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CS306 DATABASE PROJECT

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Project Title: Hospital Database Management System

Project Members:

Efe Ballar 30641

Mert Rodop 30745

Damla Aydın 30825

Ilgın Simay Özcan 31099

Tankut Kayra Özerk 31254

Project Description: In this project, we aim to create an efficient hospital database for daily usage. A hospital or other medical facility's healthcare operations may be made more efficient and streamlined with the help of the Hospital Database Management System. This all-inclusive system facilitates the seamless operation of the hospital, improves patient care, and supports administrative duties by offering a central repository for storing, managing, and retrieving a broad variety of data.

Firstly, to make our system more effective and usable, an ISA hierarchy has been structured by combining Doctor, Nurse, and Secretary entities into a superclass of Employees.

Secondly, in our system we have three weak entities: Appointment, Insurance and Bill. The reasons we declared those entities as weak entities are that they have one-to-many relationships, and they have participation constraints.

For instance, Appointment has one weak relationship, which is Reserves, that is with Patient. Patient must reserve an appointment. Also, for there to be an Appointment there must be Patient that Reserves.

Additionally, Insurance has only one relationship with Patient, named Owns. Insurance needs a Patient for it to exist. Finally, Bill has only one relationship with Patient, which is Pays. Patient must pay their bill and if there is a Bill there must be a Patient.

In total, there are twelve entities and twelve relationships, an outline of the project is given below:

Entities:

1. Patient (pid, record_id, birth_date, gender, pname, diagnosis, record_date)
2. Employees (eid, age, name, gender)
3. Doctor (dep_id, dep_name)
4. Nurse (shift_hours)
5. Secretary (desk_id)
6. Appointment (appointment_id, a_date, a_status)
7. Room (room_id, room_number, availability)
8. Medical Equipment (eq_id, eq_name)
9. Medications (med_id, med_price, med_name)
10. Pharmaceutical Supplier (supplier_id, supplier_name, location)
11. Insurance (comp_id, comp_name)
12. Bill (bid, price)

Relationships:

1. Works With
2. Taken Care By
3. Prescribes
4. Takes
5. Assigned To
6. R_Use
7. Appoints
8. Reserves
9. Pays
10. Owns
11. Covered By
12. Sold By

*Attributes of entities are listed in parathesis.

*Primary Keys are shown as underlined.

*Weak entities' primary keys are shown as dashed lines.