Relational Algebra Part 1

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**Practice Queries**

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**Answers**

1. πname(student)
2. πlecturer(subject)
3. σlecturer=Curtis(subject)
4. student - σname=ling(student)
5. σname=joe(student \* enrolledIn)
6. student ⋈ ­student.id=enrolledIn.id enrolledIn
7. σname=joe(student ⋈ enrolledIn)
8. πid,code(σname=joe(student ⋈ enrolledIn))
9. σname=hector(student) ⋈ enrolledIn ⋈ subject
10. πname,lecturer(σlecturer=Curtis(subject ⋈ enrolledIn ⋈ student))

**Formulating Queries in Relational Algebra**

Give the following queries in the relational algebra using the relational schema

student(id, name)

enrolledIn(id, code)

subject(code, lecturer)

1. What are the names of students enrolled in cs3020?

πname(σcode=cs3020(student ⋈ enrolledIn))

1. Which subjects is Hector taking?

πcode(σname=Hector(student ⋈ enrolledIn))

1. Who teaches cs1500?

πlecturer(σcode=cs1500(subject))

1. Who teaches cs1500 or cs3020?

πlecturer(σcode=cs1500 OR code=cs3020(subject))

1. What are the names of students in cs1500 or cs3010?

πname(σcode=cs1500(student ⋈ enrolledIn) U πname(σcode=cs3010(student ⋈ enrolledIn))

1. What are the names of students in both cs1500 and cs1200?

πname(σcode=cs1500(student ⋈ enrolledIn) ꓵ πname(σcode=cs1200(student ⋈ enrolledIn))

1. What are the codes of all the subjects taught?

πcode(subject)

1. What are the names of all the students?

πname(student)