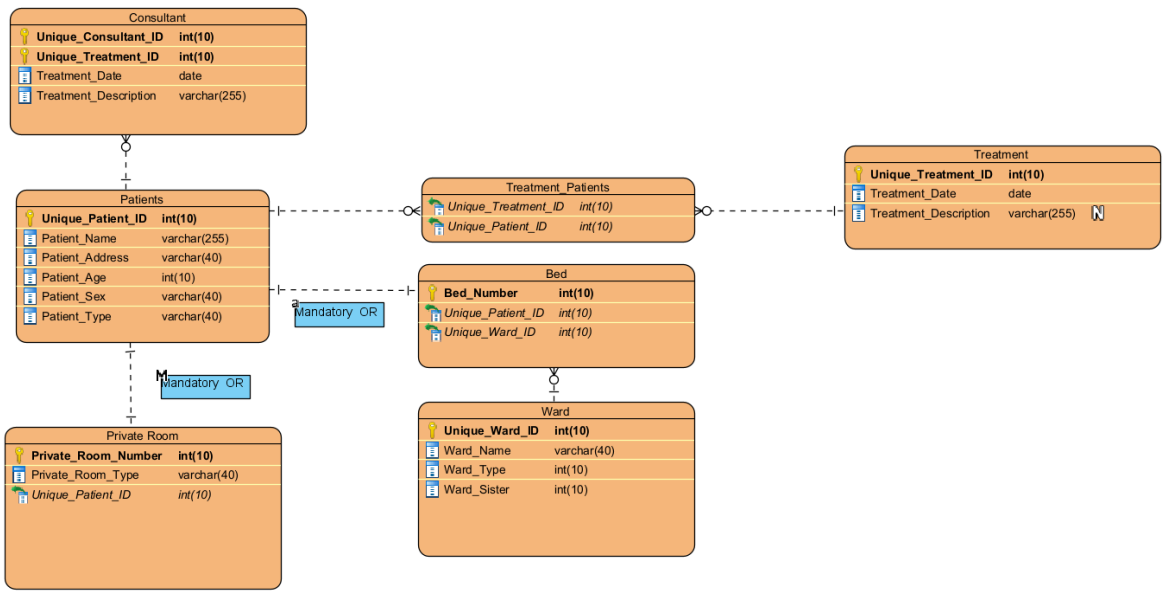
ER Modelling Exercise – Hospital Consider the following requirements for inpatients at a hospital: All patients admitted to the hospital are given a unique patient number. The patient's name, address, age, and sex are recorded. Private patients are allocated a private room, identified by the room number. 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.



Patient: (Unique_Patient_ID {PK} , Patient_Name, Patient_Age, Patient_Sex, Patient_Type)
Private_Room:(Private_Room_Number {PK, fk Unique_Patient_ID Patient} , Patient_Room_Type)
Bed: (Bed_Number {PK , fk Unique_Patient_ID Patient , Unique_Ward_ID Ward}

Consultant: (Unique_Consultant_ID {PK , fk Unique_Treatment_ID} , Treatment_Date, Treatment_Description)

Treatment: Unique_Treatment_ID {PK} , Treatment_Date, Treatment_Description)
Ward: (Unique_Ward_ID {PK} , Ward_Name, Ward_Type, Ward_Sister)