Database Systems (CPH) – Fall 2025
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Exercise Sheet: Lecture 4: SQL Part 2

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1 Review

Review the following terms.

1. Null value

2. Modification
   delete
   insert
   update
   case

3. Join types
   natural join
   join...using
   join...on
   left, right, full outer join

4. Set membership
   in
   not in

5. Set comparison
   some clause
   all clause
   exists clause
   not exists clause
   unique clause

6. View defination
   create view

7. Transactions
   begin
   commit
   rollback

8. Constraints
   check
   Referential integrity

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2 Advanced SQL Queries

Consider the following relational schema, which obviously does not describe the standard situation at Aalborg University.

We assume that tutors are responsible for one or multiple study groups, students individually (not per group) hand in solutions for exercise sheets and receive individual grades in terms of the number of achieved points per sheet. Some of the tutors are more experienced (senior) than others.

student: {[sid: int, firstname: string, lastname: string, semester: int, birthdate: date]}
tutor: {[tid: int, firstname: string, lastname: string, issenior: boolean]}
studygroup: {[gid: int, tid → tutor, weekday: string, room: string, starttime: time]}
exercisesheet: {[eid: int, maxpoints: int]}
handsin: {[sid → student, eid → exercisesheet, achievedpoints: int]}
member: {[sid → student, gid → studygroup]}

1. List the first and last names of all students who are at least in one studygroup.

2. List the first and last names of the students that obtained higher number of points than at least one of others for exercise sheet 1 (eid = 1).

3. Find the first and last names of all students who have study group on Wednesday or Friday.

4. Create a view of student without their birthday, rename it as studentview.

5. Create an assistant table which contains attributes: (aid int), (sid, int), (coursename varchar(20)), (salary, numeric(8,2)).
   a) The primary key is aid.
   b) The sid references student.
   c) The couse name should not be empty.
   d) The salary should not be less than 5000.

3 Test your solutions using PostgreSQL