

4. Write a SQL query that generates a list of course IDs, course names, and the enrollment in each course with fewer than 10 students enrolled. The desired output is a list of tuples of the form (i, t, n) where i is a course identifier, t is that course's title, and n is the number of students enrolled in that course. If there is an enrollment record for a course with no known title then t should be null for that tuple.

5. Answer the following based on Codd's paper.¹

(a) How many paths are needed to support symmetric exploitation of an n-ary relation? Explain your answer.

(b) Provide a relational algebra expression (using the algebra defined in class) for the active domain of a database composed of a single relation $R(A, B, C)$.

(c) Justify the claim made by Footnote 6 (page 382). Provide examples in SQL to support your answer.

¹Edgar F. Codd, "A Relational Model of Data for Large Shared Data Banks," *Communications of the ACM* 13/6 (1970).