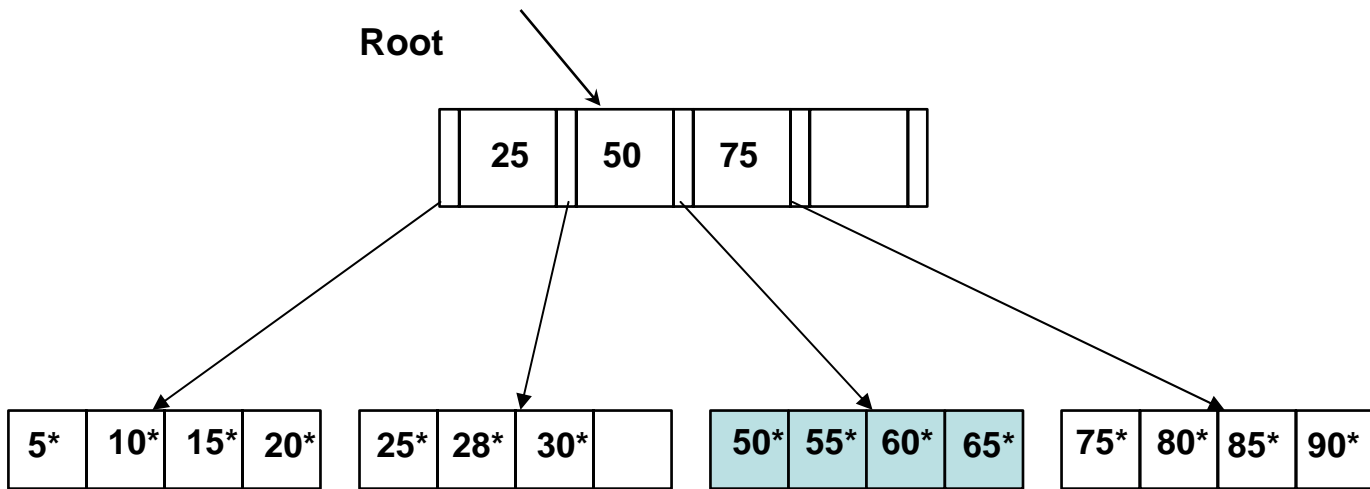
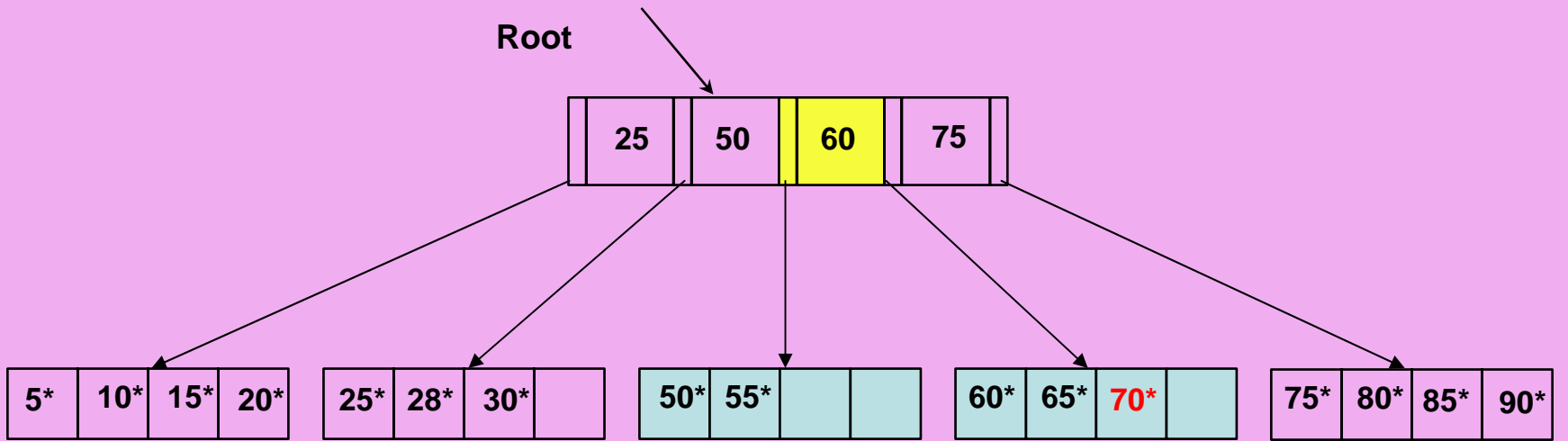
