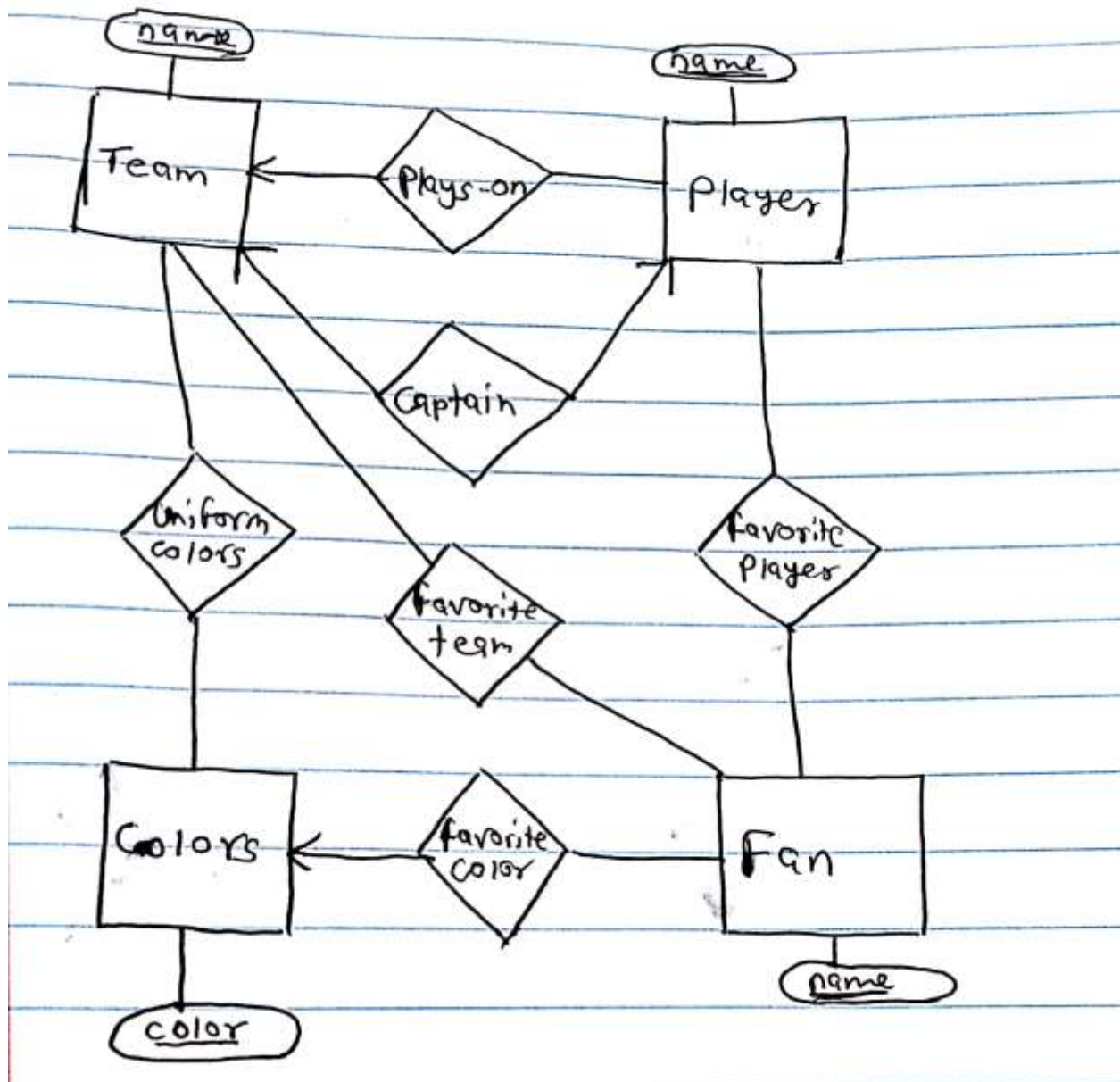
