

Database Systems I
CS3431
C-2013

Solution of Project 2
(Question 2)

The Relational Model (from Project 1)

* One typo was fixed. In EquipmentType, the attribute 'Instructions" was mistakenly written as "institution" in Project 1 solution.

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

EquipmentType (ID, Desc , Instructions, 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)

Q1:

```
Select Num  
From Room  
Where OccupiedFlag = 'Y';
```

Q2:

```
Select ID, FirstName, LastName, Salary  
From Employee  
Where supervisorID = 10;
```

Q3:

```
Select SSN, sum(InsurancePayment) as sum_Insurance  
From Patient, Admission  
Where SSN = Patient_SSN  
Group By SSN;
```

Q4:

```
Select SSN, FirstName, LastName, sum(InsurancePayment) as sum_Insurance  
From Patient, Admission  
Where SSN = Patient_SSN  
Group By SSN, FirstName, LastName;
```

Note: *In Q4, we added FirstName, LastName to the Group By although they will not change the grouping because SSN is a key. However, without adding them in the Group By, you cannot select them in the projection list.*

Q5:

```
Select Distinct R.roomNum, R.service
From RoomServices R, Equipment E, EquipmentType T
Where R.roomNum = E.roomNum
And E.TypeID = T.ID
And T.Desc = 'CT-SCAN X100';
```

Note: In Q5, Distinct keyword is not asked for, so if you did not add it, that is fine. Also, some of you may have 'CT-SCAN X100' as the ID of the EquipmentType that goes to Equipment relation. That is also fine, and in this case you do not need table EquipmentType.

Q6:

```
Select Distinct D.FirstName, D.LastName
From Doctor D, Admission A, Examine E
Where A.Patient_SSN = '111-22-3333'
And D.ID = E.DoctorID
And A.Num = E.AdmissionNum
And D.gender = 'F';
```

Q7:

```
Select emp_rank, count(*)
From Employee
Group By emp_rank;
```

Q8:

```
Select SSN, FirstName, LastName, FutureVisitDate
From Patient
Where FutureVisitDate is not null;
```