Entity Relationship Diagram - Document

Name of Database: Hospital Management Database

DATABASE DESCRIPTION:

This database contains 18 tables.

TABLE DESCRIPTIONS ARE AS FOLLOWS:

1. Patients

Stores patient details.

- Patient_ID (INT, PRIMARY KEY, NOT NULL)
- First_Name (VARCHAR(50), NOT NULL)
- Last_Name (VARCHAR(50), NOT NULL)
- DOB (DATE, NOT NULL)
- Gender (CHAR(1), NOT NULL)
- Contact_Number (VARCHAR(15), NOT NULL)
- Email (VARCHAR(100), NULL)
- Blood_Type (VARCHAR(3), NULL)
- Insurance_Provider (VARCHAR(100), NULL)
- Insurance_Number (VARCHAR(50), NULL)

2. Patient_Addresses

Stores addresses of patients.

- Address_ID (INT, PRIMARY KEY, NOT NULL)
- Patient_ID (INT, FOREIGN KEY, NOT NULL)
- Address_Line1 (VARCHAR(255), NOT NULL)
- Address_Line2 (VARCHAR(255), NULL)
- City (VARCHAR(100), NOT NULL)
- State (VARCHAR(100), NOT NULL)
- ZIP_Code (VARCHAR(10), NOT NULL)

3. Doctors

Stores doctor details.

- Doctor_ID (INT, PRIMARY KEY, NOT NULL)

- First_Name (VARCHAR(50), NOT NULL)
- Last_Name (VARCHAR(50), NOT NULL)
- Specialization (VARCHAR(100), NOT NULL)
- Contact_Number (VARCHAR(15), NOT NULL)
- Email (VARCHAR(100), NOT NULL)
- Experience_Years (INT, NOT NULL)
- Department_ID (INT, NULL)

4. Appointments

Stores appointment details between patients and doctors.

- Appointment_ID (INT, PRIMARY KEY, NOT NULL)
- Patient_ID (INT, FOREIGN KEY, NOT NULL)
- Doctor_ID (INT, FOREIGN KEY, NOT NULL)
- Appointment_Date (DATE, NOT NULL)
- Appointment_Time (TIME, NOT NULL)
- Status (VARCHAR(50), NOT NULL)
- Reason (VARCHAR(255), NULL)

5. Medical_Records

Stores patient medical records.

- Record_ID (INT, PRIMARY KEY, NOT NULL)
- Patient_ID (INT, FOREIGN KEY, NOT NULL)
- Doctor_ID (INT, FOREIGN KEY, NOT NULL)
- Record_Date (DATE, NOT NULL)

6. Diagnosis

Stores diagnoses and prescriptions related to medical records.

- Diagnosis_ID (INT, PRIMARY KEY, NOT NULL)
- Record_ID (INT, FOREIGN KEY, NOT NULL)
- Diagnosis_Details (TEXT, NOT NULL)
- Prescription (TEXT, NULL)

7. Billing

Stores patient billing details.

- Bill_ID (INT, PRIMARY KEY, NOT NULL)
- Patient_ID (INT, FOREIGN KEY, NOT NULL)
- Total_Amount (DECIMAL(10,2), NOT NULL)
- Bill_Date (DATE, NOT NULL)
- Payment_Status (VARCHAR(50), NOT NULL)

8. Payment_Details

Stores payment transactions.

- Payment_ID (INT, PRIMARY KEY, NOT NULL)
- Bill_ID (INT, FOREIGN KEY, NOT NULL)
- Amount_Paid (DECIMAL(10,2), NOT NULL)
- Payment_Date (DATE, NOT NULL)
- Payment_Mode (VARCHAR(50), NOT NULL)

9. Staff

Stores hospital staff details.

- Staff_ID (INT, PRIMARY KEY, NOT NULL)
- First_Name (VARCHAR(50), NOT NULL)
- Last_Name (VARCHAR(50), NOT NULL)
- Role (VARCHAR(100), NOT NULL)
- Contact_Number (VARCHAR(15), NOT NULL)
- Email (VARCHAR(100), NULL)
- Department_ID (INT, NULL)
- Salary (DECIMAL(10,2), NOT NULL)
- Shift_Timings (VARCHAR(50), NOT NULL)

10. Rooms

Stores room information.