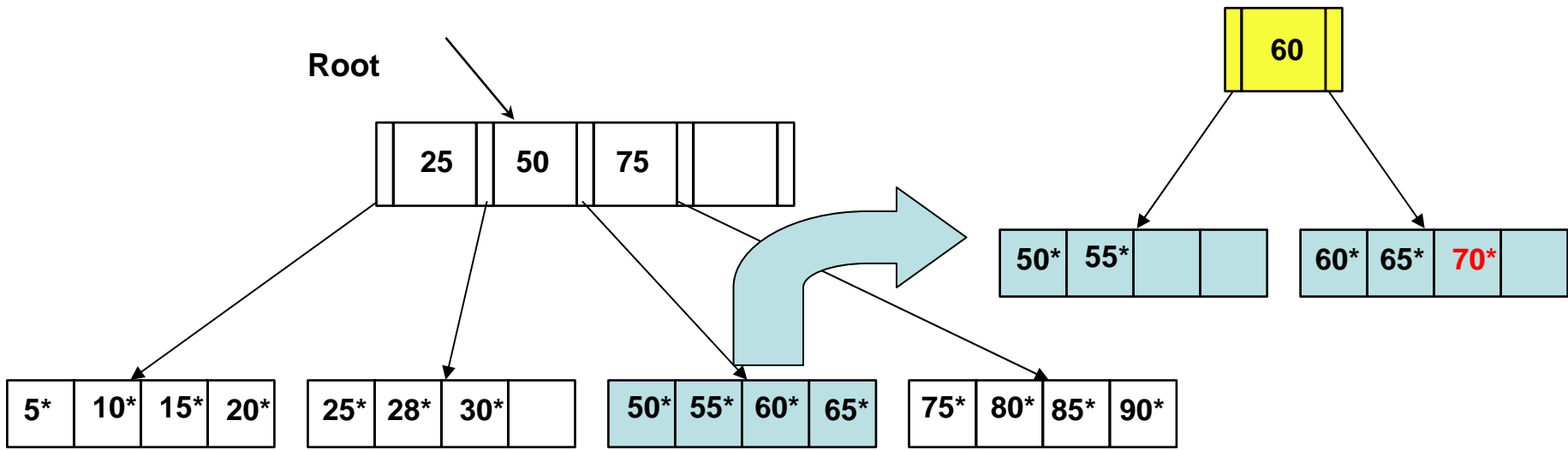
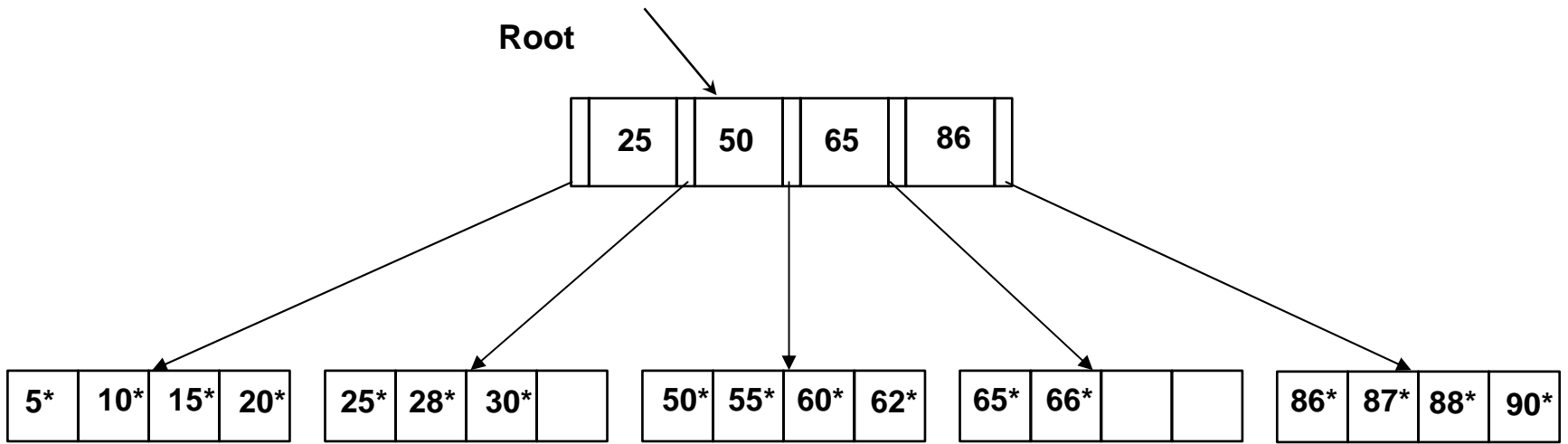


