2. Write a **tuple relational calculus expression** that satisfies this query?

* *Find the distinct names of all "DS" major students who score less than 60% in either course 5200 or in course 5800 (using cid).*

Solution:

{S.sname | Students(S) ∧ ((∃R)(∃C)(Registration(R) ∧ Courses(C) ∧ S.major = “DS” ∧ R.grade < 0.6 ∧(C.cid=5200 ∨ C.cid=5800) ∧ S.sid=R.sid ∧ R.cid=C.cid)}

Note: I have assumed that grades are real attribute, and the marks are in decimal. So 60% has been converted to 0.6.