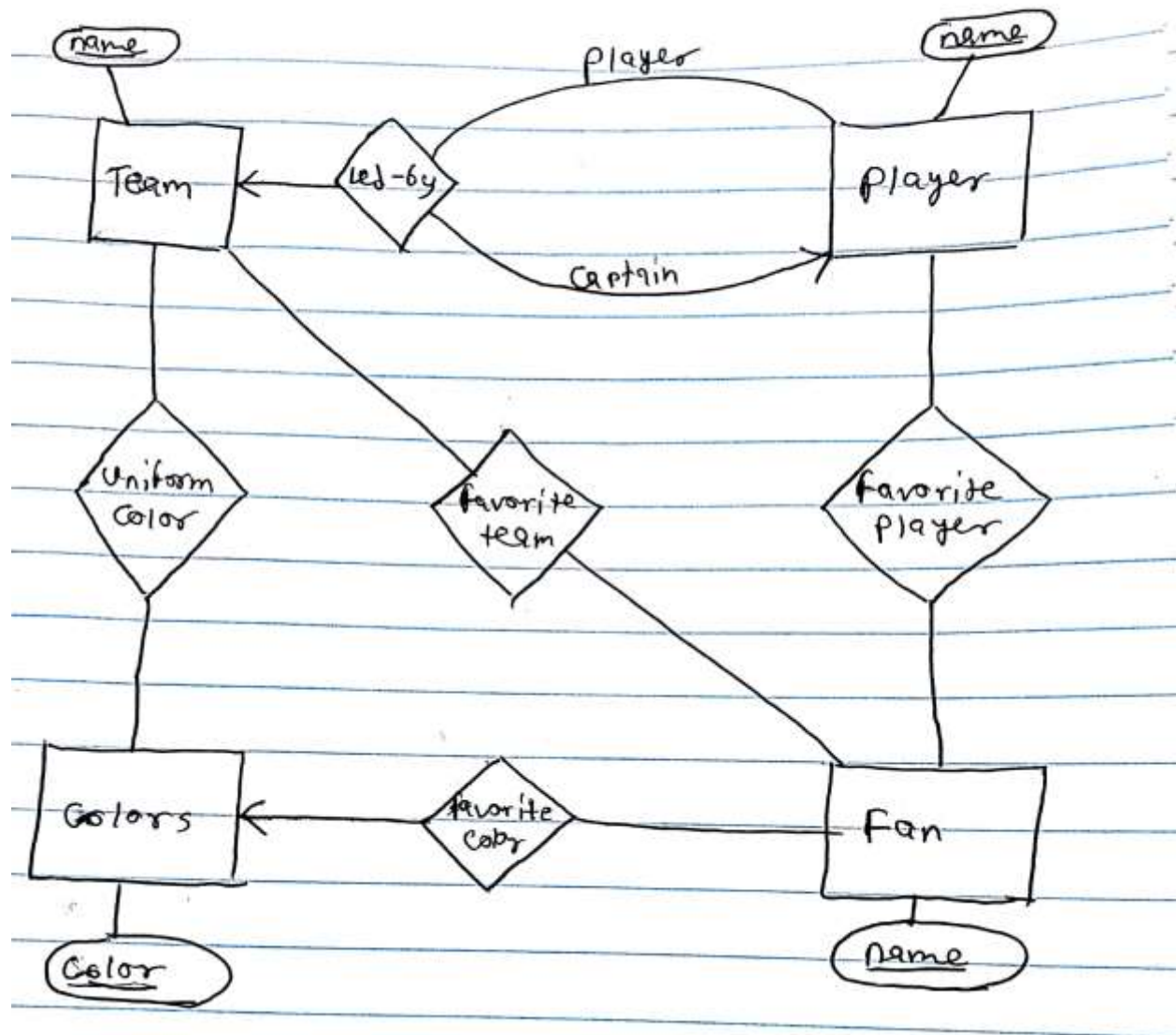


## Assignment 6

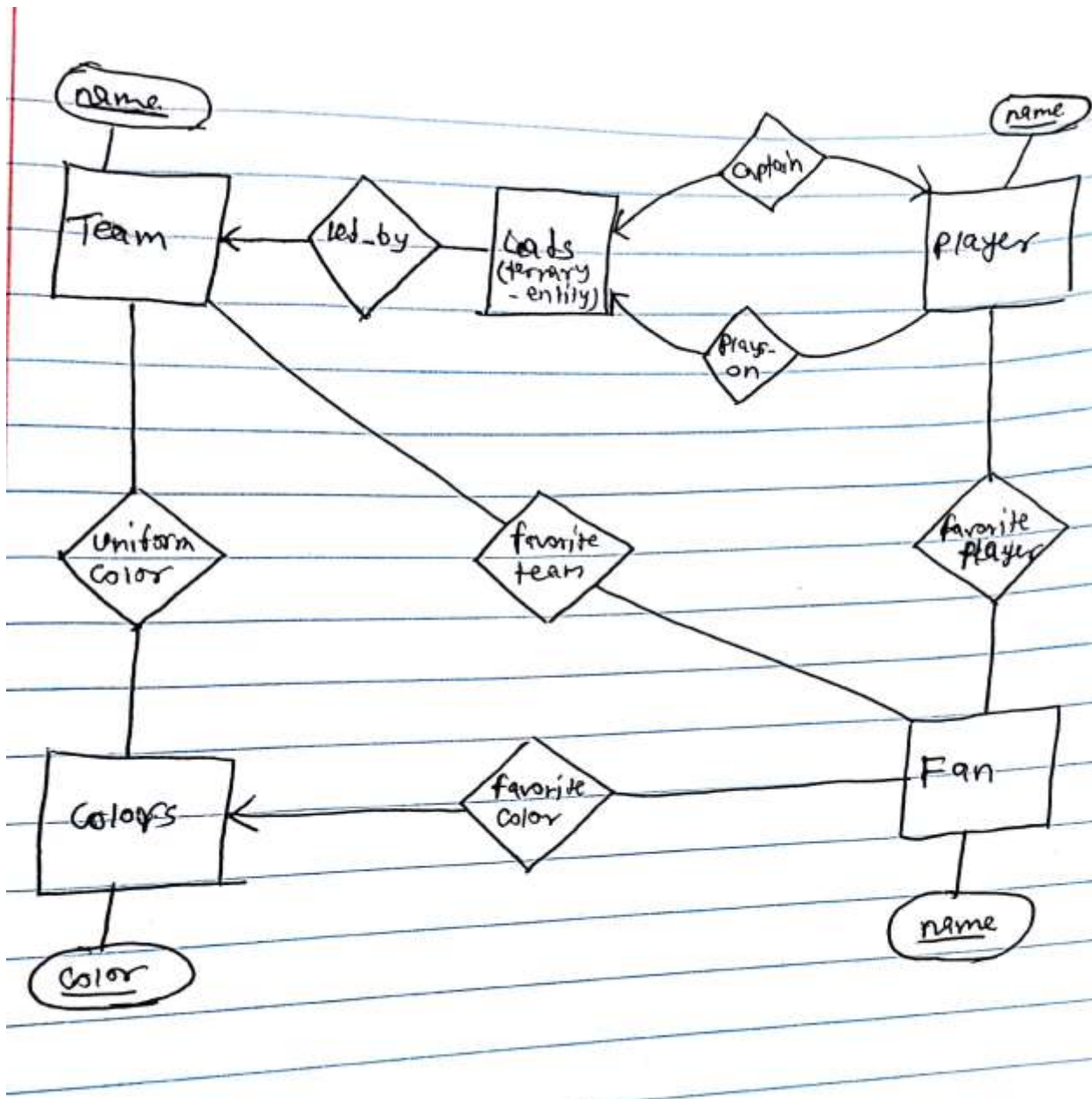
Q1:



Q2 (a) :