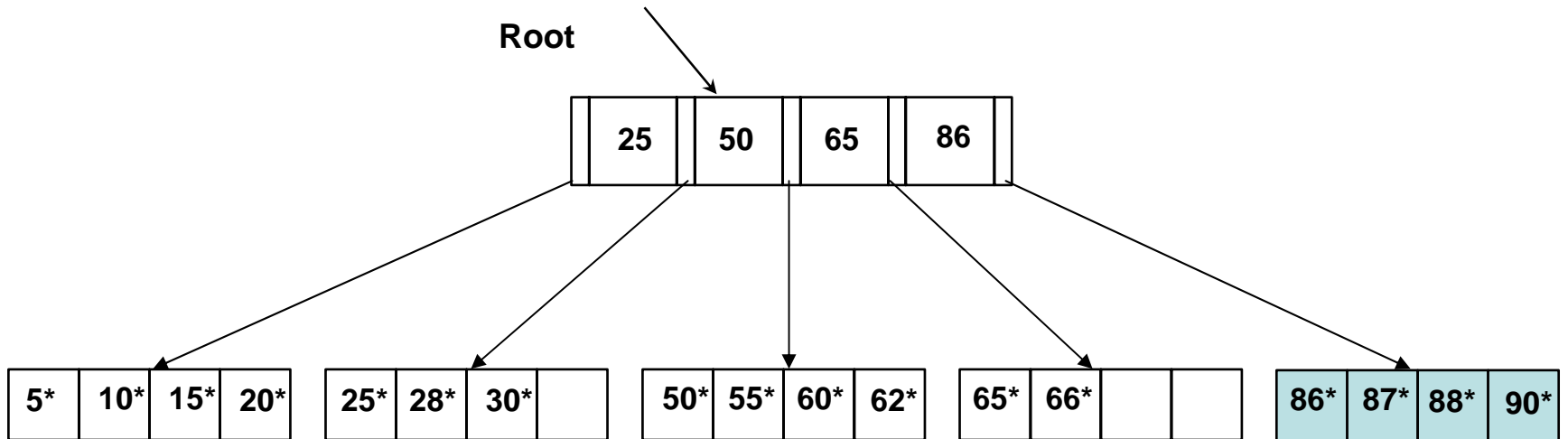
INSERT 70*

