

# Practice Queries

CS 4604 (Fall 2008)

September 02, 2008

Consider the following tables.

student		enrolledIn		subject	
id	name	id	code	code	lecturer
1234	joe	1234	cs1500	cs1500	curtis
4000	hector	1234	cs1200	cs2001	dave
2000	ling	1234	cs2001	cs3010	curtis
		4000	cs3010	cs2001	olivier
		4000	ma3000	ma3000	roger

Figure out which relational algebra operations were used to obtain each of the following tables.

1.  
name  
-----  
joe  
hector  
ling

---

2.  
lecturer  
-----  
curtis  
dave  
olivier  
roger

---

3.  
code | lecturer  
-----  
cs3010 | curtis  
cs1500 | Curtis

There are two ways to get this table. Try to list both. *Hint*: Use an OR in the selection condition for one method.

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4.

id	name
1234	joe
4000	hector

There are three ways to get this table. *Hint*: How about using the difference operator?

5.

id	name	id	code
1234	joe	1234	cs1500
1234	joe	1234	cs1200
1234	joe	1234	cs2001
1234	joe	4000	cs3010
1234	joe	4000	ma3000

6.

id	name	id	code
1234	joe	1234	cs1500
1234	joe	1234	cs1200
1234	joe	1234	cs2001

7.

id	name	code
1234	joe	cs1500
1234	joe	cs1200
1234	joe	cs2001

8.

id	code
1234	cs1500
1234	cs1200
1234	cs2001

9.

id	name	code	lecturer
4000	hector	cs3010	curtis
4000	hector	ma3000	roger

10.

name	lecturer
joe	curtis
hector	curtis

# 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?
2. Which subjects is Hector taking?
3. Who teaches cs1500?
4. Who teaches cs1500 or cs3020?
5. Who teaches at least two different subjects?
6. What are the names of students in cs1500 or cs3010?
7. What are the names of students in both cs1500 and cs1200?
8. What are the names of students in at least two different subjects?
9. What are the codes of all the subjects taught?
10. What are the names of all the students?
11. What are the names of all the students in cs1500?
12. What are the names of students taking a subject taught by Roger.
13. What are the names of students who are taking a subject *not* taught by Roger?