# CS 4347.501
# PROJECT PHASE 2

**Name:** Hospital Management System

**Team:** 12

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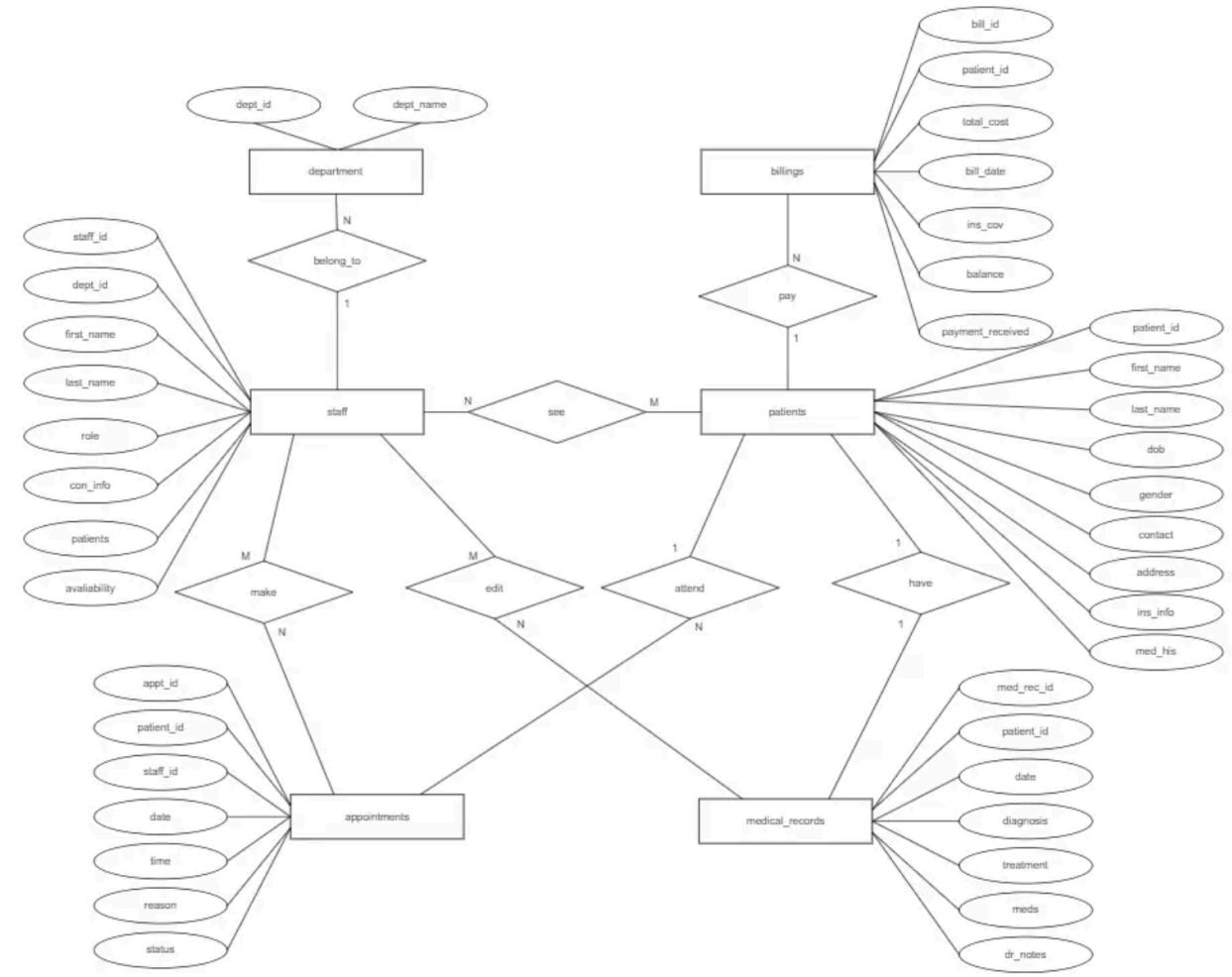
**Take A - ER Diagram**



