Exercise 1 (SQL training). In this exercise, we consider the following schema about a university:

- student: ID, name, address, birthdate, semester, subject
- professor: ID, name, age, department
- lecture: ID, title, topic, subject, semester, lecturer
- attends: student, lecture, grade

The IDs are unique identifiers for students, professors and lectures stored in the respective relation. They form the primary key for their relation. The attributes student, lecture and lecturer of the relations attends and lecture reference them as foreign keys.

Formulate SQL queries answering the following questions:

a) List all first semester computer science students.
b) List all students attending database lectures (topic).
c) Who are the database professors?
d) For each department, list all lectures they offer.
e) Who is the lecturer of “Chemoinformatics” and how old is he?
f) Who attends lectures of a different subject?
g) Who attends a lecture of a higher semester?
h) Who attends just lectures of lower semesters?
i) Who attends two lectures taught by the same professor?
j) Who has only 1.x grades (1.0, 1.3, 1.7)?
k) Who hasn’t attended any lecture yet?
m) Who hasn’t attended any lecture by Prof. Fröhlich yet?
n) Who attends all second semester lectures?
o) Who attends all computer science lectures?
p) Who attends all lectures by Prof. Bajorath?