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18-Jan-2025
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SQL Case Study: Database Design

- Database Design for Healthcare System.

for Healthcare Records

II

Key Requirements:

- Doctor & Patient are

* 1. Patient Information. Two main entities.

- PatientID, Name, DOB: Date of Birth.

- Contact-details, Insurance Info.

* 2. Doctors Information.

DoctorID, Name, Speciality, ContactDetails.

3. Medical History: HistoryID,

PatientID, Diagnosis, Allergies, Medications

4. Encounters: EncounterID, PatientID, DoctorID, Date, Type (Appointment, Admission/Discharge).

5. Diagnostic Tests: TestID, PatientID, Test-Type, Result, Test Date.

6. Prescription: PrescID, PatientID, DoctorID, Medication, Dosage, Dispensedetails, Date.

7. Procedures : Procedure ID, Patient ID,
Doctor ID, Procedure Name, Procedure Name.

* Relationships

Patient

↳ can have -

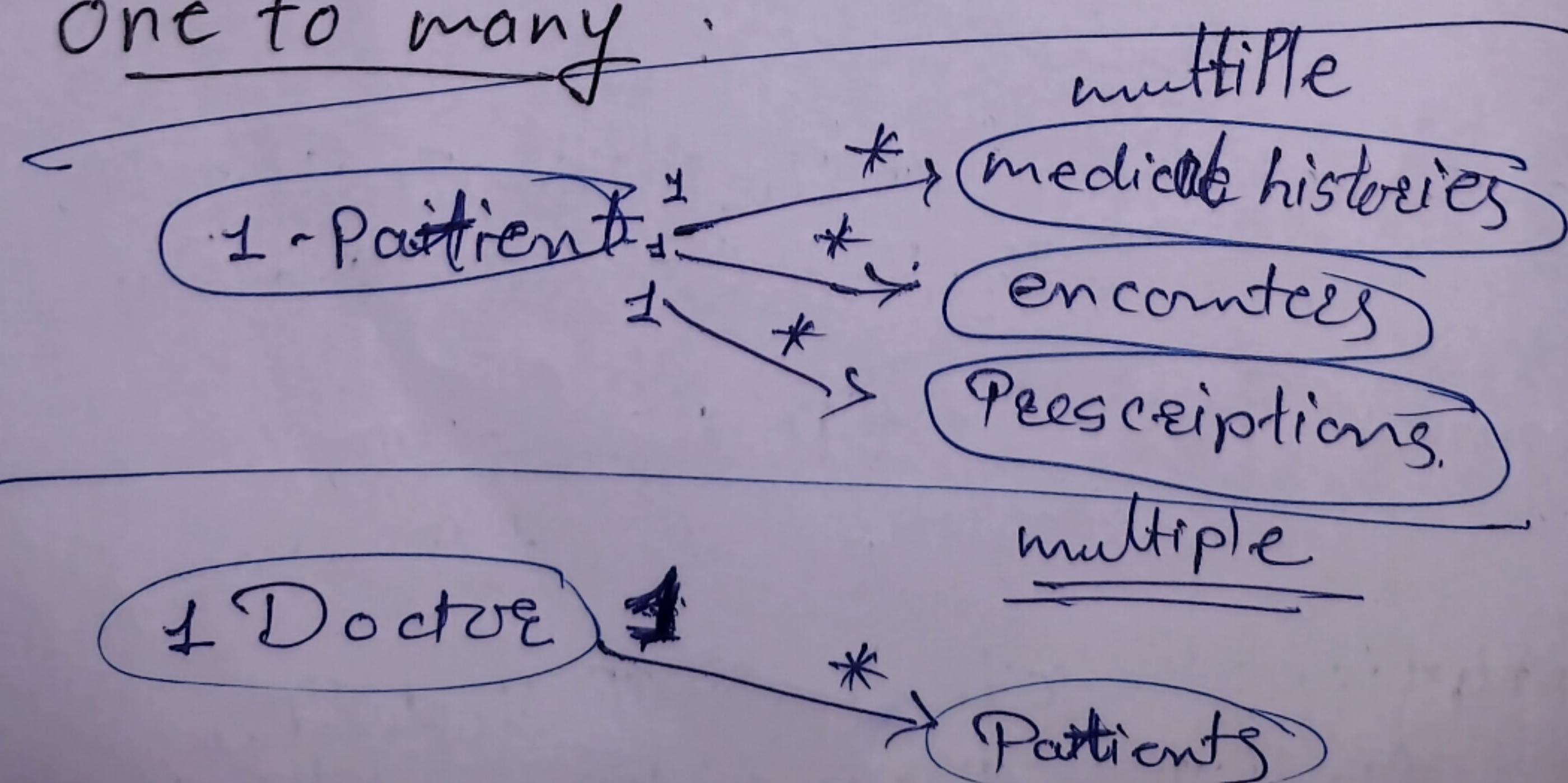
- 1 - multiple : medical histories
- : encounters
- & prescriptions
- : Doctors

Doctor :