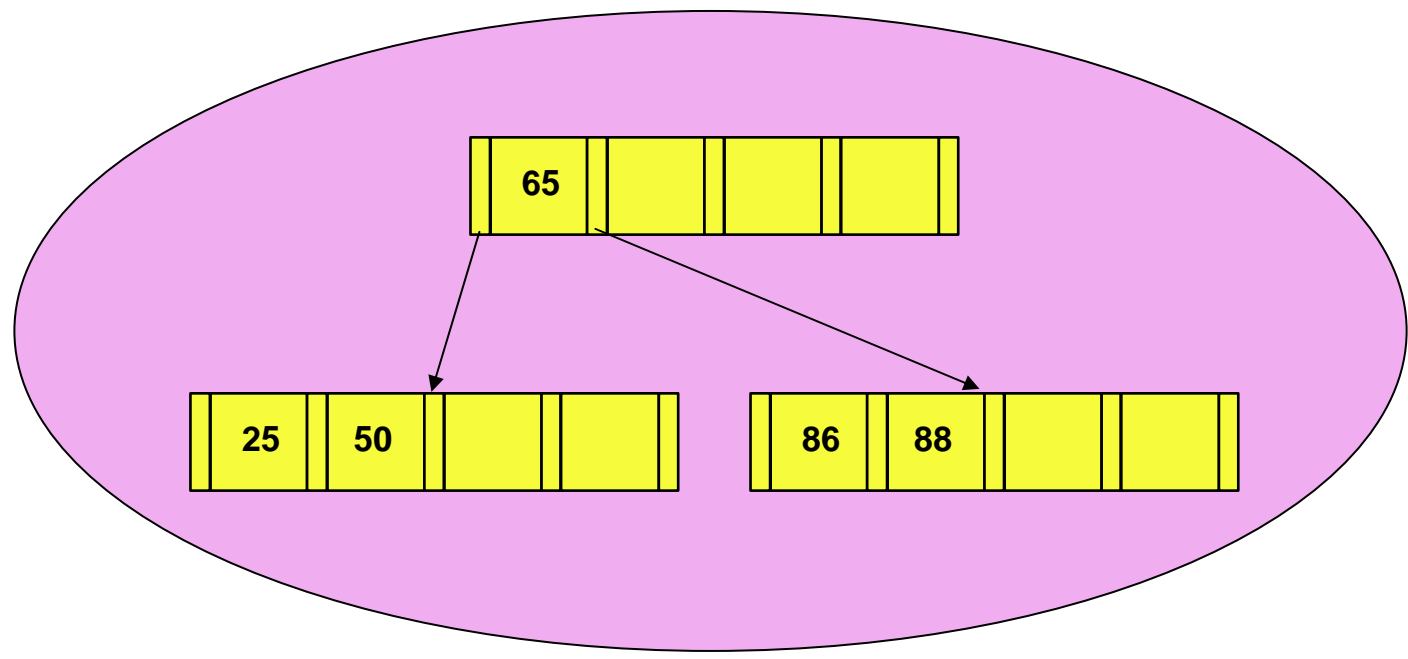
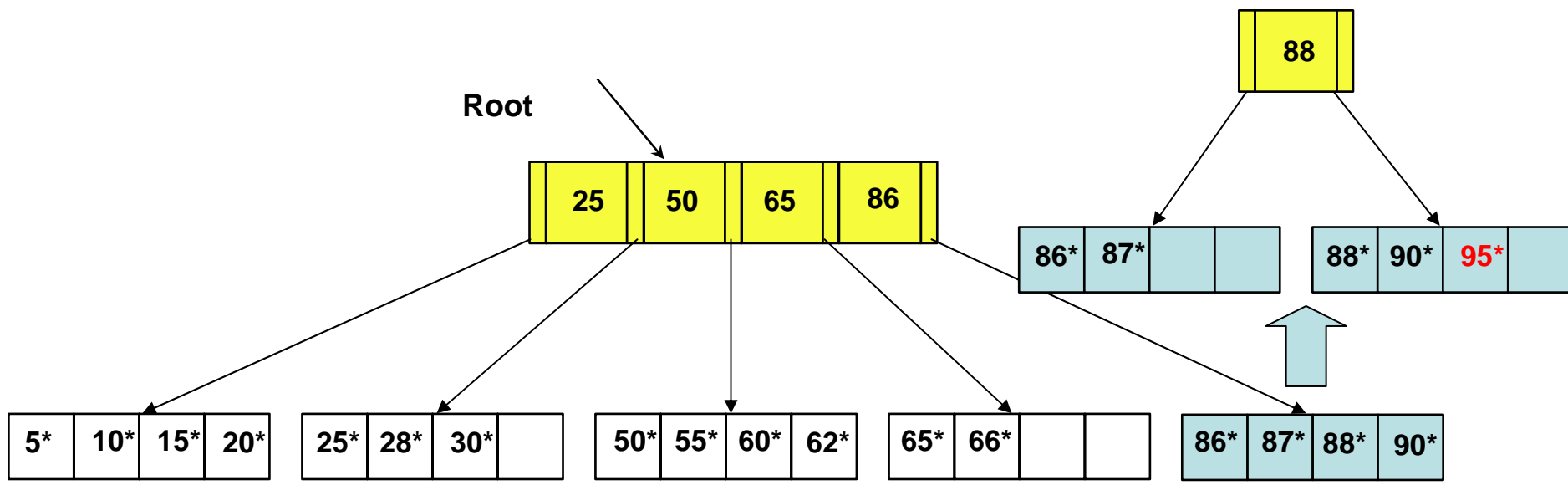


