Question 9

Student(sid, smane, email)

Transcript(sid, cid, grade)

Course(cid, cname, credits)

**1.List students who have taken at least two courses.**

p(T1(T1sid, T1cid, grade), Transcript)

X= T1 ⨯ Transcript

Y= π Tsid(σ Tcid ≠ T1cid ∧ Tsid = T1sid (X))

Student ⨝ Ssid = Tsid Y

SELECT S.sname

FROM Students AS S INNER JOIN Transcript AS T ON T.sid = S.id

GROUP BY S.sid, S.sname

HAVING COUNT(\*) >= 2

**2. List student who has taken exactly one course;**

SELECT S.sname

FROM Students AS S INNER JOIN Transcript AS T ON T.sid = S.id

GROUP BY S.sid, S.sname

HAVING COUNT(\*) = 1

**3. List students who have taken all courses.**

SELECT S.Sname

FROM Students AS S INNER JOIN Transcript AS T ON S.sid = T.sid

GROUP BY S.sid, S.sname

HAVING COUNT(\*) = (SELECT COUNT(\*) FROM Courses)

**4. List student who have taken no courses.**

SELECT S.sname

FROM Students AS S INNER JOIN Transcript AS T ON T.sid = S.id

GROUP BY S.sid, S.sname

HAVING COUNT(\*) = 0