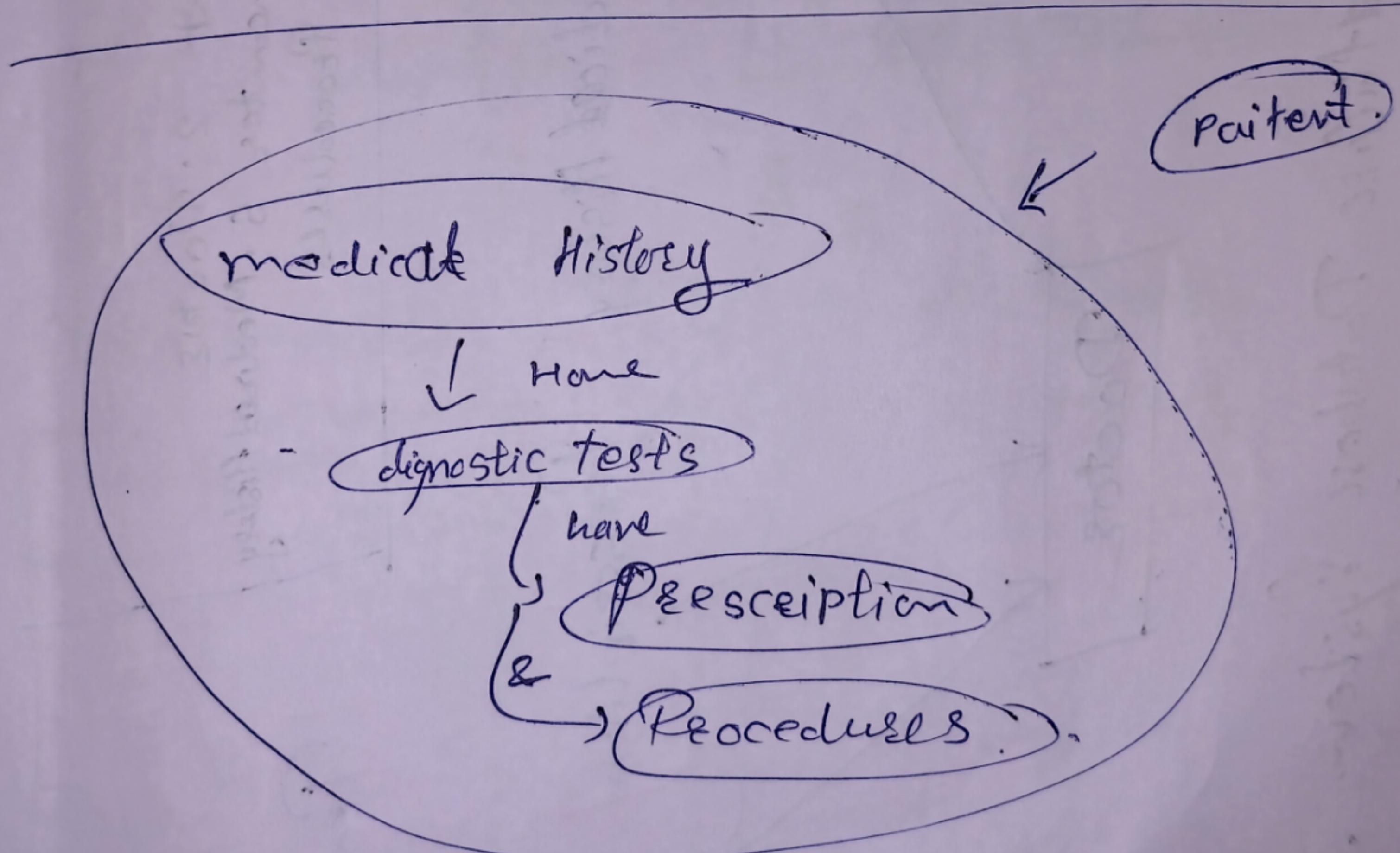
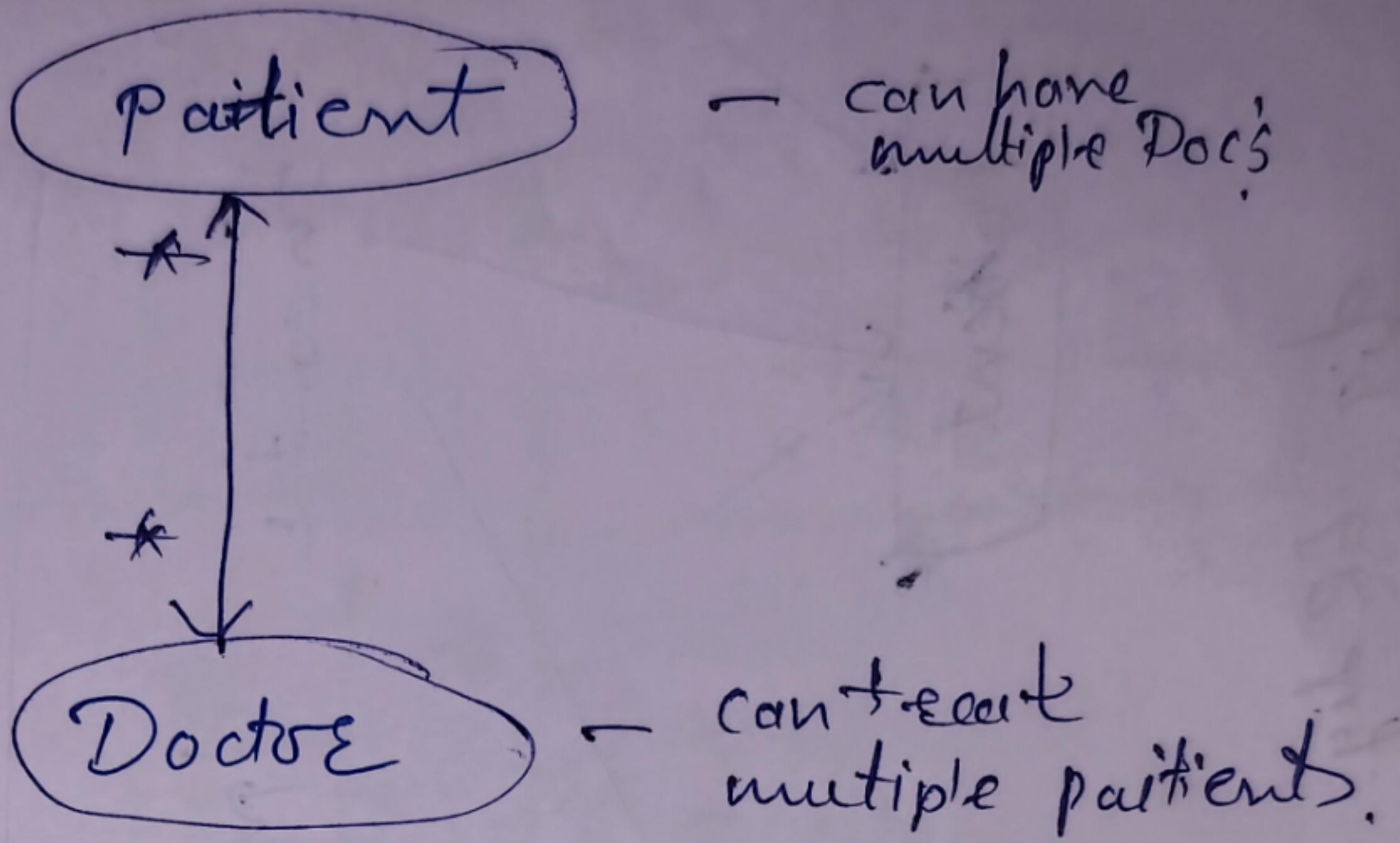
↳ can have :

