');
681. INSERT INTO Cover VALUES (3002, 4002, 8002, '234-56-7890');
682. INSERT INTO Cover VALUES (3003, 4003, 8003, '345-67-8901');
683. INSERT INTO Cover VALUES (3004, 4004, 8004, '456-78-9012');
684. INSERT INTO Cover VALUES (3005, 4005, 8005, '567-89-0123');
685. INSERT INTO Cover VALUES (3006, 4006, 8006, '678-90-1234');
686. INSERT INTO Cover VALUES (3007, 4007, 8007, '789-01-2345');
687. INSERT INTO Cover VALUES (3008, 4008, 8008, '890-12-3456');
688. INSERT INTO Cover VALUES (3009, 4009, 8009, '901-23-4567');
689. INSERT INTO Cover VALUES (3010, 4010, 8010, '012-34-5678');
690. INSERT INTO Cover VALUES (3011, 4011, 8011, '143-42-4789');
691. INSERT INTO Cover VALUES (3012, 4012, 8012, '214-56-7890');
692. INSERT INTO Cover VALUES (3013, 4013, 8013, '345-63-8231');
693. INSERT INTO Cover VALUES (3014, 4014, 8014, '456-78-3412');
694. INSERT INTO Cover VALUES (3015, 4015, 8015, '567-89-0873');
695. INSERT INTO Cover VALUES (3016, 4016, 8016, '678-90-9874');
696. INSERT INTO Cover VALUES (3017, 4017, 8017, '789-01-1115');
697. INSERT INTO Cover VALUES (3018, 4018, 8018, '892-88-3456');
698. INSERT INTO Cover VALUES (3019, 4019, 8019, '991-23-4567');
699. INSERT INTO Cover VALUES (3020, 4020, 8020, '012-34-8372');
700. INSERT INTO Cover VALUES (3021, 4021, 8021, '123-45-6129');
701. INSERT INTO Cover VALUES (3022, 4022, 8022, '234-56-1224');
702. INSERT INTO Cover VALUES (3023, 4023, 8023, '345-67-9889');
703. INSERT INTO Cover VALUES (3024, 4024, 8024, '456-78-1023');
704. INSERT INTO Cover VALUES (3025, 4025, 8025, '567-89-9976');

**Queries:**

SELECT \*

FROM Staff, Room;

SELECT \*

FROM Doctor, Patient\_Diagnosis;

SELECT \*

FROM Staff NATURAL JOIN Doctors;

SELECT \*

FROM Medical\_Records NATURAL JOIN Patient;

SELECT \*

FROM Medical\_Records JOIN Patient\_Diagnosis

USING (RecordNumber)

WHERE Medical\_Records.RecordNumber < Patient\_Diagnosis.Record\_Number;

SELECT \*

FROM Financial\_Records JOIN Maintenance

USING (Maintenance\_Date)

WHERE Financial\_Records.Maintenance\_Date >= Maintenance.Maintenance\_Date;

SELECT \*

FROM Financial\_Records JOIN Maintenance

ON Financial\_Records.Amount >= Maintenance.Maintenance\_ID;

SELECT \*

FROM Equipment JOIN Cover

ON Equipment.Category = Cover.Maintenance\_Type;

SELECT p1.Patient\_ID AS Patient1\_ID, p1.P\_LastName AS Patient1\_LastName,

p2.Patient\_ID AS Patient2\_ID, p2.P\_LastName AS Patient2\_LastName

FROM Patient p1 JOIN Patient p2

ON p1.P\_LastName = p2.P\_LastName

WHERE p1.Patient\_ID < p2.Patient\_ID;

SELECT m1.RecordNumber AS RecordNumber1, m1.Patient\_ID AS Patient1\_ID, m1.Diagnosis\_Date AS Diagnosis\_Date1,

m2.RecordNumber AS RecordNumber2, m2.Patient\_ID AS Patient2\_ID, m2.Diagnosis\_Date AS Diagnosis\_Date2

FROM Medical\_Records m1 JOIN Medical\_Records m2

ON m1.Diagnosis\_Date = m2.Diagnosis\_Date

WHERE m1.RecordNumber < m2.RecordNumber;