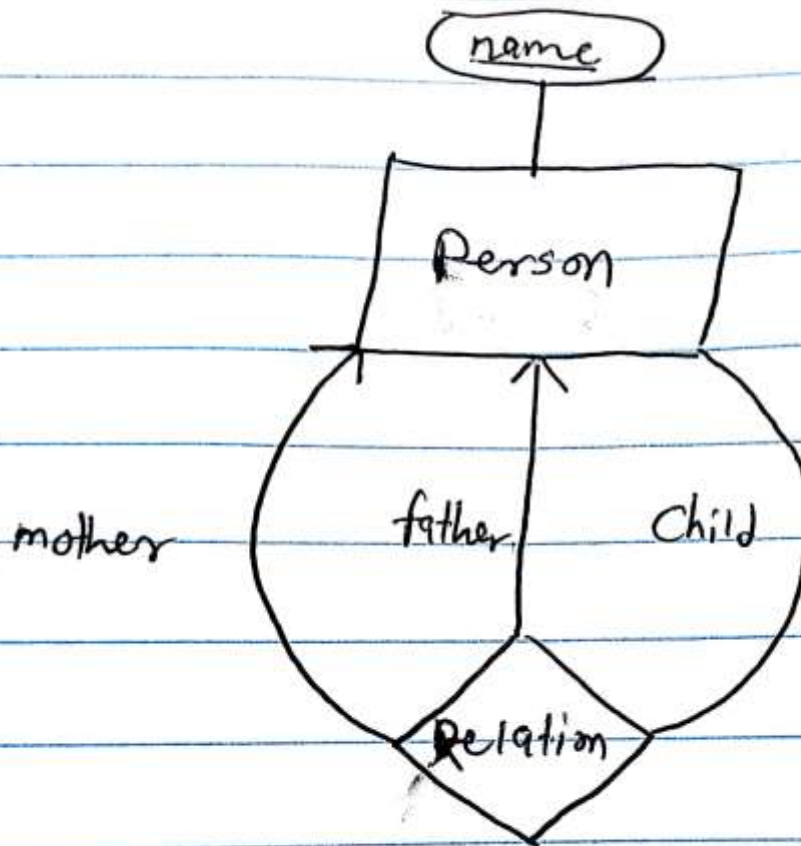
Q2 (b):



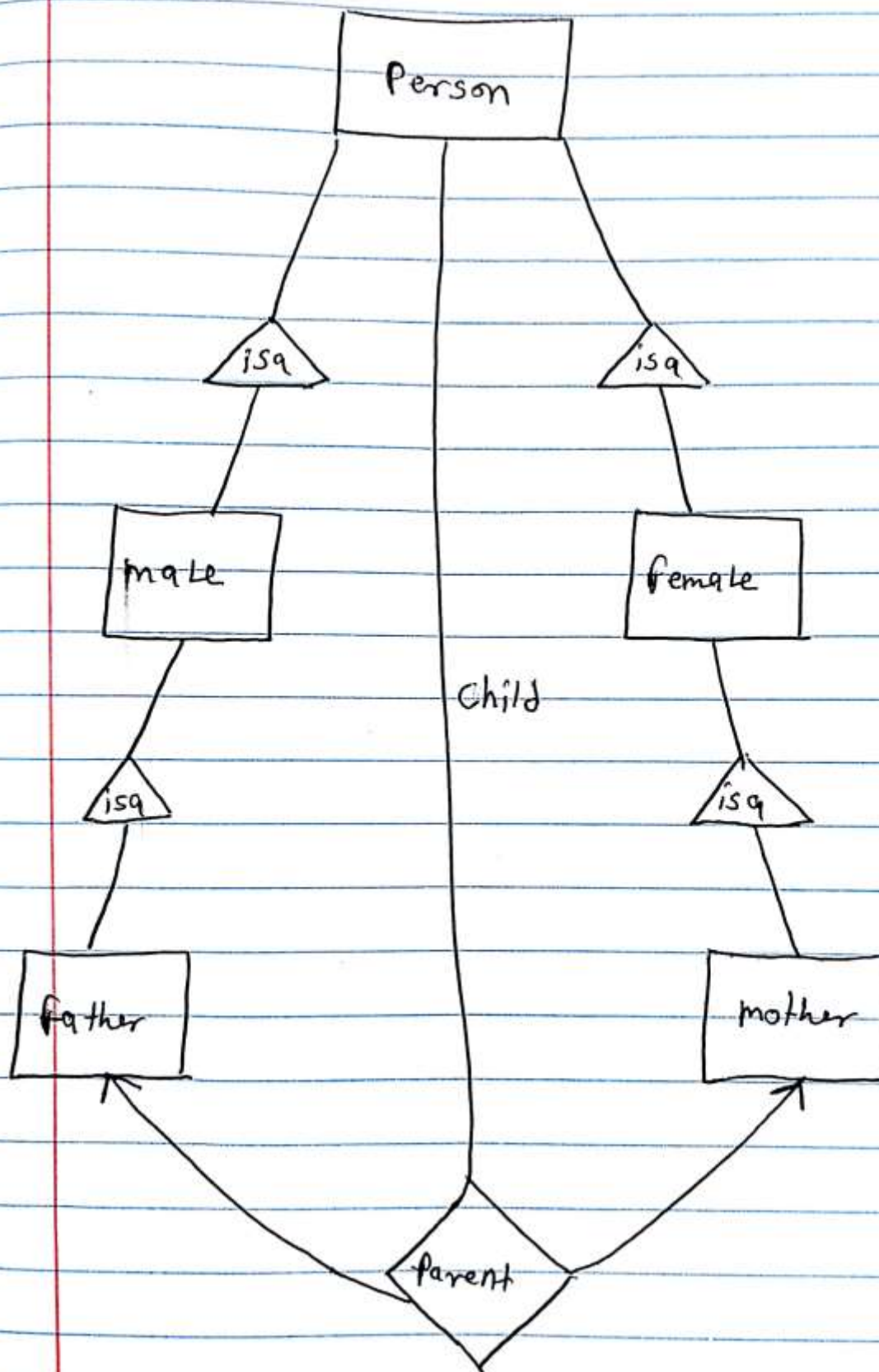
Q2 (c):

