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CSE 132A Winter 2017

1 i

$$\begin{aligned} & 1(i) \quad \exists p \in \text{prerequisite}, \\ & \{ s: \text{sid} \mid \exists r \in \text{record} [S(\text{sid}) = r(\text{sid}) \wedge \\ & \quad \forall x \in \text{record} [x(\text{sid}) = S(\text{sid}) \wedge x(\text{cid}) = p(\text{pre-cid}) \wedge \\ & \quad p(\text{cid}) = \text{'CSE 132A'} \rightarrow \exists y \in \text{record} (y(\text{cid}) = x(\text{cid}) \wedge \\ & \quad y(\text{grade}) \geq 2.0)]] \} \end{aligned}$$

1 ii

I(ii)

$$\{ S: sid \mid \exists r \in \text{record} \exists p \in \text{prerequisite} [S(sid) = r(sid) \wedge \\ \neg \exists x \in \text{record} [x(sid) = S(sid) \wedge x(cid) = p(\text{pre-cid}) \wedge \\ p(cid) = 'CSE132x' \wedge \neg \exists y \in \text{record} (y(cid) = x(cid) \\ \wedge y(\text{grade}) \geq 2.0)]]] \}$$

1 iii

1(iii)

Select r.sid

from record r, prerequisite p
where not exists

(Select x.sid

from record x prerequisites y

where x.grade < 2.0 or

(~~r.cid~~ r.cid <> p.pre.cid

and p.cid = 'CSE132X'))

2i

CSE 132 HW1

$$\{ a: cid. \mid \exists c \in \text{record} [c(cid) = a(cid)] \wedge$$
$$\forall x \notin \text{record} [x(cid) = 'CSE132A' \rightarrow$$
$$\exists y \in \text{record} [x(sid) = y(sid) \wedge$$
$$y(cid) = c(cid)]] \}$$

2 ii

$$\{a : a \neq \emptyset \mid \exists C \in \text{record} [C(a) = a(Ca)] \wedge \\ \forall x \in \text{record} [x(a) = 'SE132A' \wedge \\ \neg \exists y \in \text{record} (x(s) = y(s) \wedge \\ y(a) = C(a))]\} \}$$

2 iii

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Select r.Cid  
from record r  
where not Exists  
  (Select x.Stid  
   from record x  
   where x.Cid != 'CSE132A')
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