

# CS561 HW 5

All queries on this homework relate to the multi-company database in SQL Chapter

Translate each of the following queries into extended Relational Algebra

1. (Use COUNT to do this one) Find every person who is not skilled in the manufacture of any product manufactured by company “111-22-3333



2. (Use COUNT to do this one) Find every person who is skilled in the manufacture of every product manufactured by 111-22-3333.

3. Find every person who is skilled at the manufacture of more products manufactured by company 111-22-3333 than the average number of the company’s products at which employees of the company are skilled



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4. Find every company whose CEO is skilled at the manufacture of at least one product manufactured by a company of which s/he is not the CEO.



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Translate each of the following queries into SQL, using only SQL constructs that have been discussed thus far.

5. Find every company whose CEO is skilled at the manufacture of at least one product manufactured by a company of which s/he is not the CEO. (<> means not equal to)

SELECT COMPANY.govt\_id

FROM COMPANY, SKILL

WHERE (COMPANY.ceo\_ssn = SKILL.ssn)

AND (COMPANY.govt\_id <> SKILL.manuf\_co)

6. Find every person who is not skilled in the manufacture of any product manufactured by a company s/he works for.

SELECT person.ssn

FROM person

WHERE ((SELECT COUNT(\*)

FROM skill, works\_for

WHERE (skill.ssn = person.ssn)

AND(skill.manuf\_co = works\_for.co\_id)) = 0)

7. Find every company all of whose divisions are headquartered in the same (any) city.

SELECT COMPANY.govt\_id

FROM COMPANY, DIVISION as div

WHERE (COMPANY.govt\_id = div.co\_id)

AND ((COMPANY.hq\_loc = div.div\_hq.loc

8. Find every person who works for at least five different companies.

SECLECT person.ssn

FROM PERSON,

WHERE ( (SELECT COUNT(DISTINCT WORKS\_FOR.co\_id)

FROM WORKS\_FOR

WHERE (WORKS\_FOR.ssn = PERSON.ssn)) >= 5 )

9. Find every person who is either the CEO of a company that has a division headquartered in Boston or works for a company that has a division headquartered in Boston.

SELECT COMPANY.ceo\_ssn

FROM COMPANY, DIVISION

WHERE (COMPANY.govt.id = DIVISION.co\_id)

AND (DIVISION.div\_hq = “Boston”)

UNION

SELECT WORKS\_FOR.ssn

FROM WORKS\_FOR, DIVISION

WHERE (WORKS\_FOR.co\_id = DIVISION.co\_id)

AND (DIVISION.div\_hq = “Boston”)

10. Find every company that has a division headquartered in Philadelphia, which division manufactures a product at whose manufacture the person with SSN 222-33-4444 is skilled.

SELECT DIVISION.co\_id

FROM DIVISION, PRODUCT, SKILL

WHERE (DIVISION.co\_id = PRODUCT.manuf\_co)

AND (PRODUCT.manuf\_co = SKILL.manuf\_co)

AND (PRODUCT.manuf\_div = DIVISION.div\_name)

AND (DIVISON.div\_hq = “Philadelphia”)

AND (SKILL.ssn = “222-33-4444”)