SELECT DISTINCT Department

FROM Staff;

SELECT DISTINCT Medicine\_Name

FROM Medicine;

SELECT \*

FROM Staff

WHERE LastName LIKE 'Sm%';

SELECT \*

FROM Patient

WHERE P\_PhoneNumber LIKE '%555%';

SELECT DoctorID, Specialty

FROM Doctors

ORDER BY Specialty ASC;

SELECT RecordNumber, Patient\_ID

FROM Medical\_Records

ORDER BY Patient\_ID DESC;

SELECT FirstName, LastName, 'Doctor' AS Role

FROM Doctors

UNION

SELECT FirstName, LastName, 'Secretary' AS Role

FROM Secretaries;

SELECT DISTINCT Category AS Equipment\_Category

FROM Equipment

UNION

SELECT DISTINCT Form AS Medication\_Form

FROM Medicine;

SELECT Patient\_ID

FROM Medical\_Records

INTERSECT

SELECT Patient\_ID

FROM Insurance;

SELECT SSN

FROM Staff

INTERSECT

SELECT StaffSSN AS SSN

FROM Doctors;SELECT Patient\_ID

FROM Medical\_Records

EXCEPT

SELECT Patient\_ID

FROM Insurance;

SELECT SSN

FROM Staff

EXCEPT

SELECT StaffSSN

FROM Doctors;

SELECT P\_FirstName, P\_LastName

FROM Patient

ORDER BY P\_LastName ASC;

SELECT P\_FirstName, P\_LastName

FROM Patient

ORDER BY P\_LastName ASC;

SELECT COUNT(\*) AS TotalStaffMembers

FROM Staff;

SELECT AVG(YearsOfExperience) AS AverageExperience

FROM Staff

WHERE SSN IN (SELECT StaffSSN FROM Doctors);

SELECT Secretary\_ID, COUNT(\*) AS TotalAppointments

FROM Appointment

GROUP BY Secretary\_ID;

SELECT Department, AVG(Salary) AS AverageSalary

FROM Staff

GROUP BY Department;

SELECT Department, AVG(Salary) AS AverageSalary

FROM Staff

GROUP BY Department

HAVING AVG(Salary) > 60000;

SELECT Department, COUNT(\*) AS StaffCount

FROM Staff

GROUP BY Department

HAVING COUNT(\*) >= 3;

**Advanced:**

SELECT DISTINCT P.Patient-ID, P.P\_FirstName, P.P\_LastName

FROM Patient P

JOIN Undertakes U ON P.Patient-ID = U.Patient\_ID

WHERE U.Test\_ID IN (

SELECT U2.Test\_ID

FROM Undertakes U2

JOIN Patient P2 ON U2.Patient\_ID = P2.Patient-ID

WHERE P2.City = 'New York'

);

SELECT D.Doctor-ID, D.SSN, D.Specialty

FROM Doctor D

WHERE D.Specialty IN (

SELECT D2.Specialty

FROM Doctor D2

JOIN Staff S ON D2.SSN = S.SSN

WHERE S.Salary > 100000

);

SELECT D.Doctor-ID, D.SSN, S.Department, S.Salary

FROM Doctor D

JOIN Staff S ON D.SSN = S.SSN

WHERE S.Salary >= ALL (

SELECT S2.Salary

FROM Staff S2

WHERE S2.Department = S.Department

);

SELECT SSN, St\_FirstName, St\_LastName, Salary

FROM Staff

WHERE Salary > (

SELECT AVG(Salary)

FROM Staff AS S

WHERE S.Department = Staff.Department

);

SELECT Doctor\_ID

FROM Doctor

WHERE (

SELECT COUNT(DISTINCT Patient\_ID)

FROM Treats

WHERE Treats.Doc\_ID = Doctor.Doctor\_ID

) > 5;

SELECT PD.Patient\_ID, COUNT(PD.Diagnosis-ID) AS NumberOfDiagnoses

FROM Patient\_Diagnosis PD

GROUP BY PD.Patient\_ID

HAVING COUNT(PD.Diagnosis-ID) > (

SELECT AVG(DiagnosisCount) FROM (

SELECT COUNT(PD2.Diagnosis-ID) AS DiagnosisCount

FROM Patient\_Diagnosis PD2

GROUP BY PD2.Patient\_ID

) AS AverageDiagnoses

);

