

Assignment 2

Relational Algebra and SQL

Due: 28 Sept 2006 in Class

We will be using the suppliers-parts-project database provided (handout given in class, also available in page 102, Fig 4.5 in the textbook).

Write both relational and SQL queries to the scenarios provided below. Some questions require you to write the SQL query in different variations.

Use only the core operators (RENAME, RESTRICT, UNION, INTERSECTION, MINUS, PROJECTION, TIMES and JOIN) to express the queries in relational algebra.

1. What is the name of Project 'J1' and in which city is it getting implemented. (1 point)
2. Provide the part name and the city where it is produced for part 'P3', part 'P6' and of part 'P1'. (1 point)
3. Give the names of all the suppliers whose status is greater than or equal to 20. (1 point)
4. Give the P# of all the parts that are produced in 'London'. (1 point)
5. How much 'QTY' of part 'P1' is being supplied to Project 'J1' by Supplier 'S1'. (1 point)
6. List the names and status of all the suppliers involved in project 'J1'. (2 points)
7. List all the P#s that are not being used in any project. Write the SQL for this problem in three variations (using EXCEPT, [NOT] IN and [NOT] EXISTS operators) .(2 points)
8. List the S# of suppliers who supply only one part to any project. i.e. they are involved in any project only once. (2 points)
9. List the J# of the projects that has one and only one supplier. Write the SQL for this problem in different variations using [NOT] IN, EXCEPT and [NOT] EXISTS operator (3 points)

10. List all the S# of suppliers who are indispensable. i.e. they alone supply a particular part and nobody else. (3 points)
11. List the S# of suppliers who supply any part supplied by 'S1' but do not supply parts supplied by supplier 'S2'. (3 points)