Hospital Database

Doctor (Doc_ID, Doc_Name, Gender, DOB, Specialist, Qualification, Contact, Address, Dept_No)

Department (Dept_No, Dept_Name, Room_No, Floor, HOD, Estd_Date)

Staff (Staff_ID, Staff_Name, Category(nurse, lab technician, cashier, security), Designation, DOB, Contact, Address, Dept_No)

Patient (Pat_ID, Pat_Name, DOB, Gender, Contact, Address)

In_Patient (Pat_ID, Date_Of_Admission, Bed_No, Start_Time, End_Time)

In_Patient_Prescription(Pat_ID, Pres_ID)

Appointment (App_ID, Pat_ID, Doc_ID, Nurse_ID, Consult_Room_No, Date, Time)

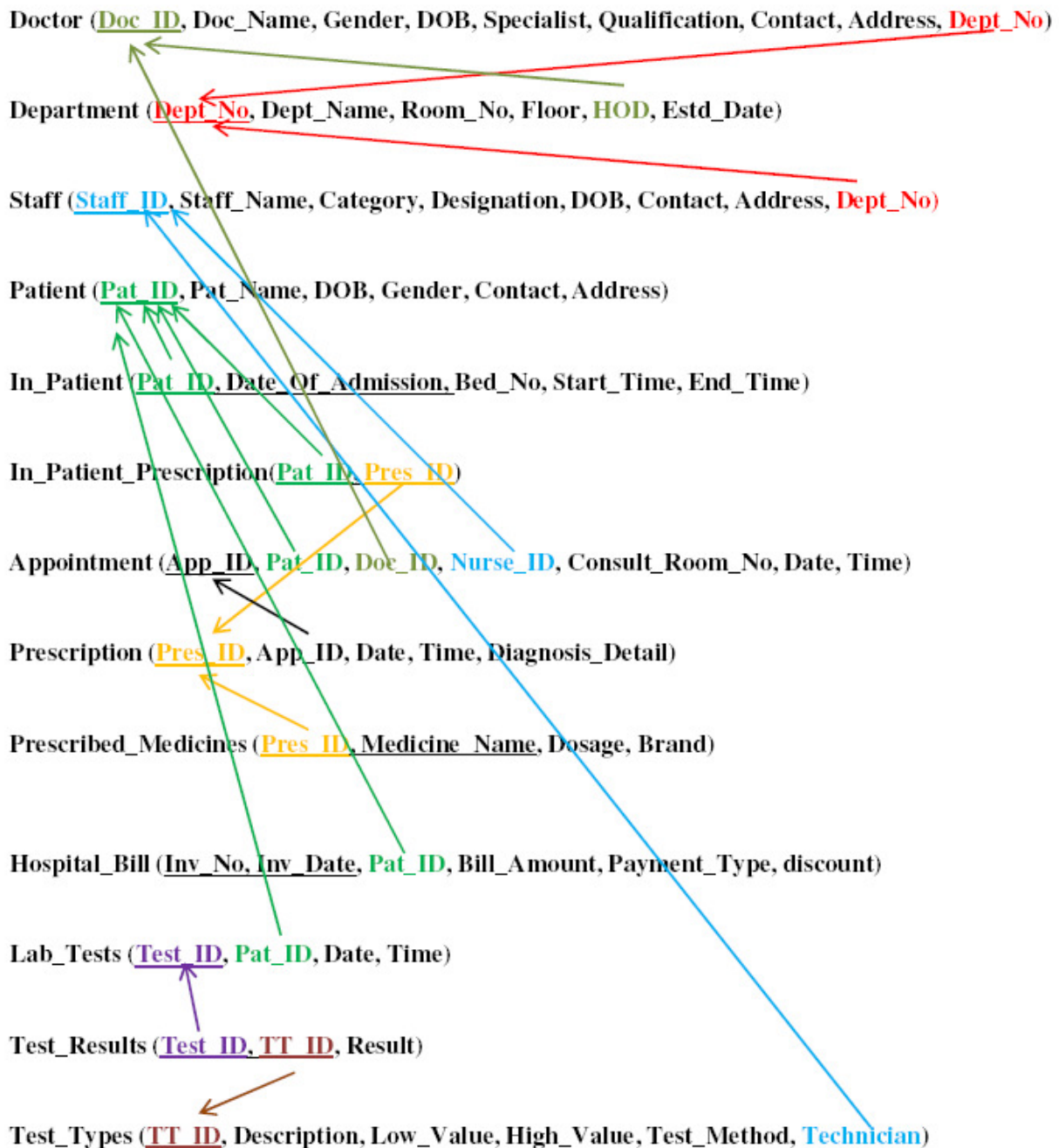Prescription (Pres_ID, App_ID, Date, Time, Diagnosis_Detail)

