

CS 4354 Database Systems
Project Report 2

Team Members:

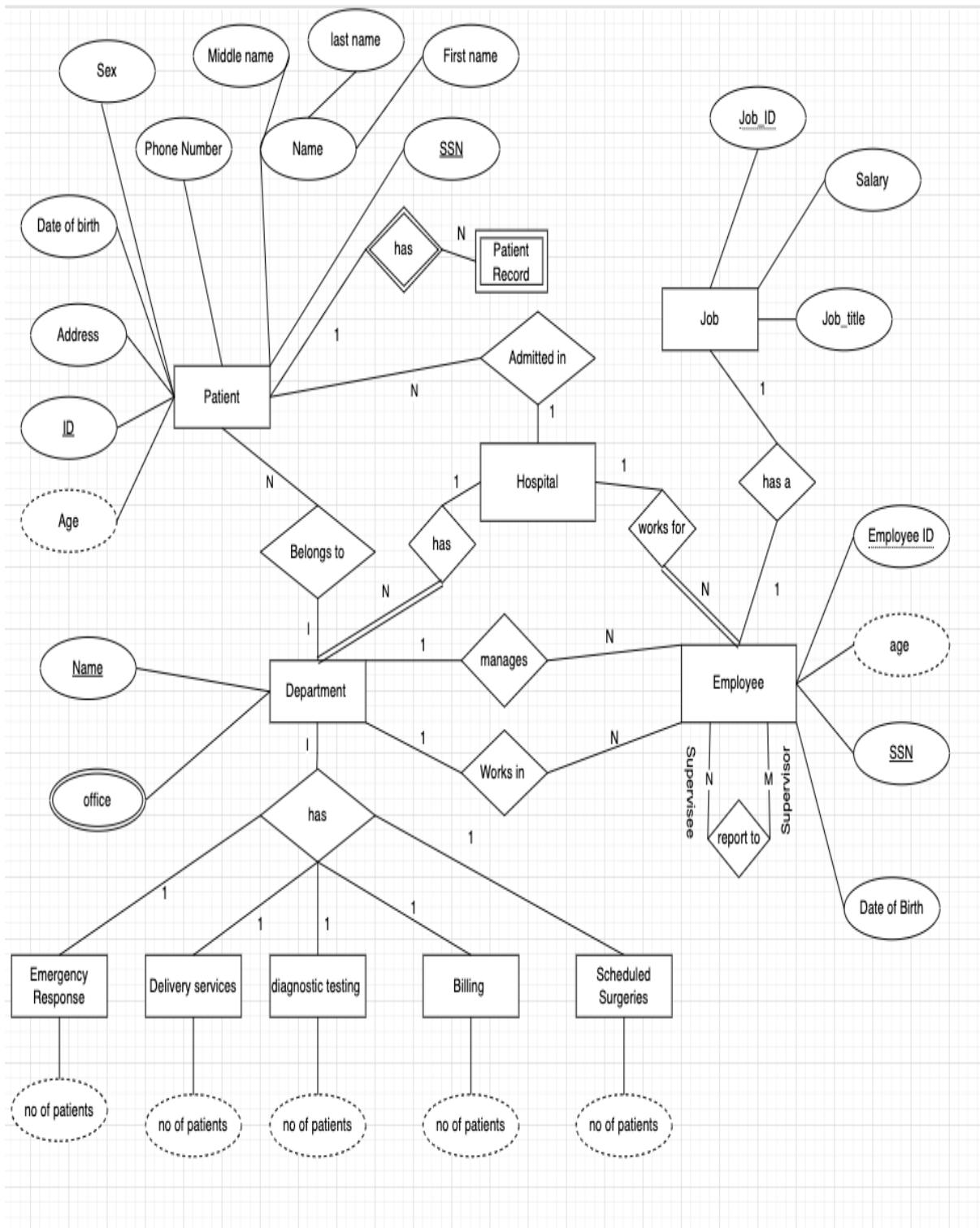
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Summary:

