# RDBMS Assignment

**Q1.**Find the functional dependencies for the below and normalize it till BCNF :

| CustID | CustName | AccountManager | AccountManagerRoom | ContactName1 | ContactName2 |
|---|---|---|---|---|---|
| 171 | ABNAmro | Hans | 12 | Piet | Koos |
| 190 | RaboBank | Guus | 15 | Mona | Mieke |

**Solution:**

**Funcitonal dependencies:**

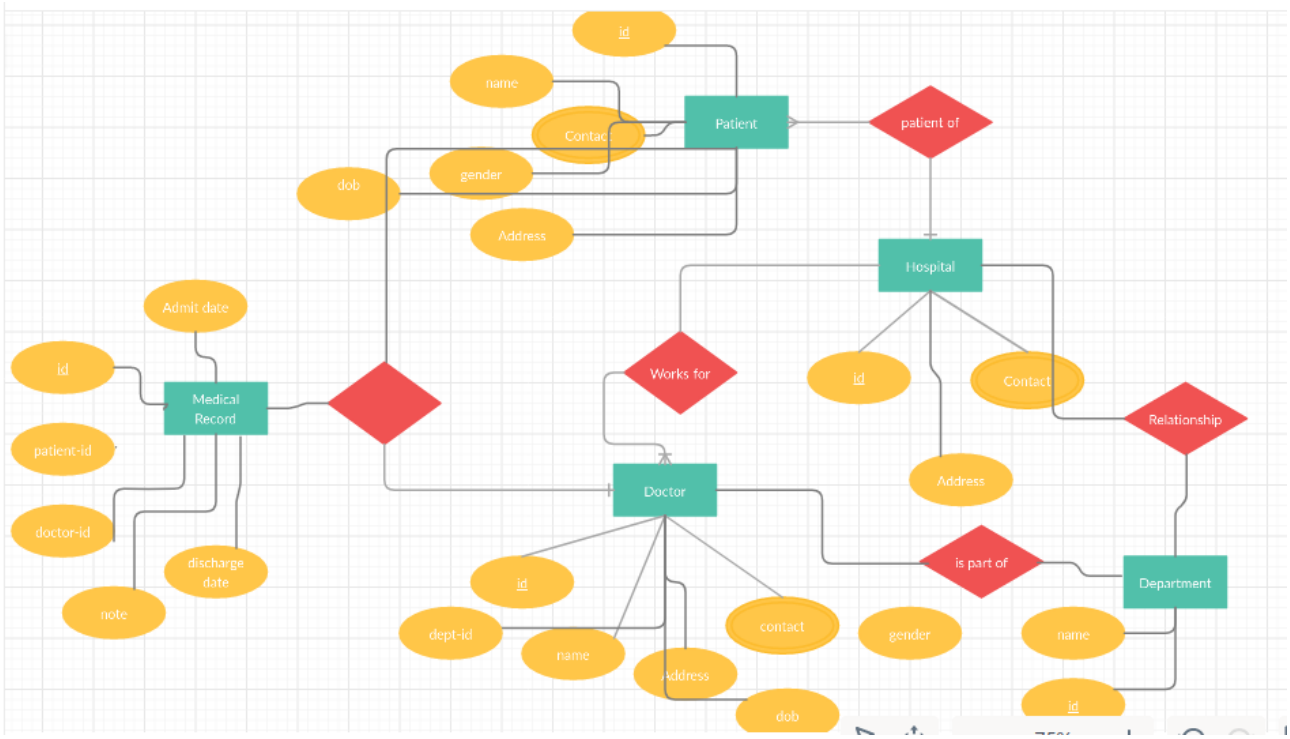
CustId-> CustName
CustId-> AccountManager
CustId-> AccountManagerRoom
CustId-> ContactName1
CustId-> ContactName2
CustId-> AccountManagerRoom
AccountManagerRoom->AccountManager

& candidate set: (CustId)

After normalizing, BCNF form :

relation 1: CustId,CustName,ManagerId
relation 2: CustId,ContactID
relation 2: ContactID, ContactName
relation 3: ManagerId , AccountManager, AccountManagerRoom

**Q2.** Draw an ER diagram for a hospital management system.




**Q3.** Consider a relation Student (StudentID, ModuleID, ModuleName, StudentName, StudentAddress, TutorId, TutorName). Each student is given a StudentID and each module given a ModuleID. A student can register more modules and a module can be registered by more students. TutorID is the ID of the student's personal tutor, it is not related to the modules that the student is taking. Each student has only one tutor, but a tutor can have many tutees. Different students can have the same name. Different students can be living at the same address.
Find all the functional dependencies holding in this relation and normalize the table to 3NF.

**Solution:**

Functional dependencies:

StudentID->StudentName
StudentID->StudentAddress
StudentID->TutorId
StudentID->TutorName
ModuleID->ModuleName
TutorId->TutorName

& candidate set: (StudentID, ModuleID)

After normalizing, 3NF form :

relation 1: StudentID,ModuleID,
relation 2: ModuleID,ModuleName
relation 3: StudentID, StudentName,StudentAddress,TutorId
relation 4: TutorId,TutorName