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 (**PatientNumber**, PatientName, Address, Age, Sex)

PrivateRoom (**RoomNumber**, Type, PatientsNumber)
FOREIGN KEY PatientsNumber REFERENCES Patients(Patient Number)

Ward (**WardName**, NamedSister, PatientsNumber)
FOREIGN KEY PatientsNumber REFERENCES Patients(Patient Number)

Bed (**BedNumber, WardName**)
FOREIGN KEY WardName REFERENCES Ward(WardName)

Treatment (**TreatmentNumber**, Description, Date, PatientsPatientNumber)
FOREIGN KEY PatientsPatientNumber REFERENCES Patients(Patient Number)