**Take B - Convert ER Diagram into relations**

**Patients**
Primary Key : Patient_id

| Patient_id | First_name | Last_name | Date_of_birth | Gender | Contact_info | Address | Insurance_info | Medical_history |
|---|---|---|---|---|---|---|---|---|

- Patient_id: Identifier for each patient( integer,not null)
- First_name,last_name: Patient's name(string,not null)
- Date_of_birth: Patient's date of birth( date, not null)
- Gender: (string, null allowed)
- Contact_info: Patient's contact details ( string, not null)
- Address: Patient's residential address (string, not null)
- Insurance_info: Patient's insurance details ( string, null allowed)
- Medical_history: General summary of patient's medical history( text, null allowed)

**Staff**
Primary Key : Staff_id

| Staff_id | First_name | Last_name | Role | Department | Contact_info | Availability | Assigned_patients |
|---|---|---|---|---|---|---|---|

- Staff_id : Unique identifier for each staff member( integer, not null)
- First_name,last_name: Staff Member's name ( string, not null)
- Role: Role of the staff ( string, not null)
- Department: The department they are assigned to( string,not null)
- Contact_info: Staff contact info ( string, not null)
- Availability: The available schedule of the staff ( string, not null)
- Assigned_patients: Number of patients assigned to a staff member ( integer, null allowed)

**Appointments**
Primary Key : Appointment_id
Foreign Keys : Patient_id and Staff_id

| Appointment_id | Patient_id | Staff_id | Date | Time | Reason | Status |
|---|---|---|---|---|---|---|

- Appointment_id: Unique identifier for the appointment (integer,not null)
- Patient_id: Refers to Patient.patient_id ( integer, foreign key, not null)
- Staff_id: Refers to Staff.staff_id (integer, foreign key, not null)
- Date: Appointment date ( date, not null)
- Time: Appointment time ( time, not null)
- Reason: Reason for appointment ( string, not null)
- Status: Status of the appointment ( scheduled,completed or canceled)( string not null)

Foreign Key Actions:

Patient_id: Cascade on delete( if patient record is deleted, delete the appointment)
Staff_id: Set null on delete( if staff record is deleted, the appointment can remain but without assigned staff

**Medical_Records**
Primary Key : Appointment_id
Foreign Keys : Patient_id

| Record_id | Patient_id | Diagnosis | Treatment | Doctor_notes | Medications | Record_date |
|---|---|---|---|---|---|---|

- Record_id: Unique identifier for the medical record( integer, not null, auto-increment)
- Patient_id: Refers to Patient.patient_id ( integer, foreign key, not null)
- Diagnosis: Patient's diagnosis (string, not null)
- Treatment: Treatment provided (string, not null)
- Doctor_notes: Doctor's notes(text, null allowed)
- Medications: List of medications prescribed( string, null allowed)
- Record_date:Date of record creation( date, not null)

Foreign Key Actions:

- Patient_id: Cascade on delete(deleting a patient also deletes related medical records)

**Billing**
Primary Key : Appointment_id
Foreign Keys : Patient_id

| Billing_id | Patient_id | Total_cost | Insurance | Coverage | Payment_ received | Outstanding_ balance | Billing_date |
|---|---|---|---|---|---|---|---|

- Billing_id: unique identifier for the billing record (integer, not null, auto-increment)
- Patient_id: Refers to Patient.patient_id ( integer, foreign key, not null)
- Total_cost: Total cost of services(decimal, not null)
- Insurance: Amount covered by insurance (decimal, null allowed)
- Coverage: Amount covered by insurance (decimal, null allowed)
- Payment_received: payment received(decimal, null allowed)
- Outstanding_balance: outstanding balance after payments( decimal, not null)
- Billing_date: Date of billing(date, not null)

Foreign Key Actions:

- Patient_id: Cascade on delete(deleting a patient also deletes related medical records)

**Convert the ER diagram into a relational database schema.**