# Homework: Relational Algebra

이름: 학번: 제출일:

Query 1: Retrieve the name and address of employees who work for the "Research" department. Your output must be:

temp3(FNAME:VARCHAR,LNAME:VARCHAR,ADDRESS:VARCHAR)

Number of tuples = 4 Franklin:Wong:638 Voss, Houston, TX: John:Smith:731 Fondren, Houston, TX:

Ramesh:Narayan:971 Fire Oak, Humble, TX: Joyce:English:5631 Rice, Houston, TX:

Query 2: For every project located in "Stafford", list the project number, the controlling department number, and the department manager's last name, address, and birth date.

Your output must be:

temp4(PNUMBER:INTEGER,DNUM:INTEGER,LNAME:VARCHAR,ADDRESS:VARCHAR,BDATE:VARCHAR)

Number of tuples = 2

10:4:Wallace:291 Berry, Bellaire, TX:20-JUN-31: 30:4:Wallace:291 Berry, Bellaire, TX:20-JUN-31:

Query 3: Find the names of employees who work on all the projects controlled by department number 4.

Note that Division operator is NOT supported in RA interpreter Your output must be:

temp11(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 2 Zelaya:Alicia: Jabbar:Ahmad:

Query 4: Make a list of project numbers for projects that involve an employee whose last name is "Smith", either as a worker or as a manager of the department that controls the project.

Your output must be:

temp12(PNO:INTEGER)

Number of tuples = 2 1:

2:

Query 5: List the names of all employees with two or more dependents.

Note that aggregation function is NOT supported in RA interpreter Your output must be:

temp9(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 2 Wong:Franklin: Smith:John:

Query 6: Retrieve the names of employees who have no dependents. Your output must be:

temp4(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 5 Borg:James: Zelaya:Alicia: Narayan:Ramesh: English:Joyce: Jabbar:Ahmad:

Query 7: List the names of managers who have at least one dependent. Your output must be:

temp6(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 2 Wong:Franklin: Wallace:Jennifer:

Query 8: Retrieve the names of all employees who do not work on any project number 1. Your output must be:

temp5(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 6 Borg:James: Wong:Franklin: Wallace:Jennifer: Zelaya:Alicia: Narayan:Ramesh: Jabbar:Ahmad:

Query 9: List the last names of all department managers who have no dependents. Your output must be:

temp5(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 1 Borg:James:

Query 10: Retrieve the names of all employees in department 5 who work more than 10 hours per week on the ProductX project. Your output must be:

temp5(LNAME:VARCHAR,FNAME:VARCHAR)

Number of tuples = 3 Smith:John: Narayan:Ramesh: English:Joyce:

Query 11: Find the names and addresses of all employees who work on at least one project located in Houston but whose department has no location in Houston.

Your output must be:

temp13(LNAME:VARCHAR,FNAME:VARCHAR,ADDRESS:VARCHAR)

Number of tuples = 1

Wallace:Jennifer:291 Berry, Bellaire, TX: