

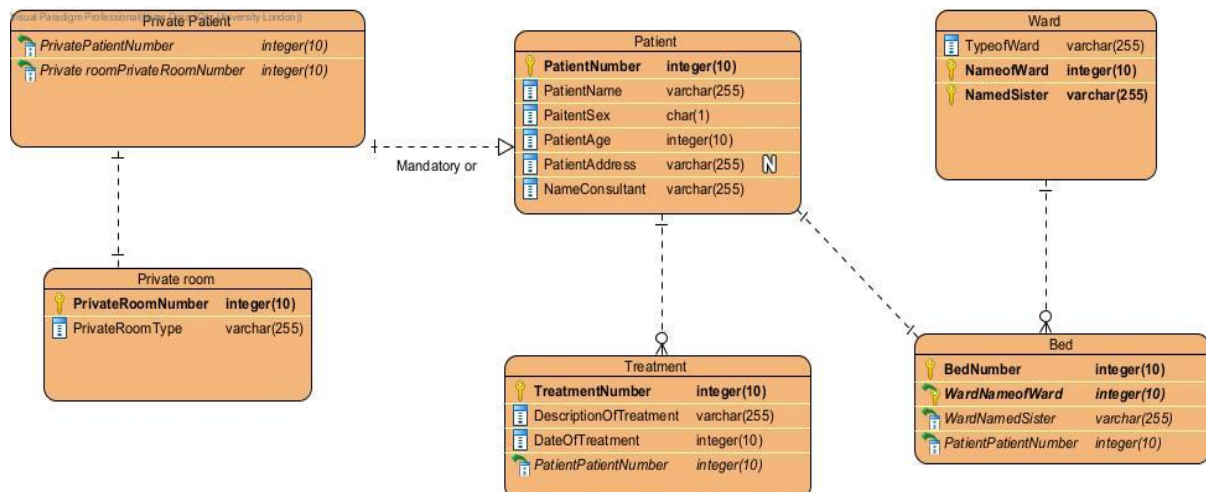
ER Modelling Exercise – Hospital

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**, Patient Name, Patient Address , Patient Age, Patient Sex, Patient Type)

PrivatePatient(**PatientNumber**,PrivatePatientNumber, PrivateRoomNumber)

FOREIGN KEY PatientNumber references Patient(PatientNumber)

FOREIGN KEY PrivateRoomNumber references Private room(PrivateRoomNumber)

Private room(**PrivateRoomNumber**,PrivateRoomType)

Treatment(**TreatmentNumber**,DescriptionOfTreatment,DateOfTreatment,PatientNumber)

FOREIGN KEY PatientNumber references Patient(PatientNumber)

Ward(**NameOfWard**,**NamedSister**,TypeOfWord)

Bed(**BedNumber**,**NameOfWard**,NamedSister,PatientNumber)

FOREIGN KEY PatientNumber references Patient(PatientNumber)

FOREIGN KEY NameOfWard references Ward(NameOfward)

FOREIGN KEY NamedSister references Ward(NamedSister)