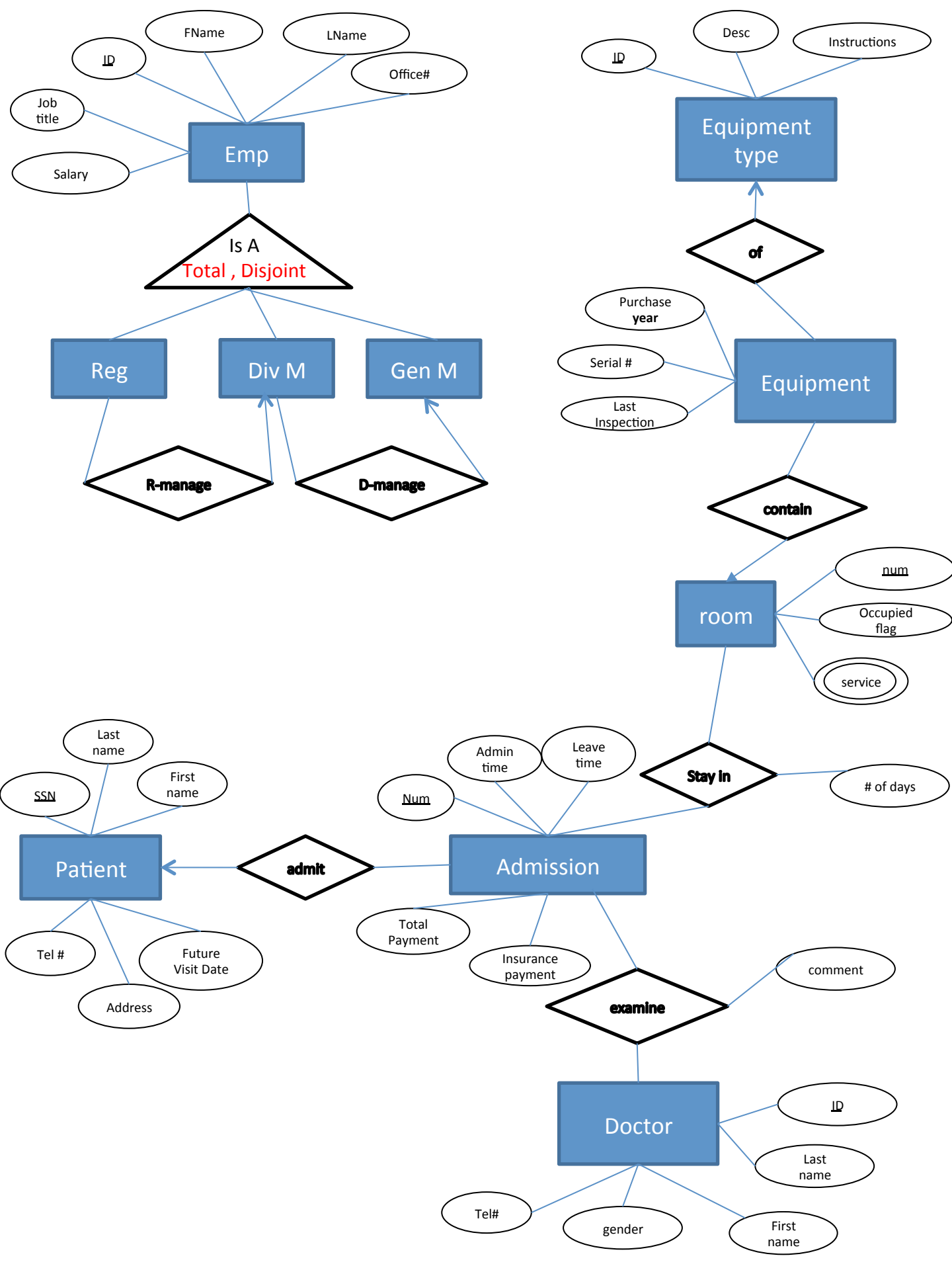
Database Systems I
CS3431
C-2013

Solution of Project 1


FName
LName
ID
Office#
Job title
Emp
Salary
Is A
Total , Disjoint
Reg
Div M
Gen M
R-manage
D-manage
Desc
Instructions
ID
Equipment type
of
Purchase year
Serial #
Equipment
Last Inspection
contain
num
room
Occupied flag
service
Last name
Admin time
Leave time
Stay in
# of days
SSN
First name
Num
Patient
admit
Admission
Total Payment
Insurance payment
Tel #
Future Visit Date
Address
comment
examine
Doctor
ID
Last name
Tel#
gender
First name

The Relational Model

Employee(ID, FirstName, LastName, Salary, jobTitle, OfficeNum, emp_rank, supervisorID)

EquipmentType (ID ,Desc ,Institution ,NumUnits)
Equipment (Serial#, TypeID, Purchase year, Last inspection , roomNum)

Room(Num, occupied flag)
RoomService (roomNum , service)

Patient (SSN, First name, Last name, Address, Future visit date, Tel_Num)
Doctor (ID, Tel_Num, gender, specialty, Last name, First name)
Admission (Num, Admission_Time, Leave_Time, Insurance payment, Total Payment, Patient_SSN)
Examine (Doctor ID, AdmissionNum, comment)
StayIn(AdmissionNum , RoomNum, NumDays)

Notes:

1- There are other possible designs that can be also correct and capture the application requirements.

2- For example, the "Emp" entity set can be assumed as the regular employees and in this case, the "ISA" relationship will have only two subclasses "Division Managers" and "General Managers".

3. As we mentioned in class, there are several way to convert "ISA" relationship to the relational model. The one given above is the most compact and efficient one. The "Emp_rank" field is used to capture whether the employee is regular (rank = 0), division manager (rank = 1), or general manager (rank = 2).

4- The room services can be modeled as a multi-valued attribute, and then in the relational model it will become a relation by itself (that is the approach we considered above). Another way, is to model the services as a separate entity set in the ERD that has a "1-M" relationship with the "room" entity set.