HW7

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1 Find the names of the reps who represent the territory "EMEA".

$\pi_{rname}(\sigma_{territory=\text{“}EMEA''}(reps))$

2 Find the distinct names of all reps who earned less than 10,000 in 2023.

$\pi_{reps.rname}(\sigma_{(earnings.amount<10000)\wedge(earnings.year=2023)}(reps * earnings))$

3 How many (distinct) students majoring in "CS" had a score above 94.51 in any four credit hours course?

$\mathfrak{F}_{<COUNT(Students.tid)>}(\pi_{Students.tid}(\sigma_{(Students.major=\text{“}CS'')\wedge(Enrollments.score>94.51)\wedge(Courses.creditHours=4)}(Studen$
$Enrollments * Sections * Courses)))$

4 How many courses with fewer than four credits are offered in each college? List the college and the number of courses in that college.

$\mathfrak{F}_{cname,<COUNT(cid)>}(\pi_{cname,cid}(\sigma_{hours<4}(Courses)))$

5 How many students were enrolled (i.e., took any course) in the Fall 2023 term?

$\mathfrak{F}_{<COUNT(Students.tid)>}(\pi_{Students.tid}(\sigma_{(Sections.term=\text{“}Fall'')\wedge(Sections.year=2023)}(Students*Enrollments*$
$Sections)))$

6 List the names of all students in the college "Khoury" who are on coop and have a GPA between 3.0 and 3.4.

$\pi_{sname}(\sigma_{(college=\text{“}Khoury'')\wedge(onCoop=True)\wedge(gpa\geq 3.0)\wedge(gpa\leq 3.4)}(Students))$

7 Find the distinct names of all courses with 3 or more credits .

$\{c.cname : Courses(c) \wedge c.credits \geq 3\}$

8

$\{c.cid, c.cname, c.hours : Courses(c) \wedge c.hours \leq 4\}$

9

$\rho_{YearAmount(year,amount)}({}_{year}\mathfrak{F}_{<year,SUM(amount)>}(\pi_{year,amount}(\sigma_{territory\neq\text{“}EMEA''}(reps*earnings))))$

10

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WITH x AS (
SELECT * FROM reps NATURAL JOIN earnings WHERE amount < 50000
)
SELET year, amount
FROM x
WHERE year in (2021, 2022, 2023)
AND territory = “EMEA”
```