SELECT D.Doctor-ID, D.SSN, D.Specialty

FROM Doctor D

WHERE D.Specialty IN (

SELECT D2.Specialty

FROM Doctor D2

WHERE D2.Specialty IN (

SELECT D3.Specialty

FROM Doctor D3

JOIN Staff S3 ON D3.SSN = S3.SSN

GROUP BY D3.Specialty

HAVING COUNT(D3.Specialty) > (

SELECT AVG(SpecialtyCount) FROM (

SELECT COUNT(\*) AS SpecialtyCount

FROM Doctor

GROUP BY Specialty

) AS SpecialtyAvg

)

)

AND D2.SSN IN (

SELECT S4.SSN

FROM Staff S4

WHERE S4.Salary > (

SELECT AVG(Salary) FROM Staff

)

)

);

SELECT P.Patient-ID, P.P\_FirstName, P.P\_LastName

FROM Patient P

WHERE P.Patient-ID IN (

SELECT I.Patient\_ID

FROM Insurance I

WHERE I.Provider = 'ABC Health'

)

AND (

SELECT COUNT(U.Test\_ID)

FROM Undertakes U

WHERE U.Patient\_ID = P.Patient-ID

) > (

SELECT AVG(TestCount) FROM (

SELECT COUNT(U2.Test\_ID) AS TestCount

FROM Patient P2

JOIN Undertakes U2 ON P2.Patient-ID = U2.Patient\_ID

WHERE P2.City = P.City

GROUP BY P2.Patient-ID

) AS CityAverage

);

SELECT P.Patient-ID, P.P\_FirstName, P.P\_LastName

FROM Patient P

WHERE NOT EXISTS (

-- Select all types of tests

(SELECT MT.Test\_ID FROM Medical\_Test MT)

EXCEPT

-- Select tests taken by the patient

(SELECT U.Test\_ID FROM Undertakes U WHERE U.Patient\_ID = P.Patient-ID)

);

SELECT P.Patient\_ID, P\_FirstName, P\_LastName

FROM Patient P

WHERE NOT EXISTS (

SELECT Test\_ID

FROM Medical\_Test

EXCEPT

SELECT U.Test\_ID

FROM Undertakes U

WHERE U.Patient\_ID = P.Patient\_ID

);

SELECT DepartmentInfo.Department, DepartmentInfo.AvgSalary, DepartmentInfo.StaffCount

FROM (

SELECT S.Department, AVG(S.Salary) AS AvgSalary, COUNT(\*) AS StaffCount

FROM Staff S

GROUP BY S.Department

) AS DepartmentInfo;

SELECT P.Patient-ID, P.P\_FirstName, P.P\_LastName, LatestAppointments.LatestAppointmentDate

FROM Patient P

JOIN (

SELECT A.Patient-ID, MAX(A.Appointment\_Date) AS LatestAppointmentDate

FROM Appointment A

GROUP BY A.Patient-ID

) AS LatestAppointments ON P.Patient-ID = LatestAppointments.Patient-ID;

SELECT

P.Patient-ID,

P.P\_FirstName,

P.P\_LastName,

(SELECT COUNT(\*) FROM Undertakes U WHERE U.Patient\_ID = P.Patient-ID) AS TestCount

FROM

Patient P;

SELECT

R.Room\_Number,

R.Room\_Type,

(SELECT MAX(M.Maintenance\_Data) FROM Maintenance M JOIN Undergoes U ON M.Maintenance\_ID = U.Maintenance\_ID WHERE U.Room\_Number = R.Room\_Number) AS LatestMaintenanceDate

FROM

Room R;

UPDATE Staff

SET Salary = CASE

WHEN Department = 'Cardiology' THEN Salary \* 1.05

WHEN Department = 'Neurology' THEN Salary \* 1.07

ELSE Salary \* 1.03

END

WHERE Department IN ('Cardiology', 'Neurology', 'General');

UPDATE Patient

SET Category = CASE

WHEN TIMESTAMPDIFF(YEAR, P\_Birthday, CURDATE()) < 18 THEN 'Minor'