Yes, the new relationships after the new entity will be same as previous binary relationship of captain and plays-on. Hence we remove previous relationships

Q3:



Q4:



Q5

### The Straight E-R Method

Person (name, address)

Child (name, address)

Father (name, address)

Mother (name, address)

Married (fatherName, fatherAddress, motherName, motherAddress)

- fatherName, fatherAddress references to primary key name, address in Father table
- motherName, motherAddress references to primary key name, address in Mother table

FatherOf (fatherName, fatherAddress, childName, childAddress)

- fatherName, fatherAddress references to primary key name, address in Father table
- childName, childAddress references to primary key name, address in Child table

MotherOf (motherName, motherAddress, childName, childAddress)

- motherName, motherAddress references to primary key name, address in Mother table
- childName, childAddress references to primary key name, address in Child table

ChildOf (childName, childAddress, Name, Address)

- childName, childAddress references to primary key name, address in Child table
- Name, Address references to primary key name, address in Person table

### The Object-Oriented Model

Person (name, address)

Child (name, address)

Father (name, address)

Mother (name, address)

Married (fatherName, fatherAddress, motherName, motherAddress)

- fatherName, fatherAddress references to primary key name, address in Father table
- motherName, motherAddress references to primary key name, address in Mother table

FatherOf (fatherName, fatherAddress, childName, childAddress)

- fatherName, fatherAddress references to primary key name, address in Father table
- childName, childAddress references to primary key name, address in Child table

MotherOf (motherName, motherAddress, childName, childAddress)

- motherName, motherAddress references to primary key name, address in Mother table
- childName, childAddress references to primary key name, address in Child table

ChildOf (childName, childAddress, Name, Address)



- childName, childAddress references to primary key name, address in Child table
- Name, Address references to primary key name, address in Person table

Note: This model is same as E-R model since there are no additional attributes in sub-classes, and superclass only contains primary key attributes

Note: ChildOf, MotherOf, FatherOf can be combined into one entity with six columns childName, childAddress, motherName, motherAddress, fatherName, fatherAddress which will be converted into single table.

### The nulls Method

Person (name, address, *fatherName* (nullable), *fatherAddress* (nullable), *motherName* (nullable), *motherAddress* (nullable), *childName* (nullable), *childAddress* (nullable))

*fatherName, fatherAddress* will contain name and address of father of the person

*motherName, motherAddress* will contain name and address of mother of the person

*childName, childAddress* contain will contain name and address of child of the person

Married (fatherName, fatherAddress, motherName, motherAddress)

- fatherName, fatherAddress references to primary key name, address in Father table
- motherName, motherAddress references to primary key name, address in Mother table

Q6

### The Straight E-R Method

Depts (name, chair)

Courses (name, number, room)

LabCourses (name, number, computerAllocation)

### The Object-Oriented Model

Depts (name, chair)

Courses (name, number, room)

LabCourses (name, number, room, computerAllocation)

### The nulls Method

Depts (name, chair)

Courses (name, number, room, computerAllocation (nullable))