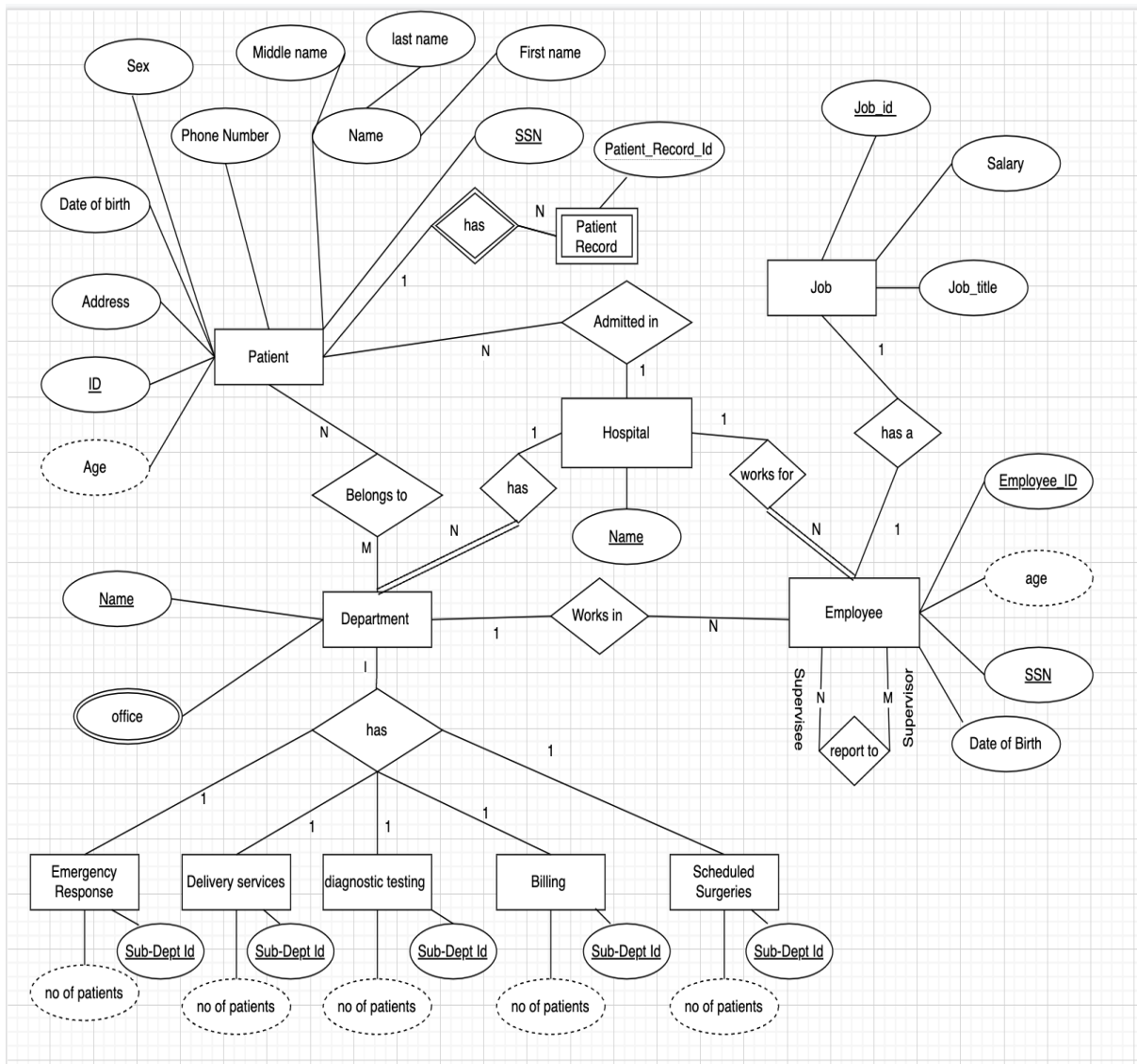
Our team designed a Database design for a Hospital Personnel Management System.

- Hospital is organized into several departments. The department has a **unique** name and **multivalued** attribute office location.
- Department **has** various services entities. They are
 1. Emergency Response
 2. Delivery services
 3. Diagnostic testing
 4. Billing
 5. Scheduled Surgeries(All services have **derived attribute** number of patients)
- Patients are admitted to a specific department. Patients have **unique attributes** ID and SSNs. They also have **derived attribute** age. Other attributes are Address, Date of birth, Phone Number, and Name(**composite attribute**)
- An employee has EmployeeID(**unique**) and SSN(**unique**), date of birth, and age(**derived attributes**)
- Job has three attributes: Job_ID, Salary, and Job_title(**unique**).

ER Diagram:



Updated ER Diagram:



In the updated ER diagram, we have added the primary key “sub-dept id” for entities Emergency Response, Delivery Services, Diagnostic Testing, Billing, and Scheduled Surgeries. We also made the relationship between the patient and department M: N. We just kept one relationship “Works In” between Department and Employee.