can treat multiple patients.

One to many :



Many To Many : ③



FK - Foreign key

PK - Patient-ID.

DID - Doctor-ID

PK - Primary key

FK: PID & DID

PK: Prescription-ID

FK: DID & DID

PK: Prescription

3: Diagnostic Test 4: Encounter 5: Medical History
6: Prescription 7: Procedures

ER Diagram

Entities: 1: Patient 2: Doctor

3: Diagnostic Test 4: Encounter 5: Medical History

6: Prescription 7: Procedures

FK: PID & DID

PK: Encounter-ID

PK: Medical History-ID

PK: Prescription-ID

Diagnostic Test

Encounter

Medical History

Prescription

(4)

FK
PID

PK - PID

PK: DID

dig: ER dig. Healthcare Database System.

Constraints :

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PK: Primary Key - In each table. TD.

FK: Foreign Key: PID & DID. whenever Required.

Entity Class diagrams.

PK: Primary Key
FK: Foreign Key
NN: NOT NULL

1. Patient :

Patient	
PatientID	PK, AI
Name	NN
DOB	N
Gender	NN
Contact Details	NN
Insurance Info.	

2. Doctor

Doctor	
DoctorID	PK, AI
Name	NN
Speciality	NN
Contact Details	NN

3. Medical History.

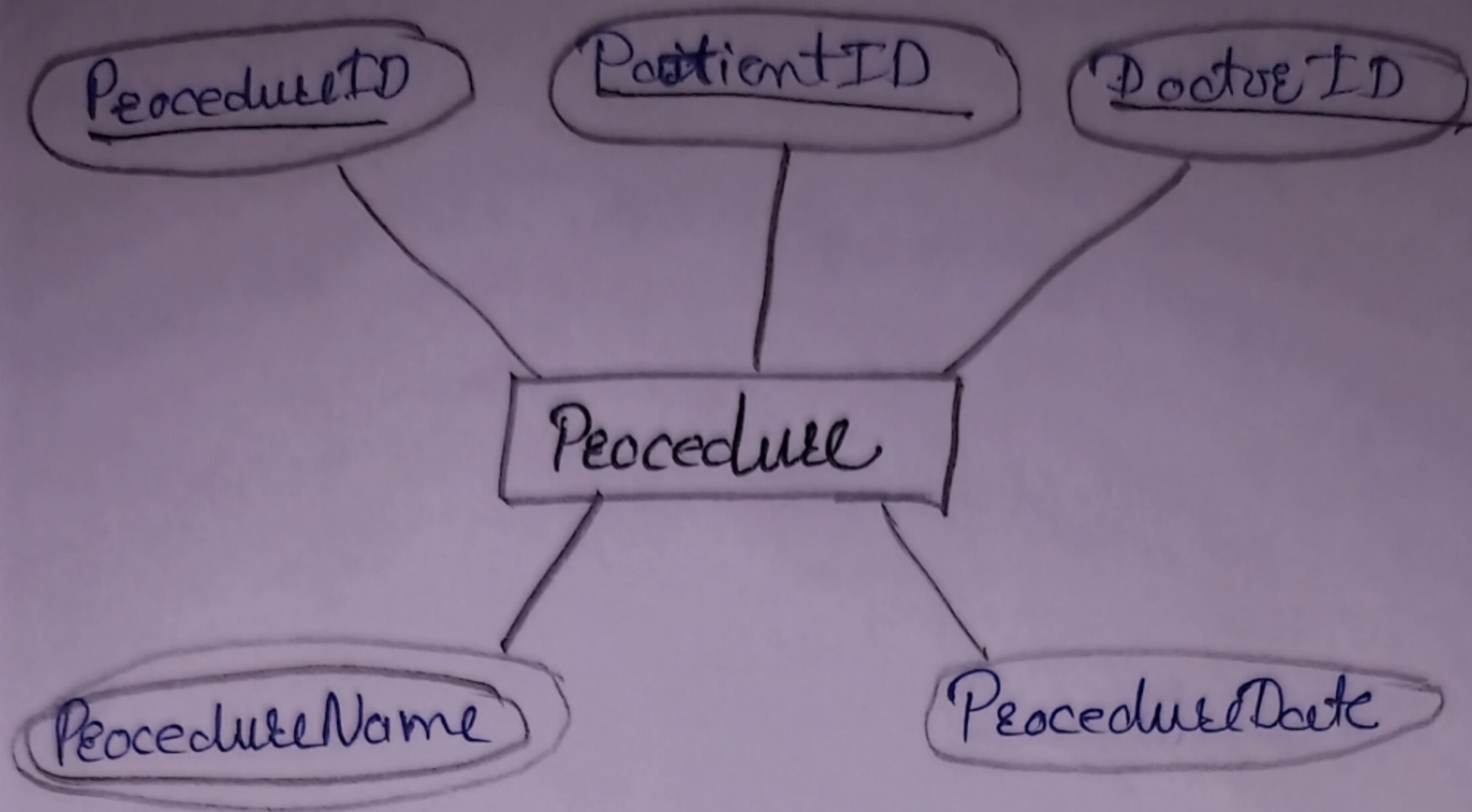
Medical History	
HistoryID	PK, AI
PatientID	FK - patient
Diagnosis	NN
Alergies	
Medications	

4. Encounter Records.

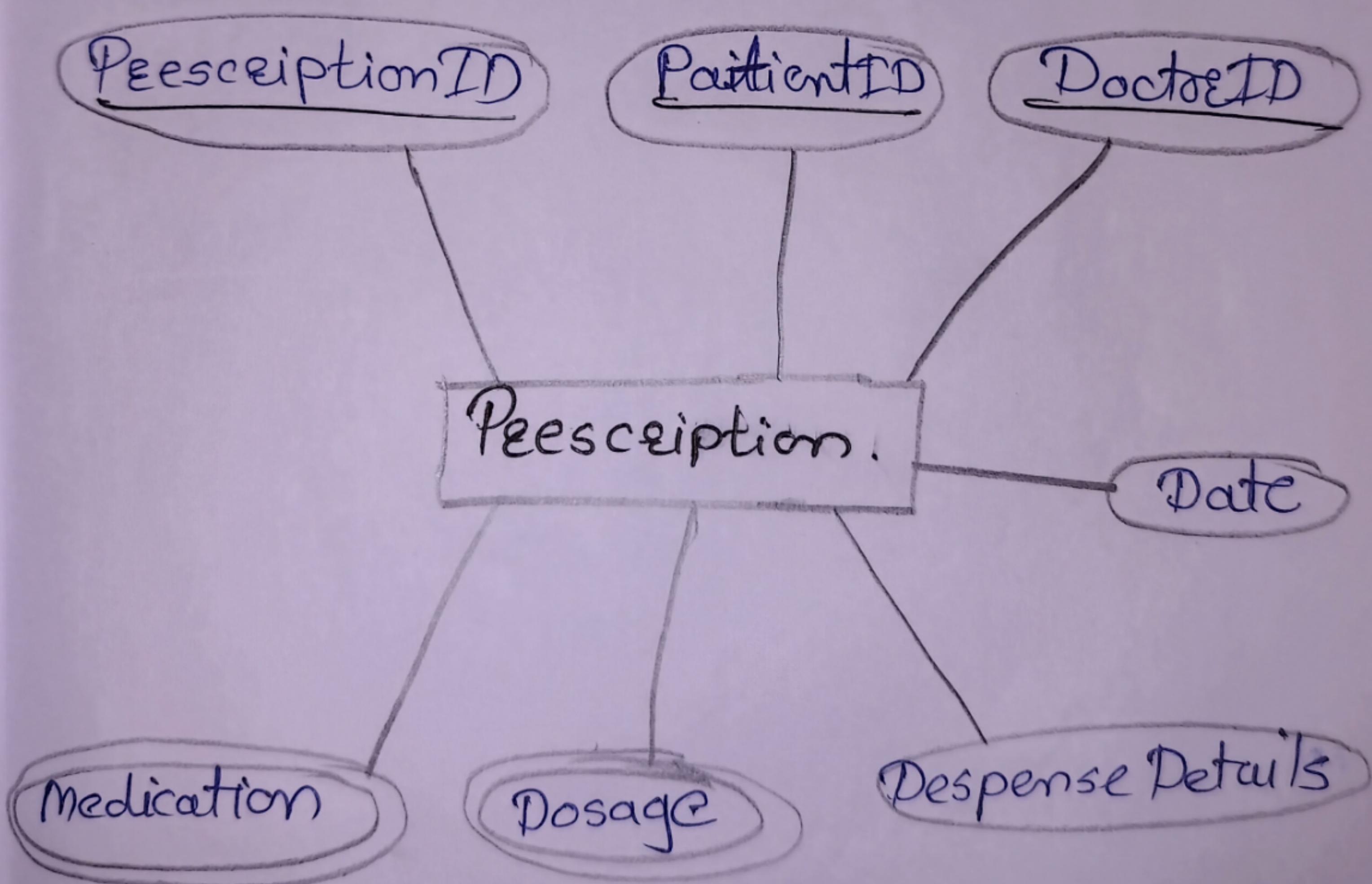
Encounter	
EncounterID	PK - AI
PatientID	FK - patient
DoctorID	FK - DoctorTable
Date	NN
Type	NN

