Database System Concepts for Non-Computer Scientist - **WiSe 24/25**
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http://db.in.tum.de/teaching/ws2425/DBSandere/?lang=en

Sheet 05

Exercise 1

Answer the following questions on our university database using SQL:

a) Figure out the average semester of all students.

b) What is the average semester of students that are not attending any lecture?

c) Determine the average semester of students that attend at least one lecture of *Sokrates*.

d) Calculate how many lectures students are attending on average. Students who do not attend any lecture should be reflected in the result as well. If you get stuck, see hints: [1] [2]

e) Calculate how many lectures each student is attending. Students who do not attend any lecture should be included in the result as well (*attend_count* = 0).

Exercise 2

Answer the following questions on our university database using SQL:

a) Each assistants works in a certain area. Figure out how many assistants work in each area.

b) Determine the number of areas a professor is interested in. A professor is interested in an area if one of their assistants works in this area. Professors who do not have an assistant do not need to be included in the result.

c) Include the professors without assistants in the result.

Exercise 3

Write a query that determines the kind of degree a student is pursuing. In our database, we assume that this can be deduced from the student's semester in the following way: A student who has not reached her 7th semester yet is still considered a "bachelor student". Once in the 7th semester, she should be categorized as a "master student". Starting in the 11th semester, we label her as a "phd student".

Optional 4

Answer the following questions on our university database using SQL:

a) Find all foundation lectures (lectures that don't depend on another lecture).

b) "Lonely Students" Are there any students that are attending a lecture on their own?

c) "Industrial Students" List all students that are attending all lectures. Hint: [3] [4]

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[1] Remember that the from clause is optional ('select 1.0 / 2.0;' is a valid query).
[2] Remember that you can use sub-queries in the select clause.
[3] The task can be rephrased as: List all students, where there is no lecture with no attend record of the student.
[4] Alternatively, you could also try counting how many lectures a student is attending.