

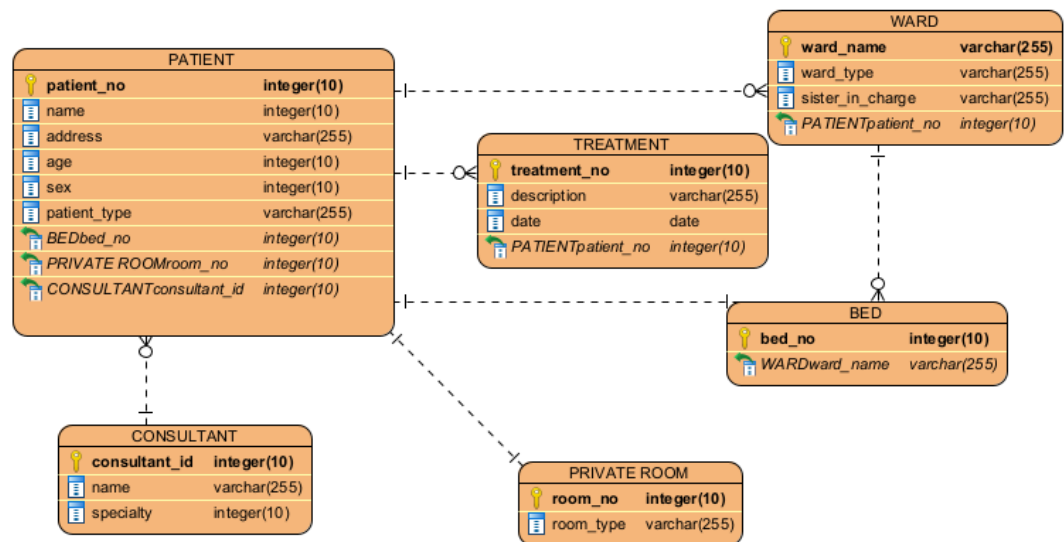
ER Modelling Exercise – Hospital

Consider the following requirements for inpatients at a hospital:

All patients admitted to the hospital are given a unique patient number. The patient's name, address, age, and sex are recorded. Private patients are allocated a private room, identified by the room number. Private rooms are of different types, e.g., standard, deluxe, palatial, etc. NHS patients are allocated a bed in a ward, beds being identified by the ward name and bed number. Wards are of different types, e.g., pediatric, cancer, etc, with a named sister in charge of each one. Each patient is allocated to a named consultant who supervises the medical care of the patient. The consultant decides on the treatments to be given to the patient. A treatment is any medical procedure performed on the patient. Each treatment is given a unique treatment number, and a description of the treatment and the date it is performed are recorded.

Design an E-R diagram for the above database. Derive a corresponding relational scheme from your E-R diagram.

The E-R diagram must show attributes, keys, cardinalities, and constraints. The relational scheme must be in third-normal form, with primary and foreign keys clearly indicated.



relational model:

Tables:

PATIENT (patient_no, name, address, age, sex, patient_type)
Foreign Key consultant_id REFERENCES CONSULTANT(consultant_id)

CONSULTANT (consultant_id, name, specialty)

TREATMENT (treatment_no, description, date)
Foreign Key patient_no REFERENCES PATIENT(patient_no)

PRIVATE ROOM (room_no, room_type)

PRIVATE_PATIENT_ROOM (patient_no)
Foreign Key room_no REFERENCES PRIVATE ROOM(room_no)

WARD (ward_name, ward_type, sister_in_charge)

BED (bed_no)
Foreign Key ward_name REFERENCES WARD(ward_name)

NHS_PATIENT_BED (patient_no)
Foreign Key bed_no REFERENCES BED(bed_no)