

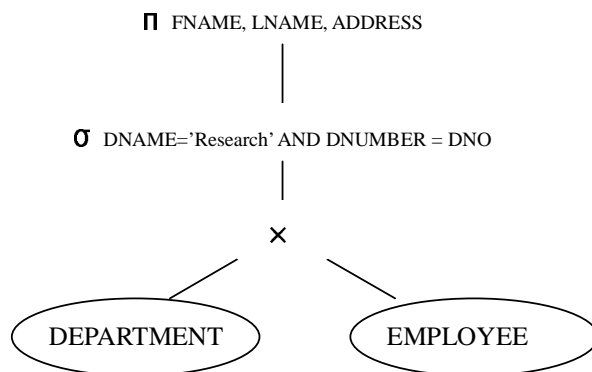
Homework 8

Solution

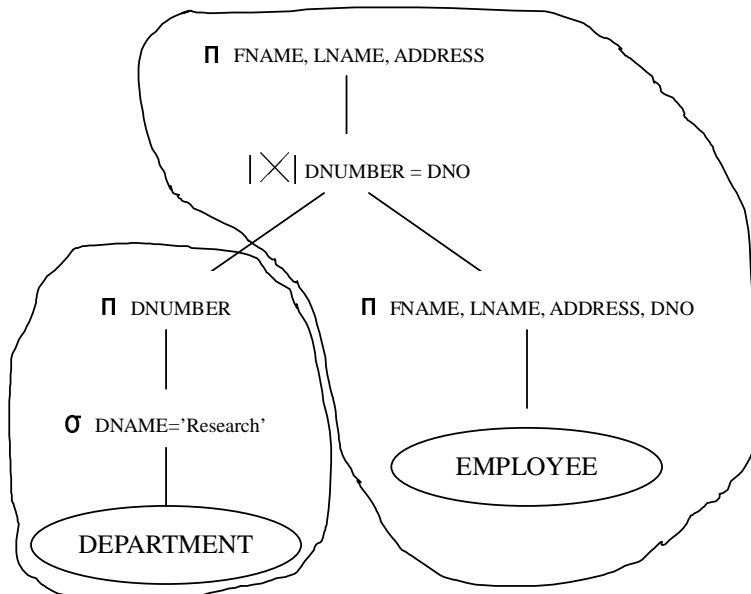
18.13 Part B

Q1: SELECT FNAME, LNAME, ADDRESS
 FROM EMPLOYEE, DEPARTMENT
 WHERE DNAME = 'Research' AND DNUMBER = DNO

Initial tree:



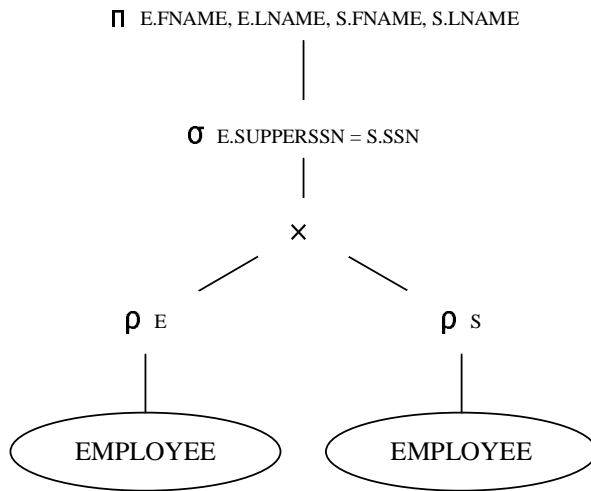
Optimized tree:



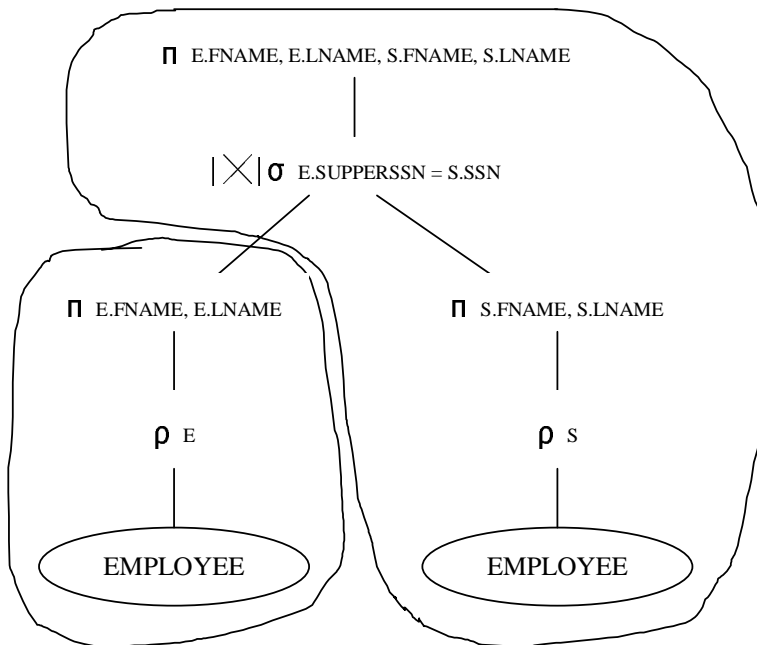
Q8: SELECT E.FNAME, E.LNAME, S.FNAME, S.LNAME
 FROM EMPLOYEE AS E, EMPLOYEE AS S

WHERE E.SUPERSSN = S.SSN

Initial tree;

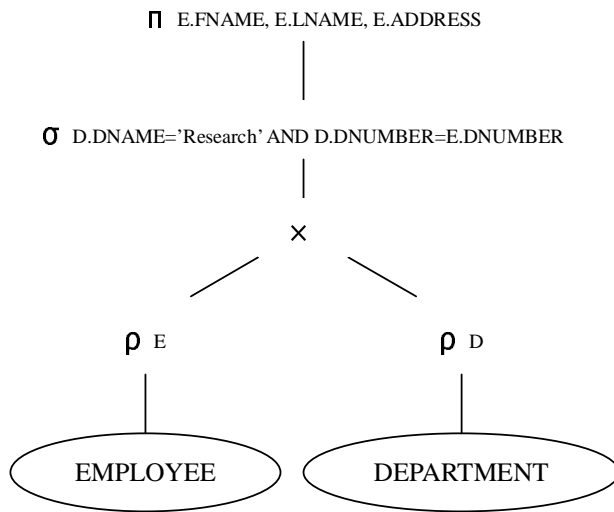


Optimized tree:

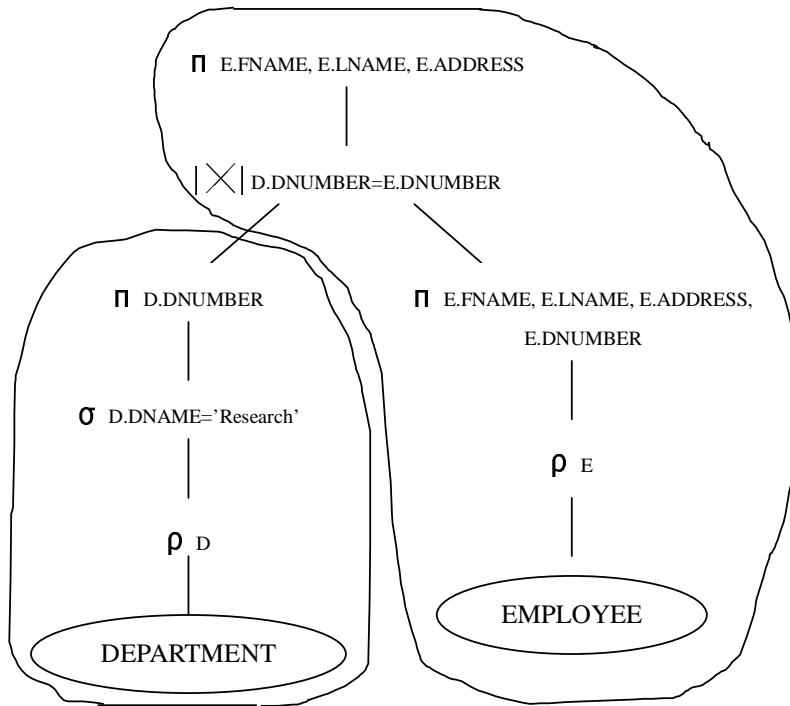


Q1B: SELECT E.FNAME, E.NAME, E.ADDRESS
 FROM EMPLOYEE E, DEPARTMENT D
 WHERE D.NAME='Research' AND D.DNUMBER=E.DNUMBER

Initial tree:



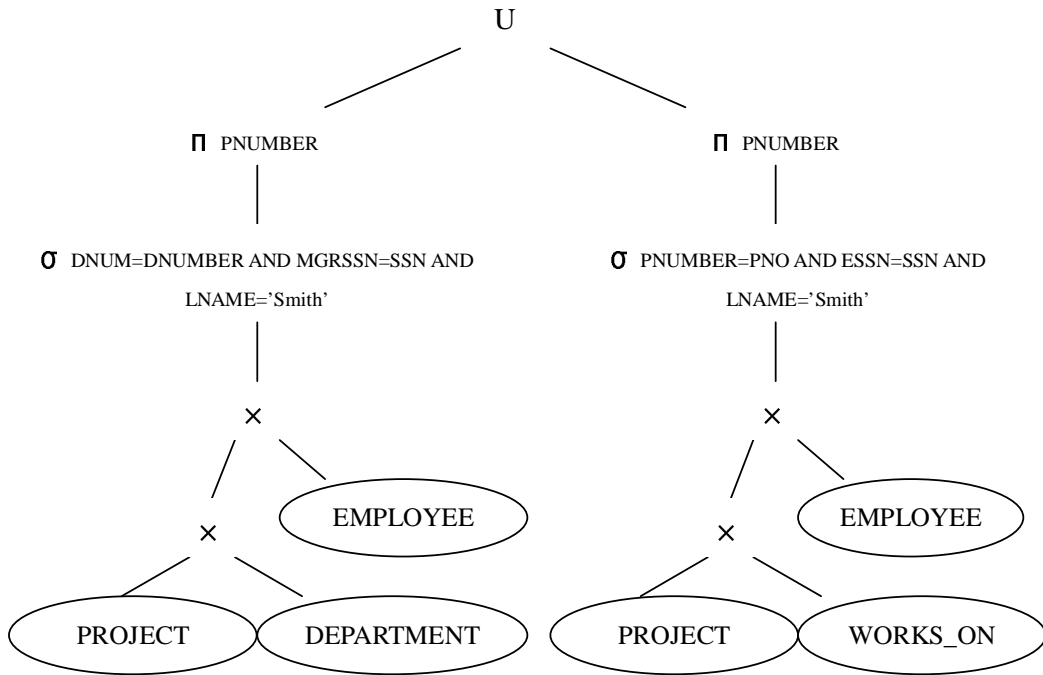
Optimized tree:



