

Prof. Dr. Agn es Voisard, Nicolas Lehmann

# Datenbanksysteme, SoSe 2017

##  bungsblatt 2

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Tutorium 6

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Link zum Git Repository: <https://github.com/BoyanH>

## 1 Aufgabe

a) Relationales Modell

```
Person(ID::integer, Age::integer, Name::character varying(20), Password::character varying(40),  
      Login::character varying(40))
```

```
Teacher(ID::integer)
```

```
Student(ID::integer)
```

```
Course(Number::integer, Name :: character varying(50))
```

```
Module(Number::integer, Name :: character varying(50))
```

```
PersonIsATeacher(PersonID, TeacherID)
```

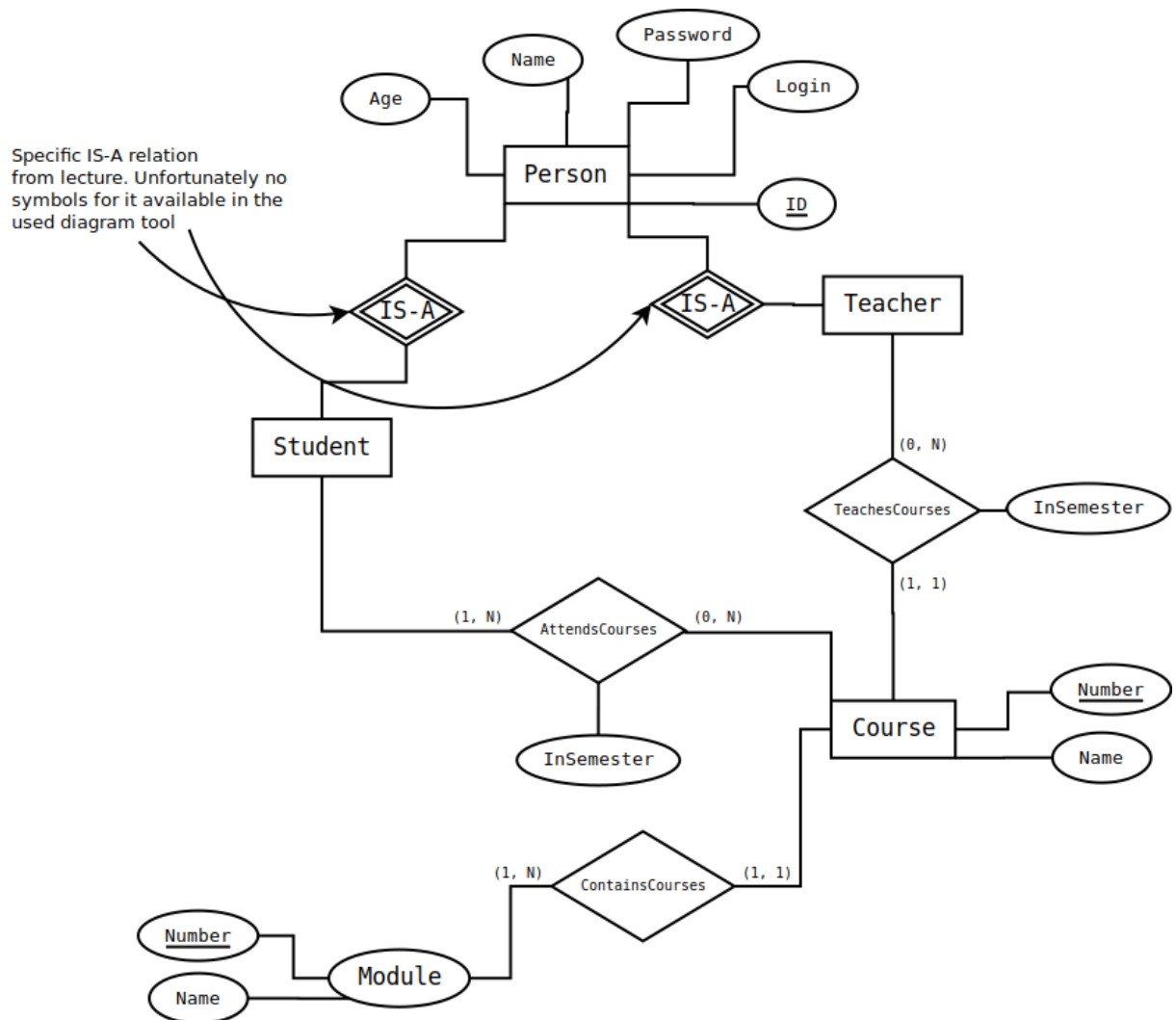
```
PersonIsAStudent(PersonID, StudentID)
```

```
TeachesCourses(PersonID, CourseNumber, InSemester)
```

```
ContainsCourses(ModuleNumber, CourseNumber)
```

```
AttendsCourses(StudentID, CourseNumber)
```

