**Removing inheritance relationships**

If the circle contains the letter ‘o’ it means overlapping: a person can be both student and parent.

If the circle contains‘d’, it means disjoint: a person can belong to only one subclass. A person cannot be both a student and a parent

*Single line here means (optional relationship) some persons are not student and they are not parents*

*Double line here means (mandatory relationship) all persons must be found in at least one subclass*

parent

student

Person

An inheritance relationship may be replaced using three different approaches.

Method 1: Combine all entities together into the superclass

(You must use as pk the pk of the superclass because there might be some people who are NOT students)

person

Nationality

NationalID

Name

Address

DOB

StudentID

Cgpa

Bankname

job

Method 2: Create an entity for each subclass by incorporating the superclasses attributes.

Student

Nationality

NationalID

Name

Address

DOB

StudentID

Cgpa

Nationality

NationalID

Name

Address

DOB

Bankname

job

parent

Method 3: Create a separate entity for each entity in the inheritance relationship

Student

StudentID

Cgpa

person

Nationality

NationalID

Name

Address

DOB

Bankname

job

parent

**Re-examine 1:1 relationships**

**If an entity has no relationships with any other entity especially if the relationship is an identifying relationship, to minimize the number of tables (and thus joins) you may choose to combine those entities**

**EX: Each student has one and only one portal account. Each portal account belongs to only one student.**

Portal account

Student

**Here you can say “since portal account is not used by any other entitiesand the relationship is 1:1 we can combine them’**

student

StudentId

Name

password

account\_status

**Or you can say “I am going to use a special encryption on the password only and keep the two tables separate/ in another safer location**

portalaccount

Password

Account\_status

student

studentId

Name

**EX.We have to store a picture for each student.**

Student

Picture

Here if the picture of a student is not going to be used every time the student is accessesd you can decide to keep the entites separate to increase the performance otherwise combine them together.