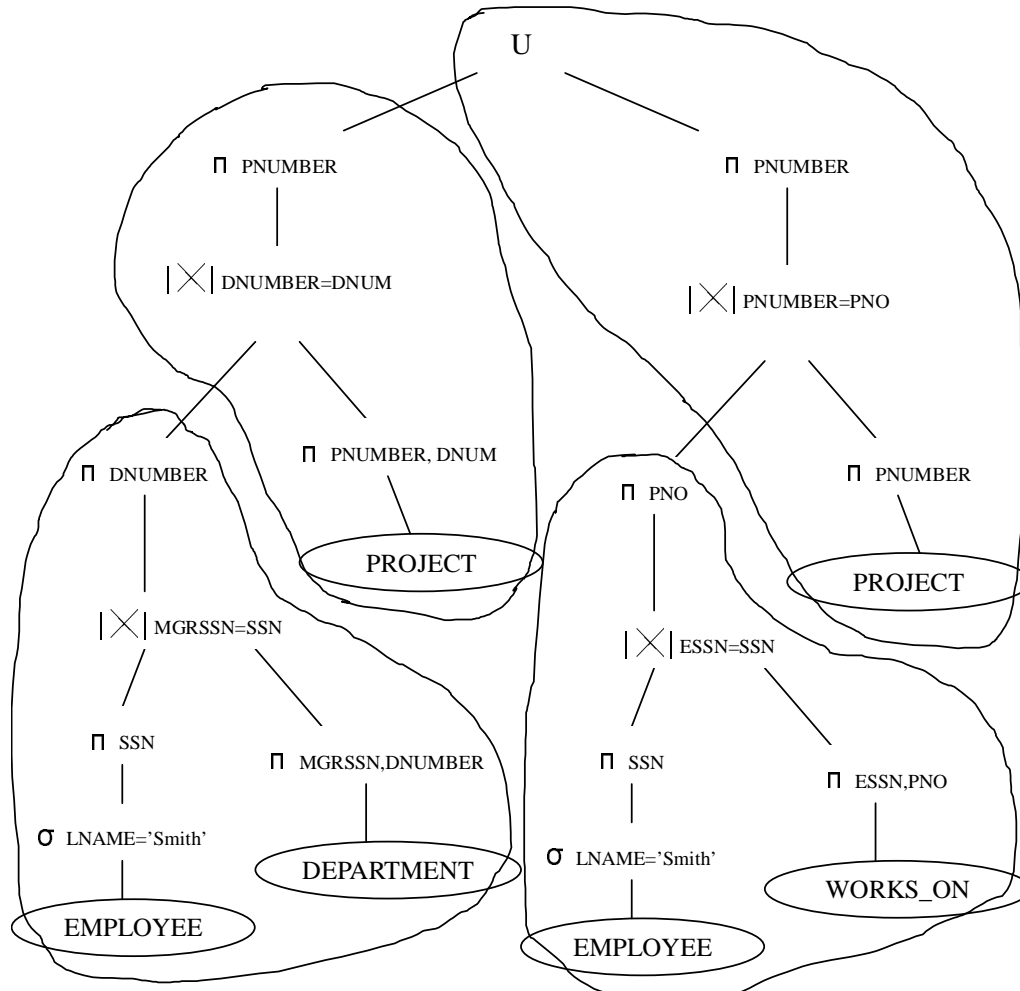
Q4: (SELECT DISTINCT PNUMBER
 FROM PROJECT, DEPARTMENT, EMPLOYEE
 WHERE DNUM=DNUMBER AND MGRSSN=SSN AND
 LNAME='Smith')
 UNION
 (SELECT DISTINCT PNUMBER
 FROM PROJECT, WORKS_ON, EMPLOYEE

WHERE PNUMBER=PNO AND ESSN=SSN AND LNAME='Smith')

Initial tree:

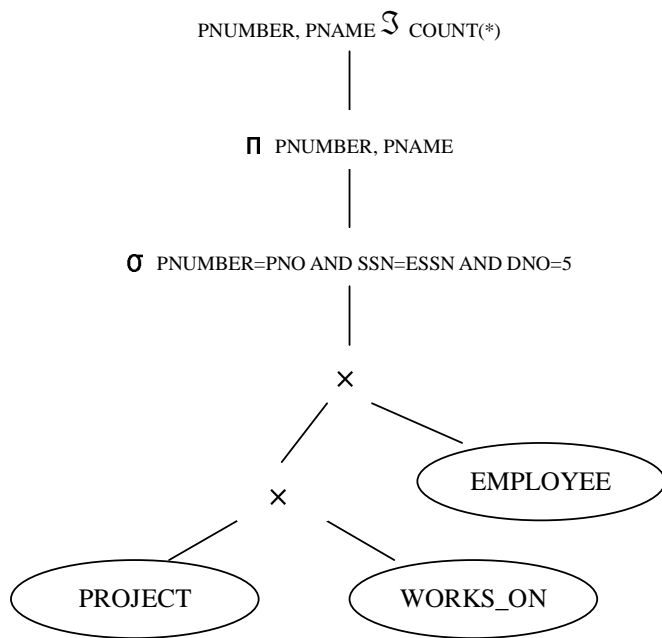


Optimized tree:



Q27: SELECT PNUMBER, PNAME, COUNT(*)
 FROM PROJECT, WORKS_ON, EMPLOYEE
 WHERE PNUMBER=PNO AND SSN=ESSN AND DNO=5
 GROUP BY PNUMBER, PNAME

Initial tree:



Optimized tree:

