

SQL 6

Asher Kirshtein

“Find all combinations of students and faculty where the student’s major is different from the faculty member’s department.” The resultset should contain the student’s id, first and last name, and major. It should also contain the faculty member’s id, name, and department. Order the results by ascending student id.

```
another_university=# SELECT s.stuid, s.firstname, s.lastname, s.major, f.facid, f.name, f.department FROM student s JOIN faculty f ON s.major != f.department ORDER BY s.stuid ASC;
```

stuid	firstname	lastname	major	facid	name	department
-------	-----------	----------	-------	-------	------	------------

S1001	Tom	Smith	History	F101	Adams	Art
S1001	Tom	Smith	History	F105	Tanaka	CSC
S1001	Tom	Smith	History	F110	Byrne	Math
S1001	Tom	Smith	History	F221	Smith	CSC
S1002	Ann	Chin	Math	F101	Adams	Art
S1002	Ann	Chin	Math	F105	Tanaka	CSC
S1002	Ann	Chin	Math	F115	Smith	History
S1002	Ann	Chin	Math	F221	Smith	CSC
S1005	Perry	Lee	History	F101	Adams	Art
S1005	Perry	Lee	History	F105	Tanaka	CSC
S1005	Perry	Lee	History	F110	Byrne	Math
S1005	Perry	Lee	History	F221	Smith	CSC
S1010	Edward	Burns	Art	F105	Tanaka	CSC
S1010	Edward	Burns	Art	F110	Byrne	Math
S1010	Edward	Burns	Art	F115	Smith	History
S1010	Edward	Burns	Art	F221	Smith	CSC
S1013	Owen	McCarthy	Math	F101	Adams	Art
S1013	Owen	McCarthy	Math	F105	Tanaka	CSC
S1013	Owen	McCarthy	Math	F115	Smith	History
S1013	Owen	McCarthy	Math	F221	Smith	CSC
S1015	Mary	Jones	Math	F101	Adams	Art
S1015	Mary	Jones	Math	F105	Tanaka	CSC
S1015	Mary	Jones	Math	F115	Smith	History
S1015	Mary	Jones	Math	F221	Smith	CSC
S1020	Jane	Rivera	CSC	F101	Adams	Art
S1020	Jane	Rivera	CSC	F110	Byrne	Math
S1020	Jane	Rivera	CSC	F115	Smith	History

(27 rows)

-- More --

“Find the class numbers of all the classes taught by Byrne of the Math department”

```
another_university=# SELECT classnumber FROM class WHERE facid = 'F110';  
classnumber  
-----  
MTH101B  
MTH103C  
(2 rows)
```

“Find the names and faculty id of all Faculty members who teach a class in Room H221”

```
another_university=# SELECT f.name, f.facid, c.room FROM faculty f JOIN class c ON c.room = 'H221';
```

name	facid	room
Adams	F101	H221
Adams	F101	H221
Tanaka	F105	H221
Tanaka	F105	H221
Byrne	F110	H221
Byrne	F110	H221
Smith	F115	H221
Smith	F115	H221
Smith	F221	H221
Smith	F221	H221

(10 rows)

“Return last name, first name and student ids of all students in any class taught by F110.”. Order the results by ascending student last name”

```
another_university=# SELECT s.lastname, s.firstname, s.stuid, f.facid FROM student s JOIN faculty f ON f.facid = 'F110'  
ORDER BY s.lastname ASC;
```

lastname	firstname	stuid	facid
Burns	Edward	S1010	F110
Chin	Ann	S1002	F110
Jones	Mary	S1015	F110
Lee	Perry	S1005	F110
McCarthy	Owen	S1013	F110
Rivera	Jane	S1020	F110
Smith	Tom	S1001	F110

(7 rows)

“Return the student id, last name, first name, major, and credits of all students enrolled in any class.”. Order the result-set by ascending last name

```
another_university=# SELECT s.stuid, s.lastname, s.firstname, s.major, s.credits FROM student s JOIN enroll e ON e.stuid  
= s.stuid ORDER BY s.lastname ASC;
```

stuid	lastname	firstname	major	credits
S1010	Burns	Edward	Art	63
S1010	Burns	Edward	Art	63
S1002	Chin	Ann	Math	36
S1002	Chin	Ann	Math	36
S1002	Chin	Ann	Math	36
S1020	Rivera	Jane	CSC	15
S1020	Rivera	Jane	CSC	15
S1001	Smith	Tom	History	90
S1001	Smith	Tom	History	90

(9 rows)

“Find the first name, last name and class number of all students whose grades in that course class are missing”

```
another_university=# SELECT s.firstname, s.lastname, c.classnumber FROM student s JOIN enroll c ON s.stuid = c.stuid WHERE c.grade IS NULL;
```

firstname	lastname	classnumber
Edward	Burns	MTH103C
Edward	Burns	ART103A

(2 rows)

“Return the faculty id of all faculty who are assigned to the History department or who teach in Room H221.” Order results by ascending faculty id, and eliminate duplicates if any

```
another_university=# SELECT DISTINCT f.facid, c.room FROM faculty f JOIN class c ON f.facid = c.facid WHERE f.department  
= 'History' OR c.room = 'H221' ORDER BY f.facid ASC;  
facid | room  
-----+-----  
F101  | H221  
F115  | H221  
(2 rows)
```


“Find the total number of different students enrolled in classes”.

```
another_university=# SELECT DISTINCT s.stuid FROM student s JOIN enroll e ON e.stuid = s.stuid;  
stuid  
-----  
S1020  
S1001  
S1010  
S1002  
(4 rows)
```

“Find the sum of all credits accumulated by history majors.”

```
another_university=# SELECT SUM (s.credits) FROM student s WHERE s.major = 'History';
sum
-----
  93
(1 row)
```

“Find the student with the largest number of credits.”

```
another_university=# SELECT s.stuid, s.lastname, s.firstname FROM student s WHERE credits = (SELECT MAX(credits) FROM student)
another_university=# ;
 stuid | lastname | firstname
-----+-----+-----
 S1001 | Smith    | Tom
(1 row)
```