**Database Systems**

**Project Description**

**Group 6**

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**- Description of project:**

Hospital Management Database: The purpose of this database is to keep record of hospital data. The hospital needs to assign nurses to provide in-home care or specify that patients want/need transportation to the hospital (if it's immediate or not). The hospital also needs to assign employees (doctors/nurses) and patients to appointments based off of the ailment of the patient. The hospital will also be able to sell medicine that is prescribed in an appointment that is available in store. This will be accomplished by querying based on data like: nurse’s licenses (in order to provide in home care or emergency transportation), ailments (certain ailments would automatically reduce search to specific departments, etc.), doctor specialty (doctors belong to certain department), fulfilling prescriptions, etc.

**- Requirements of the project:**

What is the business purpose or need? The hospital needs to efficiently assign employees to patients, given they require an appointment, in-home care, or send transportation like an ambulance to the home for emergency transportation. The business will bill patients based on diagnoses and medicine prescribed.

What is the problem you are trying to solve?

The problem we are trying to solve is to find relevant employees to fit the needs of a patient that requires an appointment, in-home care, or emergency transportation based on patient criteria and employee schedule

What questions you will be answering?

1. **What ailment has the most appointments?**
2. **What nurse can provide emergency transportation (EVOC license required) for a patient and is available?**
3. **Which doctor has prescribed the most medicines?**

**- Assumptions of the project:**

We assume the hospital contains a full staff of talented doctors who specialize in a specific set of treatments. We assume nurses are available to travel to provide in-home care or emergency transportation depending on licenses owned by nurse. We assume every medicine prescribed is available (unless out of stock). All data is confidential unless noted otherwise.

**- Scope of the project:**

Within the scopes of this project are employee and customer data, departmental data and symptoms that can be grouped into a more general format to reduce query load when finding doctors. Pricing data and travel arrangements are also recorded/polled.

Outside the scope of this project, but could be implemented in future iterations are multiple hospitals, opting for a doctor at a hospital further than the patient’s local hospital, most likely ratings system for doctors/patients

- **Project Design Approach:**

Department

Holds the department name and department ID. Ailments within the department will be represented though the ‘withinA’ relation. Employees in the department will be represented through the ‘belongsTo’ relation. Vehicles that the department own will be represented through the ‘owns’ relation.

Vehicle

Keeps track of vehicle type and VIN number. Vehicles belong to the departments represented through the ‘owns’ relation.

Ailment

Keeps the ailment name and description for each ailment. Ailments belong to a certain department represented by the ‘withinA’ relation.

Employee

Holds employee identification number, salary, and employee’s name. If an employee is scheduled to attend an appointment, this will show up in the ‘attends’ relation. Each employee belongs to a department, which will be shown through the ‘belongsTo’ relation.

Doctor

A child entity of employee — doctors inherit (isA) employee entity attributes and are identified by their employee ID (employeeID), with an additional specifier (specialty) to list their specialty.

Nurse

A child entity of employee — nurses inherit (isA) employee entity attributes and are identified by their employee ID (employeeID), with an additional specifier (license) that determines what they can and cannot do (i.e. vehicle restrictions)

Appointment

Holds the location, date, and time as well as satisfaction level of the patient and whether or not the patient attended the appointment. Requires that at one patient be assigned to each appointment represented through the ‘assigned’ relation. Multiple employees can attend an appointment which is represented through the ‘attends’ relation.

Medicine

Holds medicine ID (medID), the quantity of medicine prescribed, as well as the dosage and cost. An ailment is required to prescribed medicine, as shown in the ‘requires’ relation. Patient will be billed for medicine prescribed, as shown in the ‘billed’ relation.

Patient

Holds patient ID (patientID acts as key), patient name, primary physician, age, weight, and a boolean checking if they require in home care (inHomeCare). When a patient schedules an appointment, this will show up in the ‘assigned’ relation. Each patient that is prescribed medicine based on their appointment with an employee will be billed, shown in the ‘billed’ relation.

Treatment

A weak entity that only exists when there is a billed relation for a Patient that keeps the cost of each treatment.