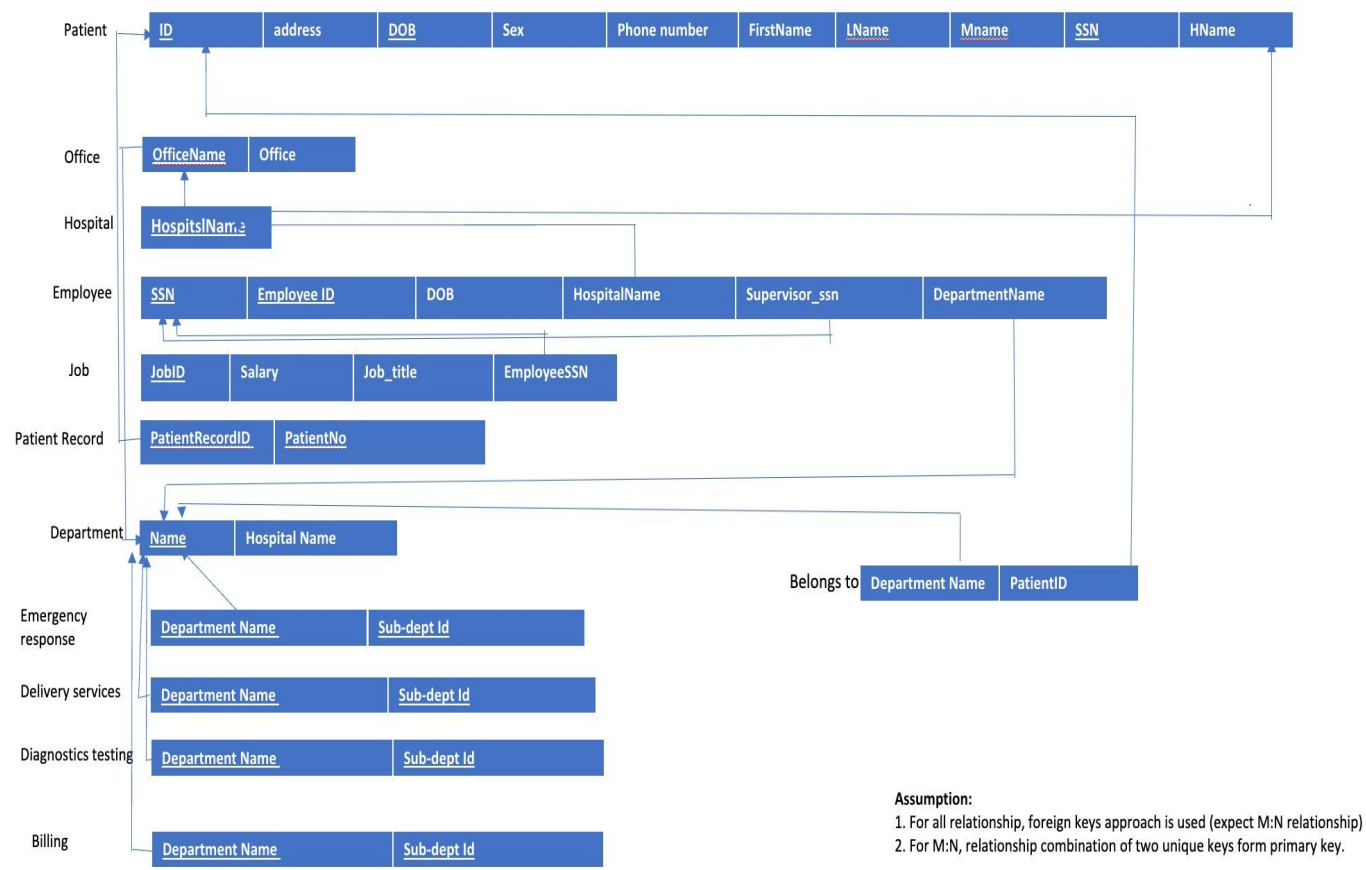
Entity Types – (10)

- Patient
- Job
- Hospital
- Employee
- Patient Record
- Emergency Response
- Delivery services
- Diagnostic testing
- Billing
- Scheduled Surgeries

Relationship Types

- Admitted to: N Patients admitted to 1 Department, partial participation
- Admitted in: N patients admitted in a Hospital, partial participation
- Has: -Department has multiple sub-departments, all partial participation
-1 Hospital has N departments, department->total participation, hospital-> partial participation
- 1 Patient has N patient record, identifying relationship and partial participation
- Manages: 1 Department manages N employees, partial participation
- Works in: N employee work in 1 department, partial participation
- Works for: N employee works for 1 Hospital, employee->total participation, hospital-> partial participation
- Reports to: Recursive relationship between N supervisee who report to M supervisors, partial participation
- Has a: 1 employee has one job, partial participation

Relational Schema Diagram



Relational Schema Diagram for Hospital Management System