Leon Seferi

Homework 3 Task 1

(For full screen viewing of model, please see "Source1.pdf" in the 'HW 3' folder in Databases on GitHub).
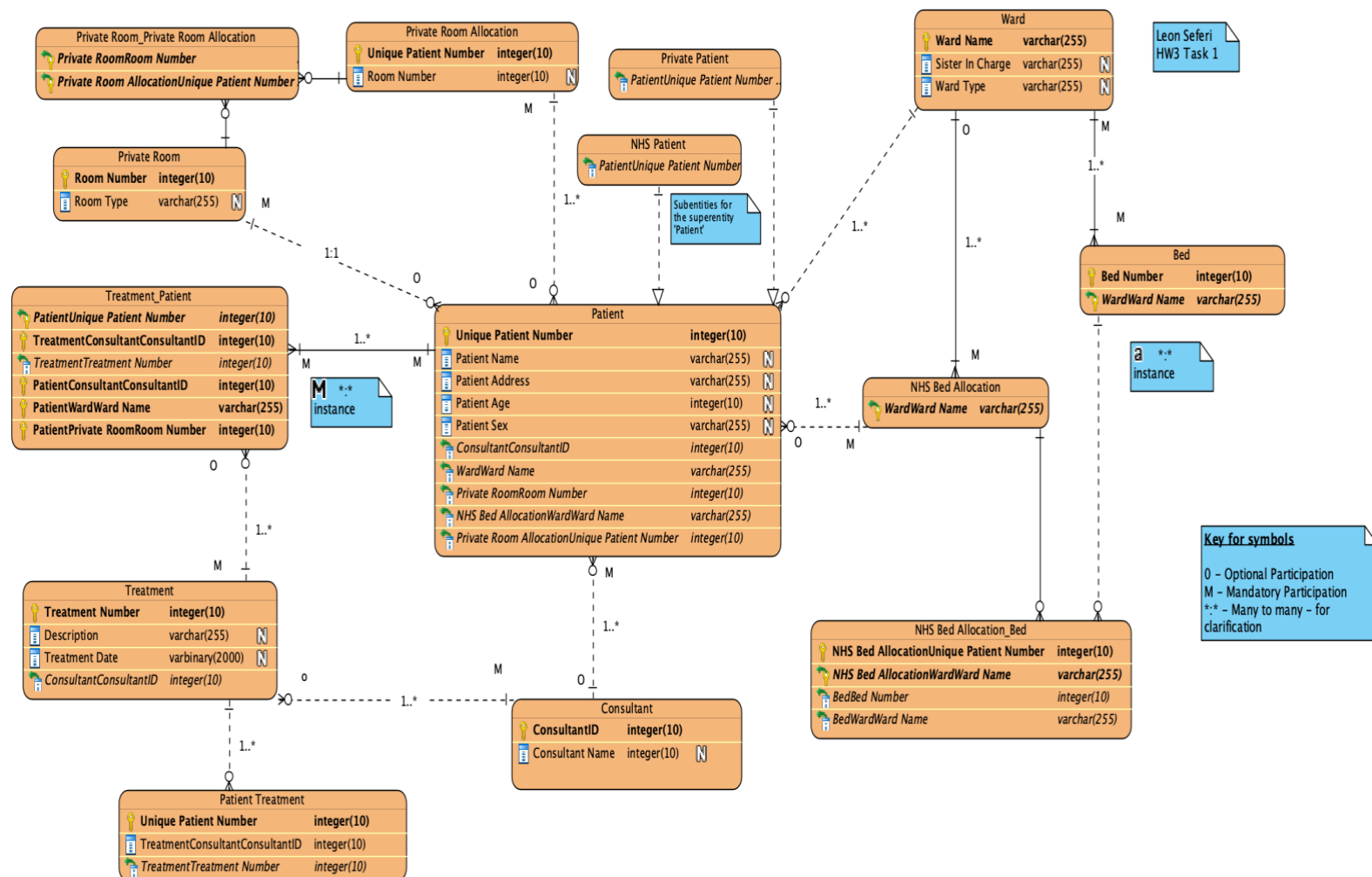
* Please refer to the blue notes for the keys that I have used to demonstrate constraints.

1::* - One to many

1:1 – One to one

: - Many to many

E-R Diagram:

Private Room_Private Room Allocation
- *Private RoomRoom Number*
- *Private Room AllocationUnique Patient Number*

Private Room Allocation
- Unique Patient Number integer(10)
- Room Number integer(10)

Private Patient
- PatientUnique Patient Number ..

Ward
- Ward Name varchar(255)
- Sister In Charge varchar(255)
- Ward Type varchar(255)

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Private Room
- Room Number integer(10)
- Room Type varchar(255)

NHS Patient
- PatientUnique Patient Number

Subentities for the superentity 'Patient'

Bed
- Bed Number integer(10)
- WardWard Name varchar(255)

Treatment_Patient
- *PatientUnique Patient Number* integer(10)
- *TreatmentConsultantConsultantID* integer(10)
- *TreatmentTreatment Number* integer(10)
- PatientConsultantConsultantID integer(10)
- PatientWardWard Name varchar(255)
- PatientPrivate RoomRoom Number integer(10)

M *:* instance

Patient
- Unique Patient Number integer(10)
- Patient Name varchar(255)
- Patient Address varchar(255)
- Patient Age integer(10)
- Patient Sex varchar(255)
- ConsultantConsultantID integer(10)
- WardWard Name varchar(255)
- Private RoomRoom Number integer(10)
- NHS Bed AllocationWardWard Name varchar(255)
- Private Room AllocationUnique Patient Number integer(10)

a *:* instance

NHS Bed Allocation
- WardWard Name varchar(255)

Treatment
- Treatment Number integer(10)
- Description varchar(255)
- Treatment Date varbinary(2000)
- ConsultantConsultantID integer(10)

NHS Bed Allocation_Bed
- NHS Bed AllocationUnique Patient Number integer(10)
- NHS Bed AllocationWardWard Name varchar(255)
- BedBed Number integer(10)
- BedWardWard Name varchar(255)

Key for symbols
0 – Optional Participation
M – Mandatory Participation
: – Many to many – for clarification

Consultant
- ConsultantID integer(10)
- Consultant Name integer(10)

Patient Treatment
- Unique Patient Number integer(10)
- TreatmentConsultantConsultantID integer(10)
- TreatmentTreatment Number integer(10)

Relational schema in 3NF:

Patient [patient_id (**PK**), patient_name, address, age, sex, consultant_id (**FK**) **]**

Ward [ward_name (**PK**), sister_in_charge, ward_type **]**

Bed [Bed_Number (**PK**), ward_name (**FK**) **]**

Private Room[private_room_number (**PK**), private_room_type **]**

Private Room Allocation[patient_id (**FK**), private_room_number (**FK**) **]**

NHS Bed Allocation [patient_id (**FK**), ward_name (**FK**), Bed_Number(**FK**)**]**

Treatment[Treatment_Number (**PK**), Desc, Treatment_Date, consultant_id (**FK**) **]**

Consultant[consultant_id (**PK**), consultant_name **]**

Patient Treatment [patient_id (**FK**), consultant_id (**FK**), Treatment_Number (**FK**) **]**