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6. Procedure

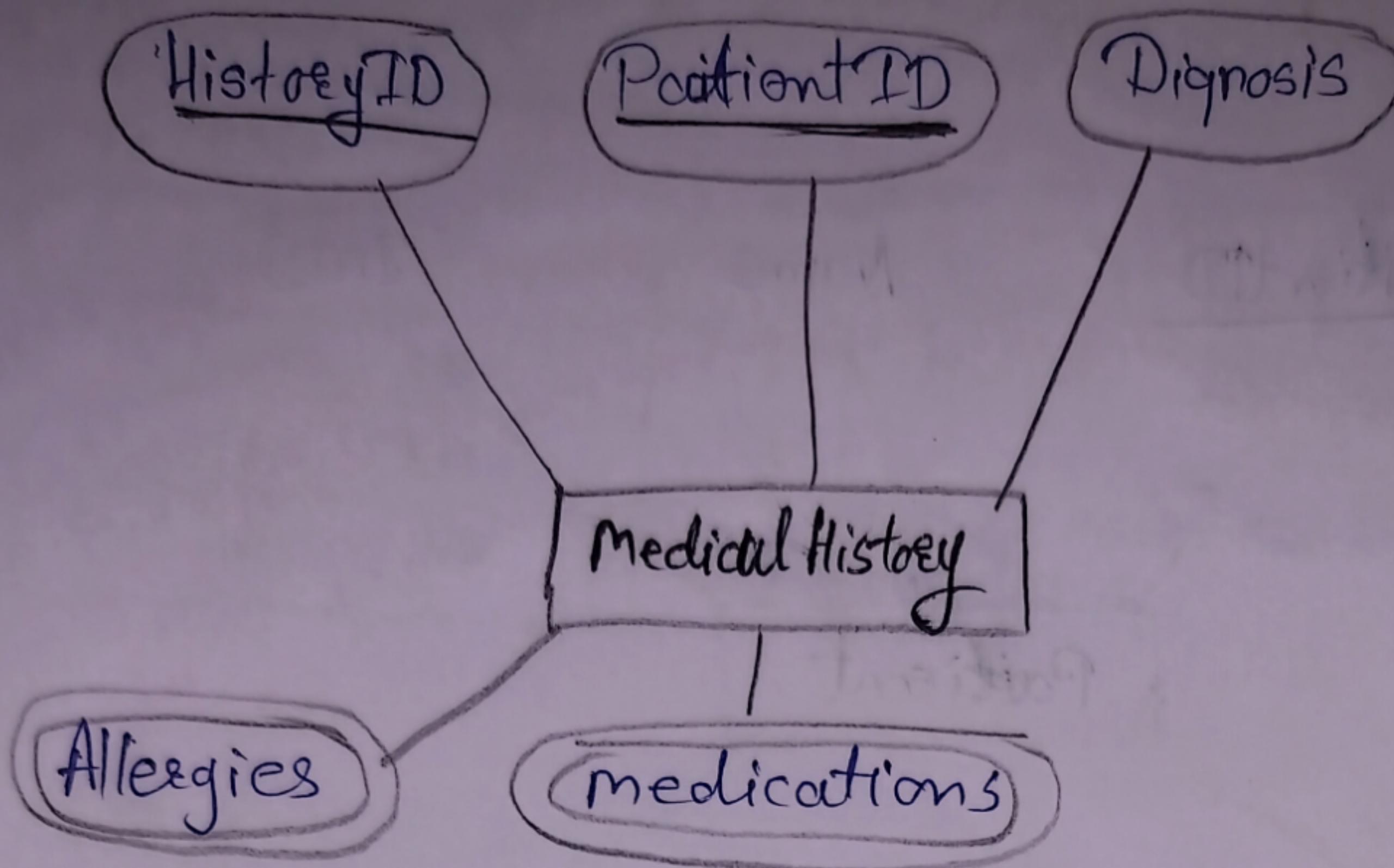


7. Prescription

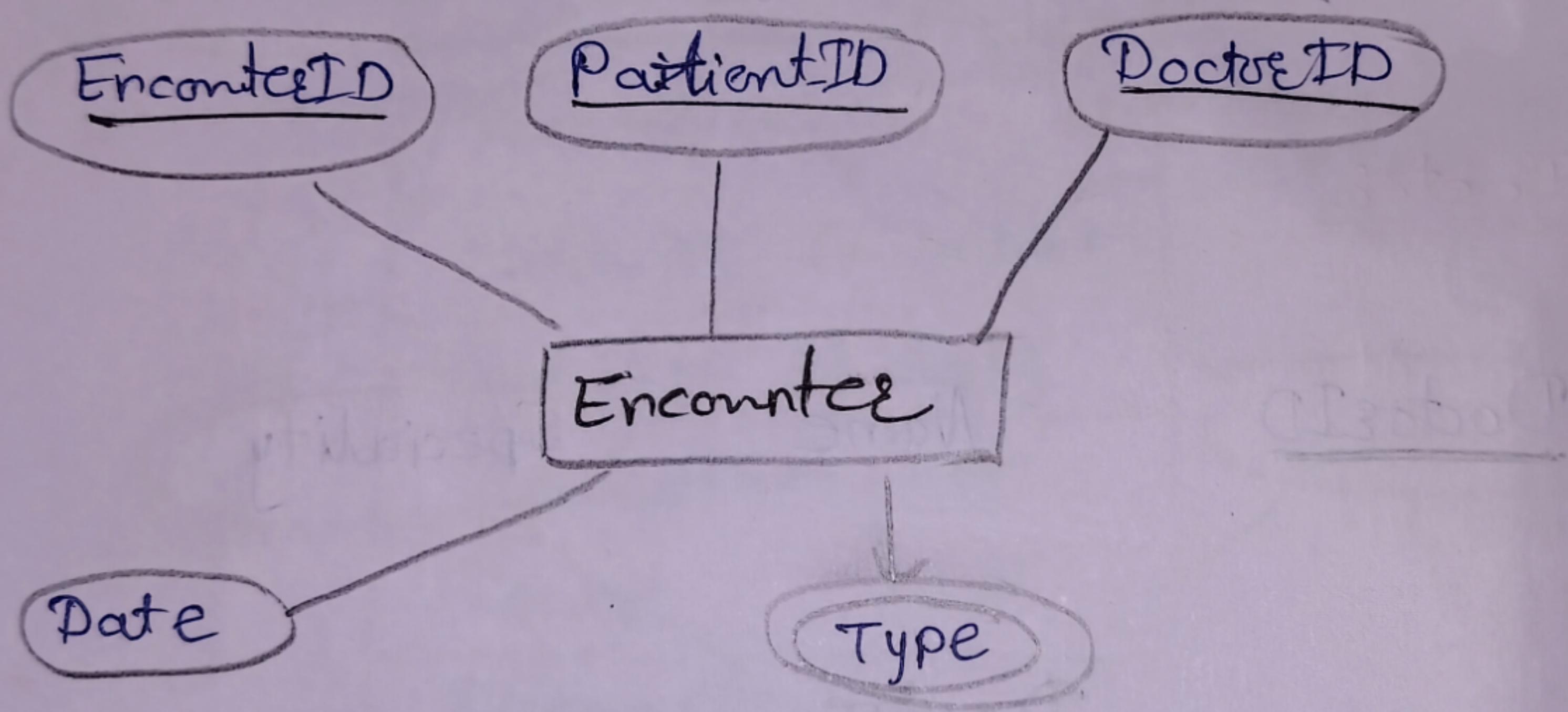


