

Tutorial 5: Relational Algebra

CS3402 Database Systems

Question 1

➤ Consider the two tables T1 and T2 shown below; show the results of the following operations.

a) $T1 \times T2$

b) $T1 \bowtie_{T1.P=T2.A} T2$

c) $T1 \bowtie_{T1.Q=T2.B} T2$

d) $T1 \bowtie_{T1.R>T2.R} T2$

e) $T1 * T2$

T1

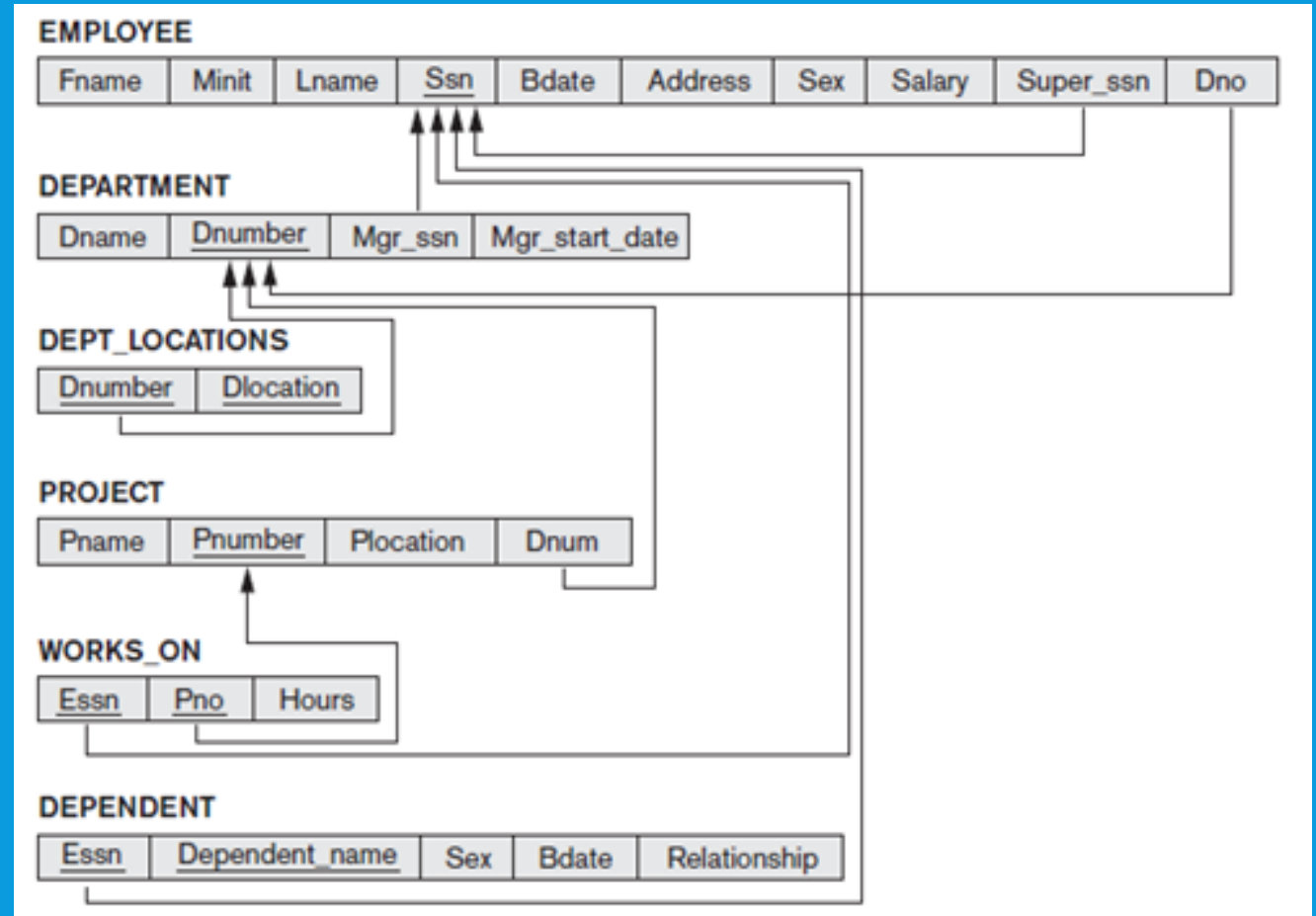
P	Q	R
10	a	5
15	b	8
25	a	6

T2

A	B	R
10	b	6
25	c	3
10	b	5

Question 2 (1/2)

- Consider the COMPANY relational schema shown below; specify the following queries in relational algebra.



Question 2 (2/2)

- a) Find the Ssn (social security number) of all employees who are not supervisors
- b) Find the Ssn of all employees who either work in department 5 or directly supervise an employee who works in department 5
- c) List the names and numbers of all departments locating in 'Houston'
- d) List the first names of all employees who have a dependent with the same first name as themselves
- e) Retrieve the salary of all employees in department 5 who work more than 10 hours on the project named 'ProjectX'