WHEN TIMESTAMPDIFF(YEAR, P\_Birthday, CURDATE()) BETWEEN 18 AND 65 THEN 'Adult'

ELSE 'Senior'

END;

SELECT

D.Doctor-ID,

D.SSN,

D.Specialty,

A.Room\_Number,

R.Room\_Type

FROM

Doctor D

LEFT OUTER JOIN Assigns A ON D.Doctor-ID = A.Doctor\_ID

LEFT OUTER JOIN Room R ON A.Room\_Number = R.Room\_Number;

SELECT

P.Patient-ID,

P.P\_FirstName,

P.P\_LastName,

I.Policy\_Number,

I.Provider

FROM

Patient P

LEFT OUTER JOIN Insurance I ON P.Patient-ID = I.Patient\_ID;

CREATE ASSERTION DepartmentBudgetLimit

CHECK (

NOT EXISTS (

SELECT 1

FROM Staff

GROUP BY Department

HAVING SUM(Salary) > (SELECT BudgetLimit FROM Budget WHERE Budget.Department = Staff.Department)

)

);

CREATE ASSERTION ValidDoctorStaffRecord

CHECK (

NOT EXISTS (

SELECT 1

FROM Doctor D

WHERE NOT EXISTS (

SELECT 1

FROM Staff S

WHERE S.SSN = D.SSN

)

)

);

CREATE VIEW DoctorDetails AS

SELECT

D.Doctor-ID,

D.SSN,

D.Specialty,

S.St\_FirstName,

S.St\_LastName,

S.Department,

S.Salary

FROM

Doctor D

JOIN

Staff S ON D.SSN = S.SSN;

CREATE VIEW PatientInsuranceStatus AS

SELECT

P.Patient-ID,

P.P\_FirstName,

P.P\_LastName,

CASE

WHEN I.Patient\_ID IS NOT NULL THEN 'Insured'

ELSE 'Uninsured'

END AS InsuranceStatus

FROM

Patient P

LEFT JOIN

Insurance I ON P.Patient-ID = I.Patient\_ID;

CREATE TRIGGER UpdateDoctorSalary

AFTER UPDATE OF Specialty ON Doctor

FOR EACH ROW

BEGIN

UPDATE Staff

SET Salary = CASE

WHEN NEW.Specialty = 'Cardiology' THEN 120000

WHEN NEW.Specialty = 'Neurology' THEN 115000

ELSE 100000

END

WHERE SSN = NEW.SSN;

END;

CREATE TRIGGER UpdatePatientStatus

AFTER INSERT ON Test\_Result

FOR EACH ROW

BEGIN

IF NEW.Result\_Outcome = 'Positive' THEN

UPDATE Patient

SET Status = 'Requires Follow-Up'

WHERE Patient\_ID IN (

SELECT Patient\_ID

FROM Undertakes

WHERE Test\_ID = NEW.Test\_ID

);

END IF;

END$$

DELIMITER ;

DELIMITER $$

CREATE FUNCTION CalculatePatientAge(birthday DATE)

RETURNS INT

BEGIN

DECLARE today DATE;

SET today = CURDATE();

RETURN TIMESTAMPDIFF(YEAR, birthday, today);

END$$

DELIMITER ;

DELIMITER $$

CREATE PROCEDURE ScheduleAppointment(

IN patientID INT,

IN doctorID INT,

IN appDate DATE,

IN appTime TIME,

OUT appointmentID INT )

BEGIN

DECLARE secretaryID INT;

IF NOT EXISTS (

SELECT 1

FROM Appointment

WHERE Doctor\_ID = doctorID AND Appointment\_Date = appDate AND Appointment\_Time = appTime

) THEN

SELECT Secretary\_ID INTO secretaryID

FROM Secretary

ORDER BY RAND()

LIMIT 1;

INSERT INTO Appointment(Appointment\_Date, Appointment\_Time, Doctor\_ID, Secretary\_ID, Patient\_ID)

VALUES (appDate, appTime, doctorID, secretaryID, patientID);

SET appointmentID = LAST\_INSERT\_ID();

ELSE

SIGNAL SQLSTATE '45000'

SET MESSAGE\_TEXT = 'Doctor not available at the selected time.';

END IF;

END$$

DELIMITER ;

Remark: The codes here are the same as required, but on MySQL code file we tried to modify on some queries since they were giving errors initially (not supported).

**Report:**

The Hospital Management System (HMS) database is an integral component of modern healthcare infrastructure, designed to streamline hospital operations, manage patient data, and support medical staff. This report provides a detailed analysis of the HMS database, focusing on its structure, functionality, and the various SQL queries and operations implemented. Tables and Relationships: The database is composed of multiple interrelated tables such as Staff, Doctor, Patient, Medical Records, Appointment, and others. Each table is designed to store specific types of data. For instance: Staff: contains details of hospital employees. Doctor and Secretary: Subcategories of Staff, with additional information pertinent to their roles. Patient: Stores patient demographics, contact details, and medical history. Data Integrity and Security: The database employs strict access controls, encryption techniques, and relationship constraints (primary and foreign keys) to safeguard sensitive data. This approach ensures data confidentiality and integrity, which are crucial in healthcare settings. Comprehensive Data Handling: The database efficiently manages diverse data types, encompassing patient information, treatment histories, staff records, financial data, and operational logistics like room allocation and pharmacy inventory. Nested Queries: Utilized for complex data retrieval, such as fetching patients who have appointments or those whose IDs meet specific criteria in comparison to medical records. Set Operations: These include cardinality (counting specific data sets) and division operations (finding data not present in a subset). Functions and Procedures: Age Calculation: This function is a crucial tool for patient data analysis, providing the age of patients, which is critical for treatment plans and administrative decisions. Automatic Appointment Scheduling: A procedure that checks doctor availability and schedules appointments accordingly, enhancing the efficiency of the hospital's operations. Data Modification Techniques: UPDATE queries with CASE statements are used for dynamic data modification. For example, updating patient gender data based on specific conditions illustrates the database's adaptability. Data Integrity and Business Rules: Assertions: Used to enforce business logic, such as ensuring the number of patients aligns with the number of diagnoses. Views: Provide simplified representations of complex data, useful for specific queries like identifying high-paying doctors. Triggers: Ensure real-time data integrity, such as by preventing the scheduling of appointments in the past. Set Membership Nested Query: Retrieves patient details for those who have appointments, demonstrating the database's ability to link patient engagements with their medical records. Set Comparison Nested Query: This query identifies patients with IDs greater than any ID in Medical\_Records, useful for data analysis and identifying recent patient records. Set Cardinality Nested Query: Counts the number of patients with medical records, providing insights into the hospital's patient care operations. Multiple Nesting Levels: Fetches appointment details for patients with specific medical records and diagnoses, showcasing the database's capability to handle complex relational data. SQL Division Operation: Identifies patients without diagnoses, crucial for administrative tracking and ensuring comprehensive patient care. Nested Query in the FROM Statement: Illustrates the use of subqueries in data retrieval, which is beneficial for focused data analysis. Nested Query in SELECT Statement: Counts the total number of patients, a fundamental query for hospital management. UPDATE Query with CASE Statement: Demonstrates conditional data updates, a key feature for maintaining accurate and current patient records. Outer Join Query: This query is pivotal in combining patient information with medical records, including those without records, ensuring a complete view of patient data. Create Assessment Query: Ensures that the patient count is always at least the count of patient diagnoses, a crucial integrity check. Create View Query: Simplifies the process of identifying high-salary doctors, aiding in financial analysis and budgeting. Create Trigger Query: Prevents logistical errors by disallowing the insertion of past-dated appointments. Advanced Function: Calculating Age: This function streamlines the process of calculating patient ages, an essential factor in medical treatment and administrative decisions. Advanced Stored Procedure—Automatic Appointment Scheduling: Automates a critical aspect of hospital operations, enhancing overall efficiency.

Here is a full explanation of each of the 30 queries:

1. Query:

SELECT \*

From Staff, Room;

Explanation: It retrieves all columns from the `Staff` table and all columns from the `Room` table, performing a Cartesian product.

1. Query:

SELECT \*

FROM Doctor, Patient\_Diagnosis;

Explanation: It retrieves all columns from the `Doctor` table and all columns from the `Patient\_Diagnosis` table, performing a Cartesian product.

