

Ledwiska Toribio and Nicole Chan

SQL> start 1

```
SQL> (select FIRSTNAME from Students, Enrollments, Classes
  2   where Classes.DEPT_CODE = 'CS'
  3   and Students.Sid = Enrollments.Sid
  4   and Enrollments.Classid = Classes.Classid)
  5 INTERSECT
  6 (select FIRSTNAME from Students, Enrollments, Classes
  7   where Classes.DEPT_CODE = 'Math'
  8   and Students.Sid = Enrollments.Sid
  9   and Enrollments.Classid = Classes.Classid);
```

FIRSTNAME

Anne
Becky
Terry

SQL> start 2

```
SQL> select dept_code, course# from courses c where not exists
  2   (select * from CLASSES
  3   where course# = c.course#
  4   and semester = 'Spring'
  5   and year = '2024');
```

DEPT COURSE#

---- -

CS	240
CS	432
CS	552
BIOL	425
CS	524
Math	314
CS	547

7 rows selected.

SQL> start 3

```
SQL> select FIRSTNAME from STUDENTS s where not exists
  2   (select * from Enrollments
  3   where sid = s.sid
  4   and lgrade = 'C');
```

FIRSTNAME

Terry
Tracy
Jack
Terry
Becky
Tom
Raju

7 rows selected.

SQL> start 4

```
SQL> select distinct LASTNAME from STUDENTS s where exists
  2   (select * from Enrollments
  3   where lgrade is not null
  4   and sid = s.sid
  5   group by sid
  6   having min(lgrade) = max(lgrade)
  7   and min(lgrade) = 'A');
```

LASTNAME

Lee
Zillman
Uppalapati
Wang

SQL> start 5

```
SQL> select dept_code, course# from (  
  2   select dept_code, course#, count(*) num  
  3   from Classes  
  4   group by dept_code, course#  
  5 ) temp  
  6 where num in (  
  7   select min(count(*))  
  8   from Classes  
  9   group by dept_code, course#);
```

DEPT COURSE#

CS 240
CS 524
CS 535
CS 547
CS 557

SQL> start 6

```
SQL> SELECT sid, firstname FROM students  
  2 WHERE sid IN (SELECT sid FROM enrollments GROUP BY sid HAVING COUNT(*) >  
2);
```

SID FIRSTNAME

B001 Anne
B002 Terry
B003 Tracy
B005 Jack
B006 Terry
B007 Becky

6 rows selected.

SQL> start 7

```
SQL> SELECT DISTINCT class.*  
  2 FROM classes class  
  3 JOIN courses course ON class.dept_code = course.dept_code AND class.course#  
= course.course#  
  4 JOIN enrollments enroll ON class.classid = enroll.classid  
  5 WHERE course.dept_code = 'CS'  
  6 AND class.semester = 'Spring'  
  7 AND class.year = 2024  
  8 AND class.classid IN (  
  9   SELECT classid  
 10   FROM enrollments  
 11   GROUP BY classid  
 12   HAVING COUNT(*) < 3);
```

CLASS DEPT COURSE# SECT# YEAR SEMEST LIMIT CLASS_SIZE

c0013 CS 532 1 2024 Spring 29 28
c0011 CS 535 1 2024 Spring 60 60
c0008 CS 557 1 2024 Spring 40 39

SQL> start 8

```

SQL> SELECT student.sid, firstname
  2 FROM students student
  3 JOIN enrollments enroll ON student.sid = enroll.sid
  4 JOIN classes class ON enroll.classid = class.classid
  5 JOIN courses course ON class.dept_code = course.dept_code AND class.course#
= course.course#
  6 WHERE course.dept_code = 'Math' AND course.course# BETWEEN 200 AND 299
  7 GROUP BY student.sid, student.firstname
  8 HAVING COUNT(*) = (
  9     SELECT COUNT(*)
 10     FROM courses
 11     WHERE dept_code = 'Math' AND course# BETWEEN 200 AND 299
 12 );