Prescribed_Medicines (Pres_ID, Medicine_Name, Dosage, Brand)

Hospital_Bill (Inv_No, Inv_Date, Pat_ID, Bill_Amount, Payment_Type (cash/credit card/debit card), discount)

Lab_Tests (Test_ID, Pat_ID, Date, Time)

Test_Results (Test_ID, TT_ID, Result)

Test_Types (TT_ID, Description, Low_Value, High_Value, Test_Method, Technician)

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Department (Dept_No, Dept_Name, Room_No, Floor, HOD, Estd_Date)

Staff (Staff_ID, Staff_Name, Category, Designation, DOB, Contact, Address, Dept_No)

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Hospital_Bill (Inv_No, Inv_Date, Pat_ID, Bill_Amount, Payment_Type, discount)

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Questions:

1. Create all tables in Hospital database as per the requirement given below;

a) The primay key for each table to be created as specified (refer database)

b) Appropriate data type and size should be chosen for each attribute

c) Appropriate integrity constraints should be used while creating tables (NULL, NOT NULL, FOREIGN KEY, CHECK) – Refer Figure 1

d) The values for some attributes should be as follows; include appropriate CHECK constraints to achieve them.

i) Primary key values should be created with uniformity. For example, Doc_ID can be like 'D0001' [five characters long and start with 'D'], Staff_ID like 'S0001', Pres_ID like 'PR00001' and so on.

ii) Attributes and permitted values (you can decide and include such values wherever required)

Attributes	Table	Permitted values
Qualification	Doctor	'MBBS', 'MS', 'MD', 'BDS', 'MDS' …
Specialist	Doctor	'Diabetes', 'Ophthalmology', 'Cardiology', 'General medicine', …
Dept_Name	Department	'Cardiology', 'Intensive care unit' 'Neurology' 'Oncology' 'Obstetrics and gynaecology' 'Diabetes' …
Estd_Date	Department	Should be later than '01-Jan-2010'
Category	Staff	'Nurse', 'Lab technician', 'Attender', 'Helper' …
Designation	Staff	'Staff nurse', 'Head nurse', 'Technician', 'Senior technician', 'Senior attender', 'Junior attender' …
Gender	Patient	'M', 'F', and 'T' (for third gender)
Start_time	In_Patient	Date in start_time attribute should not be older than the date_of_admission value. Also, it should not be later than End_time.
Description	Test_Types	You can use the names of tests like 'Blood test', 'Urine test', etc.

2. Populate each table with appropriate, valid and meaningful data.

3. Add some attributes with few tables and justify the additions.

4. Write DML queries to achieve the following;

a) Find the details of all doctors.

b) Display all the hospital bill details.

c) List the doctors who are specialized in 'Cardiology' and 'Neurology'

d) List all the appointments made for consultation room number 111, on '11-Jan-2020'.

e) Display all the test types that have the values in the range of 25 and 75.

f) Find the diagnosis details of the patient with prescription id 'PR00012'.

g) Display the name of the patients whose gender is female or the contact number is 9878987890.

h) Find the staff name and staff id who are not working in the department 'D102'

i) Find the patients who are admitted on '01-May-2020' in the bed 100.

j) Delete the test results that are 'Positive'

k) Increase the discount with 5% more for all the patients whose bill amount is greater than 100000.

l) Change the HOD of cardiology department with doctor 'D0003'

m) Delete the prescribed medicines records that have the brand name 'XYZ'

n) Modify the low value and high value to 10 and 30 respectively for the clinical test 'urine'

o) Update the contact number of all staffs who are in the category 'Nurse'

p) Delete the staff records that have designations 'junior attender' or 'technician' and belongs to the department 'D190'.