1. Query:

SELECT \*

FROM Staff NATURAL JOIN Doctors;

   ExplanatiPerforms a natural join between `Staff` and `Doctors`, retrieving matching columns.

1. Query:

SELECT \*

FROM Medical Records NATURAL JOIN Patient;

Explanation: Performs a natural join between `Medical\_Records` and `Patient` tables.

1. Query:

SELECT \*

FROM Medical\_Records JOIN Patient\_Diagnosis

USING (RecordNumber)

WHERE Medical\_Records.RecordNumber < Patient\_Diagnosis.Record\_Number;

Explanation: Joins `Medical\_Records` with `Patient\_Diagnosis` based on `RecordNumber` with a conditional statement.

1. Query:

SELECT \*

FROM Financial\_Records JOIN Maintenance

USING (Maintenance\_Date)

WHERE Financial\_Records.Maintenance\_Date >= Maintenance.Maintenance\_Date;

Explanation: Joins `Financial\_Records` with `Maintenance` based on `Maintenance\_Date` with a conditional statement.

1. Query:

SELECT \*

FROM Financial\_Records JOIN Maintenance

ON Financial\_Records.Amount >= Maintenance.Maintenance\_ID;

Explanation: It joins `Financial\_Records` with `Maintenance` based on a conditional statement between `Amount` and `Maintenance\_ID`.

1. Query:

SELECT \*

From Equipment Join Cover

ON Equipment.Category = Cover.Maintenance\_Type;

\*\*Explanation:\*\* Joins `Equipment` with `Cover` based on matching `Category` and `Maintenance\_Type`.

1. Query:

SELECT p1.Patient\_ID AS Patient1\_ID, p1.P\_LastName AS Patient1\_LastName,

p2.Patient\_ID AS Patient2\_ID, p2.P\_LastName AS Patient2\_LastName

From Patient P1, join Patient P2.

ON p1.P\_LastName = p2.P\_LastName

WHERE p1.Patient\_ID < p2.Patient\_ID;

Explanation: Self-joins `Patient` to find pairs of patients based on the last name, filtering out duplicate pairs.

1. Query:

SELECT m1.RecordNumber AS RecordNumber1, m1.Patient\_ID AS Patient1\_ID, m1.Diagnosis\_Date AS Diagnosis\_Date1,

           m2.RecordNumber AS RecordNumber2, m2.Patient\_ID AS Patient2\_ID, m2.Diagnosis\_Date AS Diagnosis\_Date2

FROM Medical\_Records m1 JOIN Medical\_Records m2

ON m1.Diagnosis\_Date = m2.Diagnosis\_Date

WHERE m1.RecordNumber < m2.RecordNumber;

Explanation: Self-joins `Medical\_Records` to find records based on matching diagnosis dates, filtering out duplicate pairs.

1. Query:

SELECT DISTINCT Department

FROM Staff;

Explanation: Retrieves distinct departments from the `Staff` table.

1. Query:

SELECT DISTINCT Medicine\_Name

FROM Medicine;

Explanation retrieves distinct medicine names from the `Medicine` table.

1. Query:

SELECT \*

FROM Staff

WHERE LastName LIKE 'Sm%';

Explanation: It retrieves all columns from the `Staff` table where the `LastName` starts with 'Sm'.

1. Query:

SELECT \*

FROM Patient

WHERE P\_PhoneNumber LIKE '%555%';

Explanation: It retrieves all columns from the `Patient` table where the phone number contains '555'.

1. Query:

SELECT DoctorID, Specialty

FROM Doctors

ORDER BY Specializing ASC;

Explanation: Retrieves `DoctorID` and `Specialty` from the `Doctors` table, ordering by `Specialty` in ascending order.

1. Query:

SELECT RecordNumber, Patient\_ID

FROM Medical\_Records

ORDER BY Patient\_ID DESC;

Explanation: Retrieves `RecordNumber` and `Patient\_ID` from `Medical\_Records`, ordering by `Patient\_ID` in descending order.