- Room_ID (INT, PRIMARY KEY, NOT NULL)
- Room_Type (VARCHAR(50), NOT NULL)
- Capacity (INT, NOT NULL)
- Occupied_Status (VARCHAR(50), NOT NULL)

11. Admissions

Stores patient admission records.

- Admission_ID (INT, PRIMARY KEY, NOT NULL)
- Patient_ID (INT, FOREIGN KEY, NOT NULL)
- Room_ID (INT, FOREIGN KEY, NOT NULL)
- Admission_Date (DATE, NOT NULL)
- Discharge_Date (DATE, NULL)
- Diagnosis (TEXT, NOT NULL)

12. Inventory

Stores inventory details.

- Item_ID (INT, PRIMARY KEY, NOT NULL)
- Item_Name (VARCHAR(100), NOT NULL)
- Category (VARCHAR(100), NOT NULL)
- Quantity (INT, NOT NULL)
- Supplier_ID (INT, FOREIGN KEY, NOT NULL)
- Purchase_Date (DATE, NOT NULL)

13. Suppliers

Stores supplier details.

- Supplier_ID (INT, PRIMARY KEY, NOT NULL)
- Supplier_Name (VARCHAR(100), NOT NULL)
- Contact_Number (VARCHAR(15), NULL)
- Email (VARCHAR(100), NULL)
- Address (TEXT, NULL)
- Category_Provided (VARCHAR(100), NOT NULL)

14. Tests

Stores diagnostic test details.

- Test_ID (INT, PRIMARY KEY, NOT NULL)
- Test_Name (VARCHAR(100), NOT NULL)
- Description (TEXT, NULL)
- Price (DECIMAL(10,2), NOT NULL)

15. Lab_Reports

Stores lab reports for patients.

- Report_ID (INT, PRIMARY KEY, NOT NULL)
- Patient_ID (INT, FOREIGN KEY, NOT NULL)
- Doctor_ID (INT, FOREIGN KEY, NOT NULL)
- Report_Date (DATE, NOT NULL)

16. Test_Results

Stores results of medical tests.

- Result_ID (INT, PRIMARY KEY, NOT NULL)
- Report_ID (INT, FOREIGN KEY, NOT NULL)
- Test_ID (INT, FOREIGN KEY, NOT NULL)
- Results (TEXT, NOT NULL)

17. Pharmacy

Stores medicine information.

- Medicine_ID (INT, PRIMARY KEY, NOT NULL)
- Medicine_Name (VARCHAR(100), NOT NULL)
- Category (VARCHAR(100), NOT NULL)
- Price (DECIMAL(10,2), NOT NULL)

18. Stock

Stores stock details of medicines.

- Stock_ID (INT, PRIMARY KEY, NOT NULL)
- Medicine_ID (INT, FOREIGN KEY, NOT NULL)
- Quantity_Available (INT, NOT NULL)
- Expiry_Date (DATE, NOT NULL)

THE RELATIONSHIP DESCRIPTIONS ARE AS FOLLOWS:

1. Patients and Patient_Addresses

Type: One-to-Many
Cardinality:

- Patients: 1 (Each patient must have at least one address)
- Patient_Addresses: 1..* (A patient can have multiple addresses)

2. Patients and Appointments

Type: One-to-Many
Cardinality:

- Patients: 1 (A patient must have at least one appointment)
- Appointments: 0..* (A patient can have multiple appointments or none)

3. Doctors and Appointments

Type: One-to-Many
Cardinality:

- Doctors: 1 (A doctor must have at least one appointment)
- Appointments: 0..* (A doctor can have multiple appointments or none)

4. Patients and Medical_Records

Type: One-to-Many
Cardinality:

- Patients: 1 (A patient must have at least one medical record)
- Medical_Records: 0..* (A patient can have multiple medical records or none)

5. Doctors and Medical_Records

Type: One-to-Many
Cardinality:

- Doctors: 1 (A doctor must have at least one medical record)
- Medical_Records: 0..* (A doctor can create multiple medical records or none)

6. Medical_Records and Diagnosis

Type: One-to-One
Cardinality:

- Medical_Records: 1 (Each medical record must have one diagnosis)
- Diagnosis: 1 (Each diagnosis must belong to one medical record)

7. Patients and Billing

Type: One-to-Many
Cardinality:

- Patients: 1 (Each patient must have at least one bill)
- Billing: 0..* (A patient can have multiple bills or none)

8. Billing and Payment_Details

Type: One-to-Many
Cardinality:

- Billing: 1 (Each bill must have at least one payment)

- Payment_Details: 0..* (A bill can have multiple payments or none)

9. Patients and Admissions

Type: One-to-Many
Cardinality:

- Patients: 1 (Each patient can be admitted at least once)
- Admissions: 0..* (A patient can have multiple admissions or none)

10. Rooms and Admissions

Type: One-to-Many
Cardinality:

- Rooms: 1 (Each room can have at most one admission at a time)
- Admissions: 0..* (A room can be used for multiple admissions over time)

11. Inventory and Suppliers

Type: Many-to-One
Cardinality:

- Inventory: 1..* (Each inventory item must have one supplier)
- Suppliers: 1 (A supplier can supply multiple inventory items)

12. Patients and Lab_Reports

Type: One-to-Many
Cardinality:

- Patients: 1 (Each patient must have at least one lab report)
- Lab_Reports: 0..* (A patient can have multiple lab reports or none)

13. Doctors and Lab_Reports

Type: One-to-Many
Cardinality:

- Doctors: 1 (Each doctor must be associated with at least one lab report)
- Lab_Reports: 0..* (A doctor can be associated with multiple lab reports or none)

14. Lab_Reports and Test_Results

Type: One-to-Many
Cardinality:

- Lab_Reports: 1 (Each lab report must have at least one test result)
- Test_Results: 0..* (A lab report can have multiple test results or none)

15. Tests and Test_Results

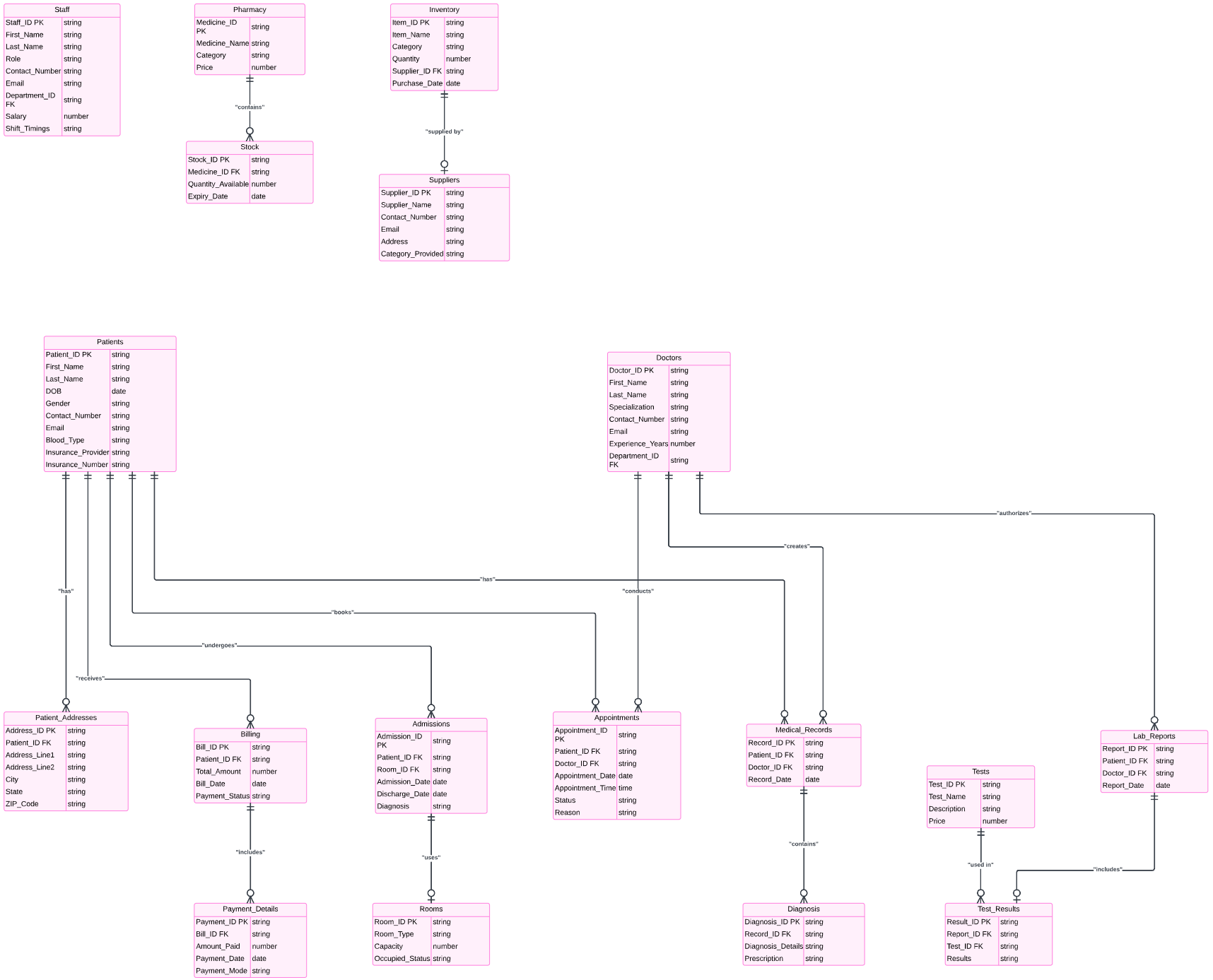
Type: One-to-Many
Cardinality:

- Tests: 1 (Each test must be performed at least once)
- Test_Results: 0..* (A test can be performed multiple times or none)

16. Pharmacy and Stock

Type: One-to-Many
Cardinality:

- Pharmacy: 1 (Each medicine must have at least one stock entry)
- Stock: 0..* (A medicine can have multiple stock entries or none)


Staff
Staff_ID PK string
First_Name string
Last_Name string
Role string
Contact_Number string
Email string
Department_ID FK string
Salary number
Shift_Timings string
Pharmacy
Medicine_ID PK string
Medicine_Name string
Category string
Price number
"contains"
Stock
Stock_ID PK string
Medicine_ID FK string
Quantity_Available number
Expiry_Date date
Inventory
Item_ID PK string
Item_Name string
Category string
Quantity number
Supplier_ID FK string
Purchase_Date date
"supplied by"
Suppliers
Supplier_ID PK string
Supplier_Name string
Contact_Number string
Email string
Address string
Category_Provided string
Patients
Patient_ID PK string
First_Name string
Last_Name string
DOB date
Gender string
Contact_Number string
Email string
Blood_Type string
Insurance_Provider string
Insurance_Number string
Doctors
Doctor_ID PK string
First_Name string
Last_Name string
Specialization string
Contact_Number string
Email string
Experience_Years number
Department_ID FK string
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"creates"
"has"
"has"
"conducts"
"books"
"undergoes"
"receives"
Patient_Addresses
Address_ID PK string
Patient_ID FK string
Address_Line1 string
Address_Line2 string
City string
State string
ZIP_Code string
Billing
Bill_ID PK string
Patient_ID FK string
Total_Amount number
Bill_Date date
Payment_Status string
"includes"
Payment_Details
Payment_ID PK string
Bill_ID FK string
Amount_Paid number
Payment_Date date
Payment_Mode string
Admissions
Admission_ID PK string
Patient_ID FK string
Room_ID FK string
Admission_Date date
Discharge_Date date
Diagnosis string
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Rooms
Room_ID PK string
Room_Type string
Capacity number
Occupied_Status string
Appointments
Appointment_ID PK string
Patient_ID FK string
Doctor_ID FK string
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Appointment_Time time
Status string
Reason string
Medical_Records
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Patient_ID FK string
Doctor_ID FK string
Record_Date date
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Diagnosis
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Record_ID FK string
Diagnosis_Details string
Prescription string
Tests
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Test_Name string
Description string
Price number
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Test_Results
Result_ID PK string
Report_ID FK string
Test_ID FK string
Results string
Lab_Reports
Report_ID PK string
Patient_ID FK string
Doctor_ID FK string
Report_Date date
"includes"