3. Medical History

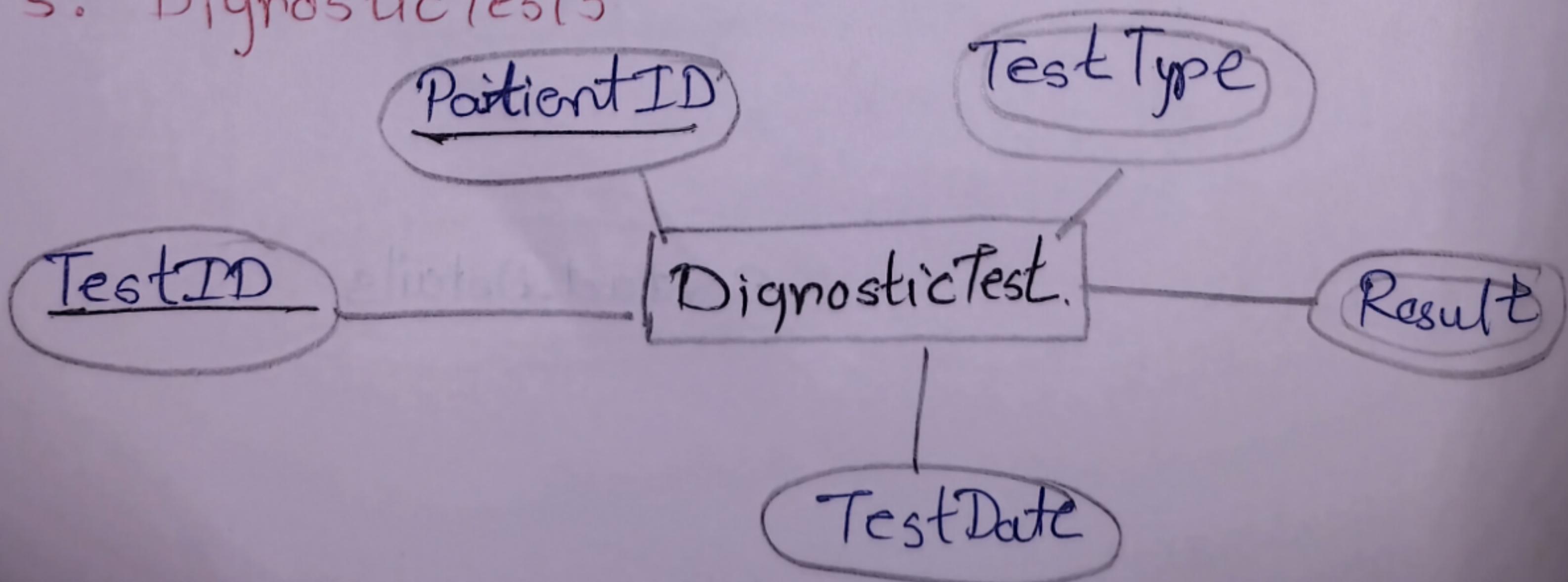
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4. Encounter Records



