

UG Exam Performance Feedback

Second Year

2017/2018 Semester 1

COMP23111 Fundamentals of Databases

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Comments Q1 This question proved very easy with a very high overall average of 70.82% over 244 students that took the exam.

Q1.a.i

The solution requires set difference (*), and many answers were wrong because they tried to achieve the same effect using a selection condition or, worse, assuming that a (inner) join produces null if there is no match, when only *outer* joins do. Also, on using set difference care must be taken to use projections on its operands so that the precondition of schema compatibility is met.

(*) Or a join that is defined in terms of set difference, like the antijoin, as one eagle-eyed student spotted well! This was moderately hard, with an average of 56.79%.

Q1.a.ii

Many students felt the need to use a nested query to compute the count, but there's absolutely no need. Too many either didn't use a group by clause (which one must do as two attributes other than the aggregate attribute are also being projected out) or else used the wrong group by attribute. Fewer, but still too many, used the wrong relations (e.g., there is no need to use the 'department' table, and some used 'takes' rather than 'teaches'). This had average difficulty, i.e., 62%.

Q1.a.iii

The main common error here was to use natural joins rather than theta joins (as the *different* joint attributes suggest they should be). The problem is that under SQL's bag semantics the former formulation produces different results from the latter (try it). This proved extremely easy, the easiest part of the question, with an average of 78.23%.

Q1.b

No systematic error, but less good recall than one would have expected. Some students failed to differentiate the purposes, leading to vague, bland answers. This proved to be the hardest part of the question, with an average of 44.68%.

Q1.c

No systematic error. Some students did a step-by-step derivation, but this was not asked, so potentially inflicting upon themselves a loss of time. This proved very easy too, with an average of 76.08%.

Q1.d

No systematic error. This had average difficulty, on the easy side, with an average of 66.16%.

Question 2 mostly contained application of technique and original thought in various fundamental topics of databases. Unlike previous years, all students had to solve this question and it was nice to see that a significant fraction of the students scored high, with some achieving the highest possible mark.