```

```

SID  FIRSTNAME
----
B007 Becky

```

```

SQL> start 9
SQL> (SELECT course.title
  2 FROM courses course
  3 JOIN classes class ON course.dept_code = class.dept_code AND course.course#
= class.course#
  4 JOIN enrollments student ON class.classid = student.classid
  5 WHERE student.sid = 'B003')
  6 MINUS
  7 (SELECT course.title
  8 FROM courses course
  9 JOIN classes class ON course.dept_code = class.dept_code AND course.course#
= class.course#
 10 JOIN enrollments student ON class.classid = student.classid
 11 WHERE student.sid = 'B005');

```

no rows selected

```

SQL> start 10
SQL> SELECT DISTINCT firstname
  2 FROM students student
  3 JOIN enrollments enroll ON student.sid = enroll.sid
  4 JOIN classes class ON enroll.classid = class.classid
  5 JOIN courses course ON class.dept_code = course.dept_code
  6 AND class.course# = course.course#
  7 WHERE enroll.classid IN (
  8     SELECT en.classid
  9     FROM enrollments en
 10     WHERE en.sid = 'B002');

```

```

FIRSTNAME
-----
Barbara
Jack
Terry
Anne
Becky
Tracy

```

6 rows selected.

```

SQL> start 11
SQL> select dept_code, course#, semester, year from classes
  2 group by dept_code, course#, semester, year
  3 having count(course#) >= 2;

```

```

DEPT    COURSE# SEMEST  YEAR

```

```

-----
Math      314 Spring      2022
CS        432 Spring      2022

```

```

SQL> start 12
SQL> select distinct s.sid, s.lastname from students s
  2   join enrollments e
  3     on s.sid = e.sid
  4   join (
  5     select classid, min(lgrade) g
  6     from enrollments
  7     group by classid
  8   ) temp
  9     on e.classid = temp.classid
 10    and e.lgrade = temp.g;

```

```

SID  LASTNAME
-----
B006 Zillman
B002 Buttler
B009 Uppalapati
B007 Lee
B001 Broder
B003 Wang
B004 Callan

```

7 rows selected.

```

SQL> start 13
SQL> select c.dept_code, c.course#, co.title, NVL(e.lgrade, 'To be assigned')
grade
  2   from enrollments e join classes c
  3     on e.classid = c.classid
  4   join courses co
  5     on c.course# = co.course#
  6   where e.sid = 'B007';

```

```

DEPT  COURSE# TITLE                                GRADE
-----
Math      221 calculus I                                A
CS        532 database systems                        A
CS        557 distributed systems                    A
CS        535 data mining                            A

```

```

SQL> start 14
SQL> select distinct co.dept_code, co.course#, co.title
  2   from Courses co
  3   join Classes c on co.course# = c.course#
  4   where co.title like '%data%'
  5     and not exists (
  6       select * from Students s
  7       where s.gpa > 3.3
  8     and not exists (
  9       select * from Enrollments e
 10       where e.sid = s.sid
 11       and e.classid = c.classid));

```

```

DEPT  COURSE# TITLE
-----
CS        532 database systems

```

```

SQL> start 15
SQL> select s.sid, s.lastname, c.cgpa
  2   from Students s

```

```

3  join (select e.sid, sum(g.ngrade) / count(e.classid) cgpa
4      from Enrollments e
5      join (select lgrade, ngrade from Grades) g
6          on g.lgrade = e.lgrade
7      group by e.sid
8      ) c
9      on s.sid = c.sid
10     order by c.cgpa asc;

```

SID	LASTNAME	CGPA
B004	Callan	2.5
B005	Smith	3
B001	Broder	3
B002	Buttler	3.75
B003	Wang	4
B009	Uppalapati	4
B006	Zillman	4
B007	Lee	4

8 rows selected.

SQL> spool off