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Assignment1 :TRC Queries

Collaborated:Aditi Soni & Yash Shah

Question 20. A)

{ (d.dept,sm.major) | EmployedBy(d) ∧ StudentMajor(sm) ∧ d.sid=sm.sid ∧ d.salary >=20,000 }

Question 20.b)

{(s1.sid, s2.sid) ⎜ student(s1) ∧ student(s2) ∧ s1.sid ≠ s.sid ∧

¬∃hf1 ∈ hasfriend ¬∃eb1 ∈ employedby ¬∃hf2 ∈ hasfriend ¬∃eb2 ∈ employedby(

(s1.sid = hf1.sid ∧

eb1.sid = hf1.sid2 ∧  
 eb1.deptname = ‘CS’) – (s2.sid = hf2.sid1 ∧

hf2.sid2 = eb2.sid ∧

eb2.deptname = ‘CS’)) ∧

¬∃hf3 ∈ hasfriend ¬∃eb3 ∈ employedby ¬∃hf4 ∈ hasfriend ¬∃eb4 ∈ employedby(

(s2.sid = hf3.sid1 ∧

hf3.sid2 = eb3.sid ∧

eb3.deptname = ‘CS’) – (s1.sid = hf4.sid ∧

eb1.sid = hf4.sid2 ∧  
 eb1.deptname = ‘CS’))}

Question 20. c)

{(m.major) ⎜ major(m) ∧  
∃sm1 ∈ studentmajor1 ∃sm2 ∈

(s2.sid = hf3.sid1 ∧  
hf3.sid2 = eb3.sid ∧  
eb3.deptname = ‘CS’) – (s1.sid = hf4.sid ∧

eb1.sid = hf4.sid2 ∧ eb1.deptname = ‘CS’))}

Question 22. a)

∃m(Major(m) ∧∀sm1∀sm2(studentMajor(sm2) ∧

sm1.major = m.major ∧

sm1.major = m.major ∧

sm1.sid = sm2.sid))

Question 23. a)

¬∃s¬∃e(Student(s) ∧ employedby()∧ s.sid = e.sid ∧

¬∃h¬∃e1(hasfriend(h) ∧ employedby(e1) ∧ s.sid = h.sid1 ∧

e1.sid = h.sid2 ∧ e.deptname = e1.deptname ∧

e.salary = e1.salary))

Question 24. a)

∀d(department(d) ∀e1∀e2(employedby(e1)…employedby(e2) ∧

e1.deptname = d.deptname…e2.deptname = d.deptname ∧

e1.salary = e2.salary ∧

∀sm1∀sm2(studentmajor(sm1) ∧ studentmajor(sm2) ∧

sm1.sid = e1.sid ∧ sm2.sid = e2.sid…sm1.major = sm2.major))