ER Diagramm in umgekehrter min-max Chen Notation



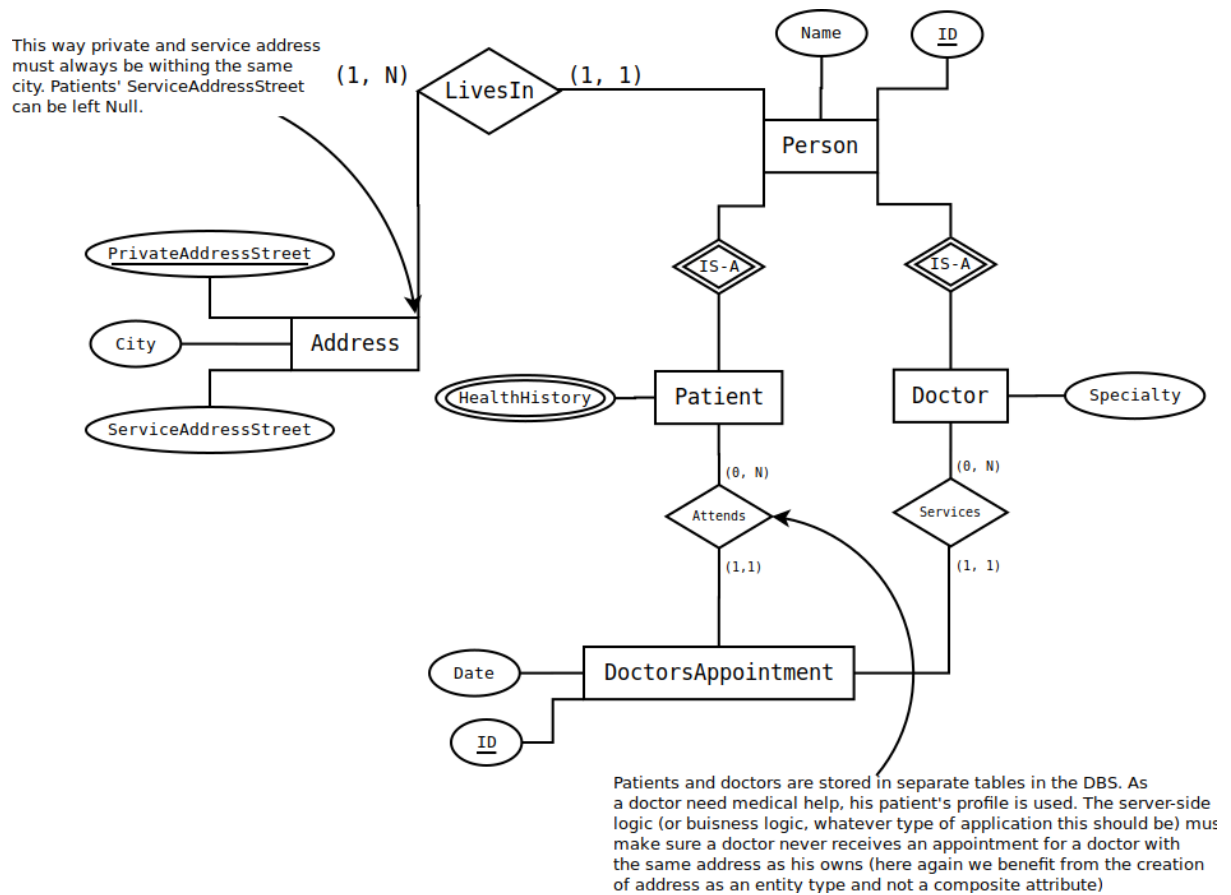
## b) Relationales Modell

```

Person(ID::integer, Name::character varying(20))
Doctor(ID::integer, Specialty::character varying(30), Name::character varying(20))
Patient(ID::integer, HealthHistory::character varying(40) ARRAY, Name::character varying(20))
DoctorsAppointment(ID::integer, Date::date)
Address(PrivateAddressStreet::character varying(20), City::character varying(20),
        ServiceAddressStreet::character varying(20))

LivesIn(PersonID, AddressPrivateAdressStreet)
Attends(PersonID, DoctorsAppointmentID)
Services(PersonID, DoctorsAppointmentID)
  
```

ER Diagramm in umgekehrter min-max Chen Notation



## 2 Aufgabe

- $\Pi_{\text{Vorname, Nachname}} (\sigma_{\text{Alter} < 30})$
- $\Pi_{\text{Datum}} (\sigma_{\text{Temperatur} > \text{Regenmenge} \vee \text{Temperatur} > \text{Sonnenscheindauer})$
- $\Pi_{\text{Kreditkartennummer}} (\sigma_{\text{Name} = \text{'Emirates'} \wedge \text{Datum} \geq \text{'02.03.2016'} \wedge \text{Datum} \leq \text{'07.06.2016'}} (\text{Passagier} \bowtie_{\text{ID} = \text{Passagier-ID}} \text{Flug} \bowtie_{\text{Fluggesellschaft-ID} = \text{ID}} \text{Fluggesellschaft}))$
- $\Pi_{\text{Name}} (\sigma_{\text{Temperatur} < 0} (\text{Wetter} \bowtie_{\text{Wetter::Datum} = \text{Flug::Datum}} \text{Flug} \bowtie_{\text{Fluggesellschaft-ID} = \text{ID}} \text{Fluggesellschaft}))$
- $\Pi_{\text{Vorname, Nachname}} (\sigma_{\neg(\text{Temperatur} < 20 \wedge \text{Regenmenge} > 10 \wedge \text{Sonnenscheindauer} < 6)} (\text{Wetter} \bowtie_{\text{Wetter::Datum} = \text{Flug::Datum}} \text{Flug} \bowtie_{\text{Passagier-ID} = \text{ID}} \text{Passagier}))$