Florida International University

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COP 4710 – Final Assignment

A)

**a. Retrieve the names of all employees in department 5 who work more than 10 hours per week on ProductX project**

rel1 🡨 ( pname=’ProductX’(PROJECT))

rel2 🡨 (rel1) ..\..\3400\joinop.gif pnumber = pno (WORKS\_on)

rel3 🡨 (EMPLOYEE) \* ssn=essn ( hours>10 (rel2))

answer 🡨  fname, lname( dno=5(rel3))

**c. Find the names of all employees who are directly supervised by ‘Franklin Wong’**

rel1 🡨 p ssn( fname=’Franklin’ AND lname =’wong’(EMPLOYEE))

rel2 🡨 (EMPLOYEE) ..\..\3400\joinop.gifsuperssn = ssn (rel1)

answer 🡨  fname, lname (rel)

**i. 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.**

rel1 🡨  plocation=’Houston’(PROJECT)

rel2(ssn) 🡨  essn((WORKS\_ON) ..\..\3400\joinop.gifpno = pnumber (rel1)

rel3 🡨  plocation =’Houston’ (DEPARTMENT)

rel4 🡨  dnumber(DEPARTMENT) –  dnumber (rel3)

rel5 🡨 p ssn ((EMPLOYEE) ..\..\3400\joinop.gifdno=dnumber(rel4))

rel6 🡨 rel2 – rel5

answer 🡨  fname, lname, address (EMPLYOEE \* rel6)

**j. List the last names of all department managers who have no dependents.**

rel1(ssn) 🡨  mgrssn (DEPARTMENT)

rel2(ssn) 🡨  essn (DEPENDANT)

rel3 🡨 rel1 – rel2

answer 🡨  fname, lname (EMPLOYEE \* rel3)

Please consider 3 = EXISTS

B)

(3 t)(3 a)(3 b) (EMPLOYEE (qrstuvwyxz) and DEPENDENT (abcde) and a = t and b = q

C)

{t.A, t.B, t.C, q.D, q.E | R( t ) and S( q ) and t.C = q.C}

{xyzvw | R( x y z ) and ( 3 v )( S ( u v w) and z = u) }

D)

a.

The key of BOOKS is Book\_title

b.

Book1(Book\_title, authorName)

Book2(Book\_title, Publisher, Book\_type, listPrice)

Book3(AuthorName, author\_affiliation)

c.

Book1(Book\_title, authorName)

Book2(Book\_title, Publisher, Book\_type)

Book3(Book\_type, listPrice)

Book4(authorName, author\_affiliation)

E)

Both decompositions are preserved and losslessly