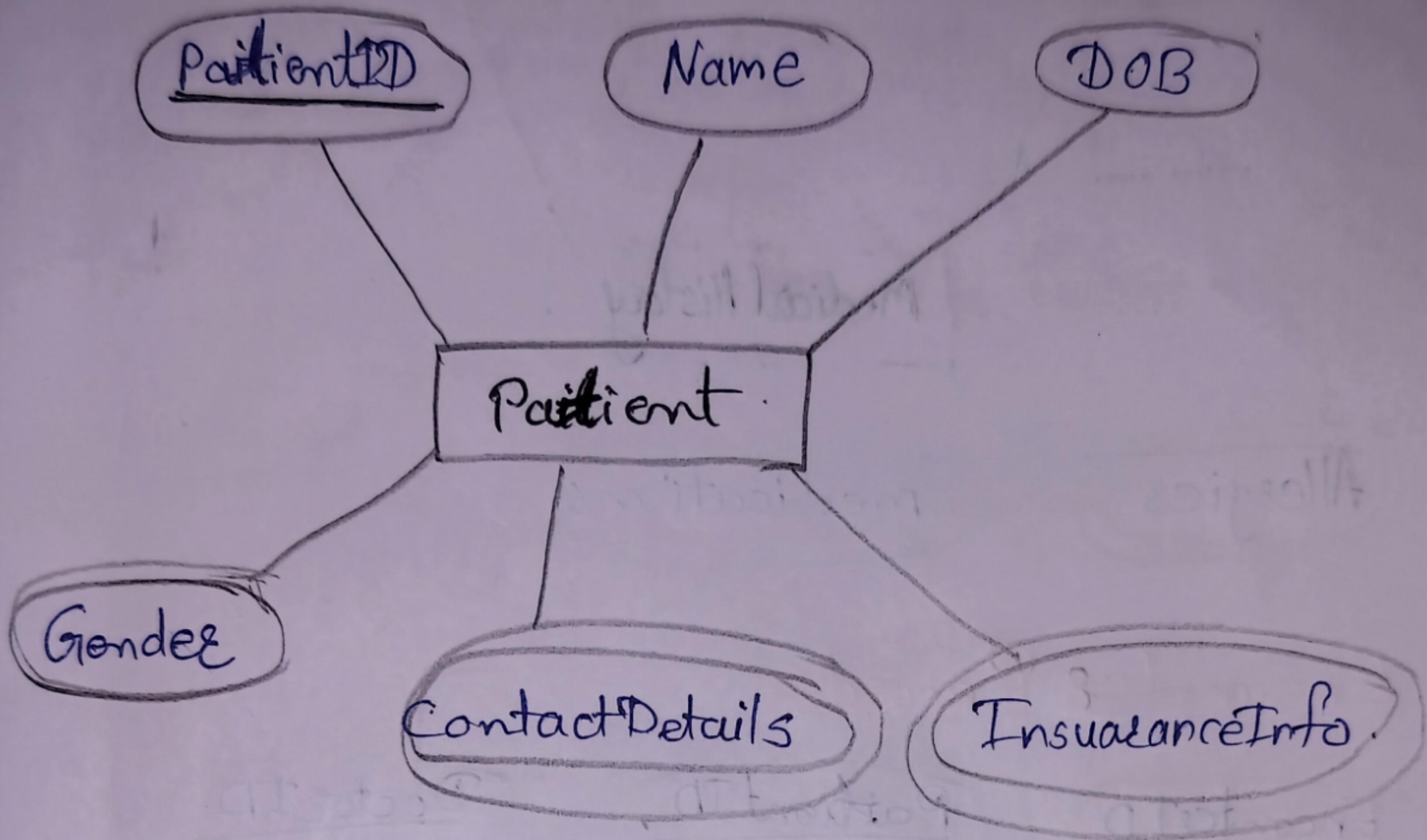
5. Diagnostic Tests



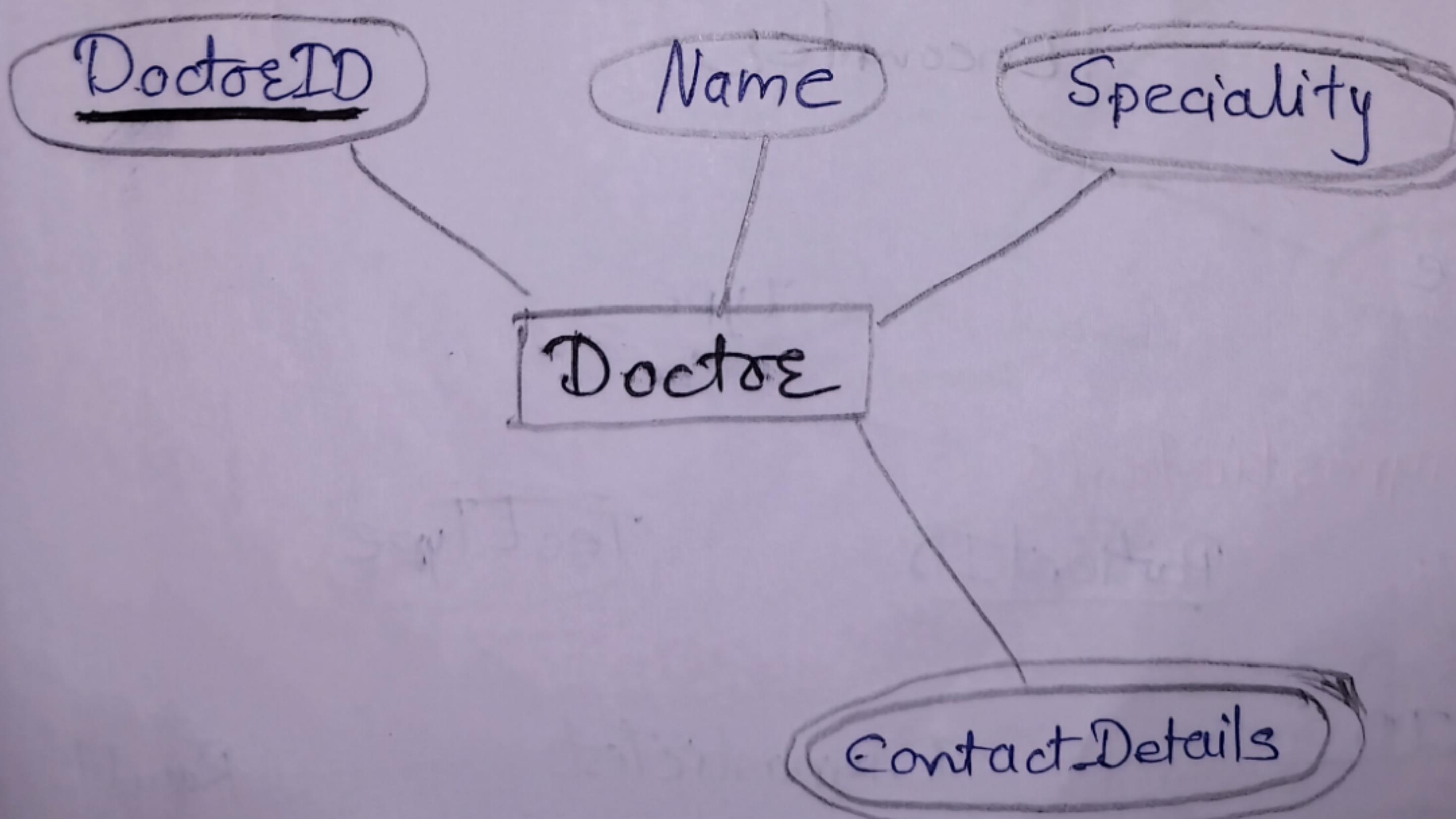
ER Model.

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1: Patient



2: Doctor



5. Diagnostic Test.

DiagnosticTest.	
TestID	PK, AI
PatientID	FK - patient
TestType	NN
Result.	NN
TestDate.	NN

6. Procedure ⑥

Procedure	
ProcedureID	PK, AI
PatientID	FK - Patient
DoctorID	FK - Doctor
ProcedureName	NN
ProcedureDate	NN

7. Prescriptions

Prescriptions.	
Prescription ID	PK, AI
PatientID	FK - patient
DoctorID	FK - Doctor
Medication	NN
Dosage	NN
DispenseDetails	
Date	NN