Relationship table Relationship Object Relationships **Entity Teachers Educations** Teacher Id **Education Id** Name Name Telephone_Number Total_Points Email_ld Teacher_Course **Courses** Course Detail Id PK,FK1 Course Id PK,FK2 Teacher_Id Name **Points** Education_Id FΚ Course_Detail Course_Detail_Id **Logic** FΚ Course_Id **Students** Teacher_ld **PersonNummer** Responsible _Teacher Namn An education leader is employed in a place with several educations and other Start Date Telephone_Number employees. **End Date** Email_ld But a teacher may not be tied to a place Project_Numbers and may have courses in several Education_ID different educations and courses. A student completes a course when they have received a grade in the course. Education_City **Grades** An education can have several courses and a course can have an education. **PK**, **FK1** Personal Number PK,FK1 Education_Id Several educations can be found in one PK,FK2 Course Detail ID PK,FK2 City Id place. An education can be found in several places. Grade Grade_Date Other Employees Inactive _Student **Employeeld** City **Personal Number** Designation City Id Name Telephone_Number Telephone_Number Email_ld Email_ld Education_Id FΚ

Infological Model

Logical Data Model

Normalization

1 NF 2 NF

3 NF

- Teachers (Teacher_Id, Name, TelephoneNumber, Email_Id)
- Teacher_Course_Detail(<u>Course_Detail_Id</u>, <u>Teacher_Id</u>)
- Course_Detail (Course_Detail_Id, Course_Id, Teacher_Id, Responsible_Teacher, Start_Date, End_Date, Project_Numbers)

FK City_Id

- Courses (Course_Id, Name, Points, Education_Id)
- Educations (<u>Education_Id</u>, Name, Total_Points)
- Education_City (Education_Id, City_Id)
- Students (<u>Personal_Number</u>, Name, TelephoneNumber, Email_Id, Education_ID)
- City(City_Id, Name)
- Grades (<u>PersonalNumber, Course_Detail_Id</u>, Grade, Completion_Date)
- Inactive_Students (<u>PersonalNumber</u>, Name, TelephoneNumber, Email_Id)
- Other_Employees(Employee_Id, Designation, Name, Telephone_Number, Email_Id, City_Id, Education_Id)