1. Query:

SELECT FirstName, LastName, 'Doctor' AS Role

FROM Doctors

UNION

SELECT FirstName, LastName, 'Secretary' AS Role

FROM Secretaries;

Explanation: Retrieves `FirstName` and `LastName` from both `Doctors` and `Secretaries` tables, categorizing them as 'Doctor' and 'Secretary', and merging the results using `UNION`.

1. Query:

SELECT DISTINCT Category AS Equipment\_Category

FROM Equipment

UNION

SELECT DISTINCT Form AS Medication\_Form

FROM Medicine;

Explanation: Retrieves distinct `Category` from the `Equipment` table and distinct `Form` from the `Medicine` table, combining the results using `UNION`.

1. Query:

SELECT Patient\_ID

FROM Medical\_Records

INTERSECT

SELECT Patient\_ID

FROM Insurance;

Explanation: It retrieves common `Patient\_ID` values from `Medical\_Records` and `Insurance` tables using `INTERSECT`.

1. Query:

SELECT SSN

FROM Staff

INTERSECT

SELECT StaffSSN AS SSN

FROM Doctors;

Explanation: It retrieves common `SSN` values from `Staff` and `Doctors` tables using `INTERSECT`.

1. Query:

SELECT Patient\_ID

FROM Medical\_Records

EXCEPT

SELECT Patient\_ID

FROM Insurance;

Explanation: Retrieves `Patient\_ID` values from the `Medical\_Records` table that are not present in the `Insurance` table using `EXCEPT`.

1. Query:

SELECT SSN

FROM Staff

EXCEPT

SELECT StaffSSN

FROM Doctors;

Explanation: Retrieves `SSN` values from the `Staff` table that are not found in the `Doctors` table using `EXCEPT`.

1. Query:

SELECT P\_FirstName, P\_LastName

FROM Patient

ORDER BY P\_LastName ASC;

Explanation: It retrieves `P\_FirstName` and `P\_LastName` from the `Patient` table, ordering by `P\_LastName` in ascending order.

1. Query:

SELECT P\_First

Name, P\_LastName

FROM Patient

ORDER BY P\_LastName ASC;

Explanation: Duplicate a query from the provided list. Repeated for some reason.

1. Query:

SELECT COUNT(\*) AS TotalStaffMembers

FROM Staff;

Explanation: It counts the total number of staff members in the `Staff` table.

1. Query:

SELECT AVG(YearsOfExperience) AS AverageExperience

FROM Staff

WHERE SSN IN (SELECT StaffSSN FROM Doctors);

Explanation: It calculates the average years of experience among staff members whose SSN exists in the `Doctors` table.

1. Query:

SELECT Secretary\_ID, COUNT(\*) AS TotalAppointments

FROM Appointment

Group by Secretary\_ID;

Explanation: It counts the total number of appointments for each `Secretary\_ID` from the `Appointment` table, grouping the counts by `Secretary\_ID`.

1. Query:

SELECT Department, AVG(Salary) AS AverageSalary

FROM Staff

Group by Department;

Explanation: It calculates the average salary for each department from the `Staff` table, grouping the results by `Department`.

1. Query:

SELECT Department, AVG(Salary) AS AverageSalary

FROM Staff

Group By Department

HAVING AVG(Salary) > 60000;

Explanation: It calculates the average salary for each department, returning only those departments where the average salary is greater than $60,000.

1. Query:

SELECT Department, COUNT(\*) AS StaffCount

FROM Staff

Group By Department

HAVING COUNT(\*) >= 3;

Explanation: It counts the number of staff in each department, returning only those departments with at least three staff members.

 🡪These queries encompass various SQL functionalities, from basic data retrieval to complex joins, aggregations, filtering, and sorting operations.

The HMS database is a robust and sophisticated system designed to manage the complex requirements of a modern hospital. Its comprehensive structure, combined with advanced SQL queries, functions, and procedures, ensures efficient data management. This system not only supports the daily operational needs of the hospital but also enhances patient care and facilitates strategic decision-making through accurate data analysis and management. The implementation of this database reflects a deep understanding of healthcare needs and a commitment to leveraging technology for optimal hospital management and patient care.

Remark: We couldn’t run the code since it was giving errors.We tried our best to fix it (change queries, inserting more instances), but we couldn’t.

**THE END!**