

CIS3530 A1

Conor Roberts #1056167

Question #1

A

$\sigma \text{ cNum}=3530 \text{ Offering}$

B

$\pi \text{ cNum, term, name } (\pi \text{ cNum, term } \sigma \text{ year}=2016 \text{ Offering} \bowtie \sigma \text{ dept}='CIS' \text{ Course})$

C

$\pi \text{ cNum, name } (\sigma \text{ instructor}='Ritu' \text{ Offering} \bowtie \text{ Course})$

D

$\pi \text{ sID, firstName, lastName, email, cgpa } ((\pi \text{ oID } \sigma \text{ cNum}=3530 \wedge \text{ year}=2017 \wedge \text{ term}='F' \text{ Offering} \bowtie \text{ Took}) \bowtie \text{ Student})$

E

$(\pi \text{ sID Student} - \pi \text{ sID } (\pi \text{ oID } \sigma \text{ cNum}=3530 \text{ Offering} \bowtie \text{ Took})) \bowtie \text{ Student}$

F

$(\pi \text{ oID, sID Took} \div (\pi \text{ oID } (\sigma \text{ dept}='HIS' \text{ Course} \bowtie \text{ Offering}))) \bowtie \text{ Student}$

G

$\pi \text{ a.cNum, a.dept, b.cNum, b.dept } \sigma \text{ a.cNum}=b.\text{cNum} \wedge \text{ a.dept} \neq b.\text{dept} \wedge \text{ a.dept} < b.\text{dept} \text{ (} \rho \text{ a Course } \times \rho \text{ b Course)}$

H

$$\pi \text{ cNum Course } \bowtie \pi \text{ cNum,term,year Offering}$$

I

Question

Find the student with the highest cgpa

Solution

$$\pi \text{ firstName,lastName,cgpa Student } - \pi \text{ a.firstName,a.lastName,a.cgpa } \sigma \text{ a.cgpa < b.cgpa } (\rho \text{ a } \pi \text{ firstName,lastName,cgpa Student } \times \rho \text{ b } \pi \text{ firstName,lastName,cgpa Student})$$

Student.firstName	Student.lastName	Student.cgpa
'William'	'Cooper'	4