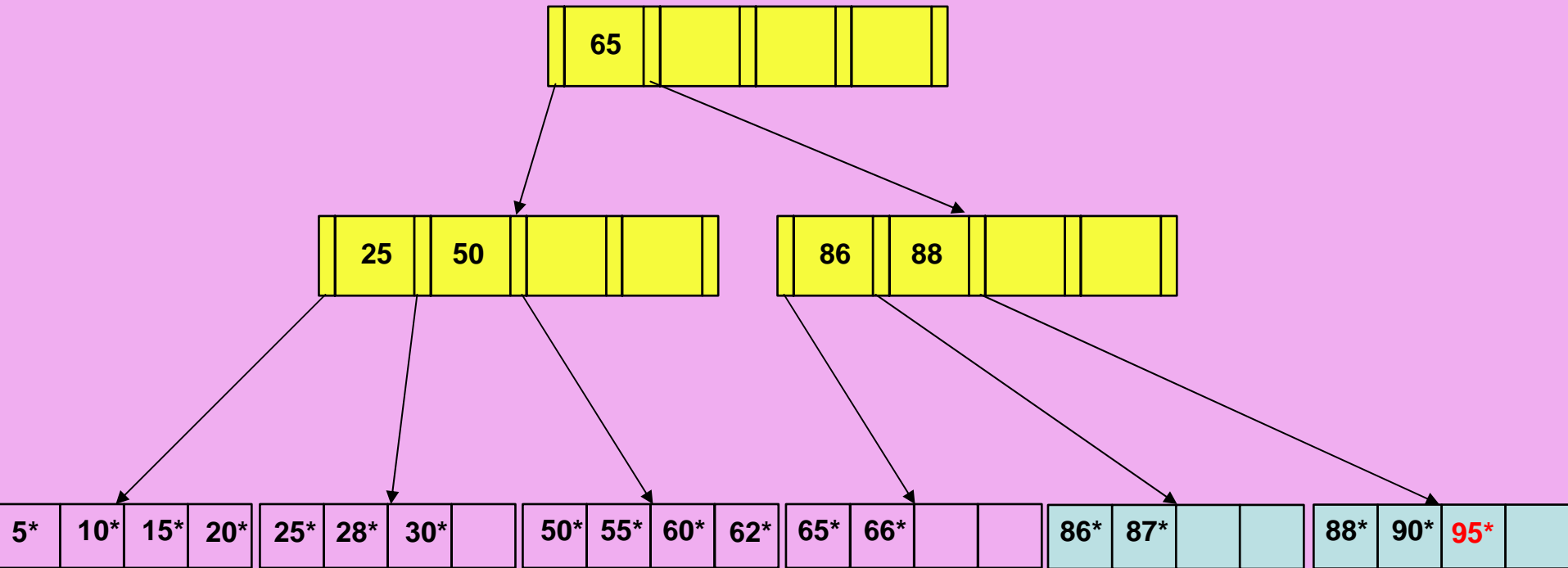




INSERT 95*







student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the names of professors who work in departments that have fewer than 50 Ph.D. students.

Select p.pname

From prof p, dept d

Where p.dname = d.dname AND d.numphds < 50;

pname

Edison, L.

Brian, C.

Jones, J.

Smith, S.

Walter, A.

Bucket, T.

(6 rows)

student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the name(s) of student(s) with the lowest gpa.

**Select s1.sname
From student s1
Where s1.gpa <= ALL (Select s2.gpa From student s2);**

sname

Jetplane, Leaving O.
(1 row)

student(sid, sname, sex, age, year, gpa)
 dept (dname, numphds)
 prof (dname, pname)
 course (cno, dname, cname)
 major (dname, sid)
 sections (dname, cno, sectno, pname)
 enroll (sid, grade, dname, cno, sectno)

For each Computer Sciences class, print the *cno*, *sectno*, and the *average gpa* of the students enrolled in the class.

Select e.cno, e.sectno, avg(s.gpa)

From student s, enroll e

Where s.sid=e.sid AND e.dname LIKE 'Computer Sciences'

Group by e.cno, e.sectno;

cno	sectno	avg
302	1	3.0000000000000000
302	2	3.0750000000000000
467	1	2.9800000000000000
701	1	3.2833333333333333
726	1	2.6411764705882353

(5 rows)

student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the course names, course numbers, and section numbers of all classes with less than six students enrolled in them.

Select e.cno, e.sectno, c.cname
From course c, enroll e
Where c.cno=e.cno AND c.dname=e.dname
Group by c.cname, e.cno, e.sectno
Having count(e.sid) < 6;

cno	sectno	cname
561	1	Advanced Garbage Collection

(1 row)

student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the name(s) and sid(s) of the student(s) enrolled in the most classes.

```
Select s.sname, s.sid  
From student s  
Where s.sid IN (Select e.sid  
                From enroll e  
                Group by e.sid  
                Having count(*) >= ALL(Select count(*)  
                                       From enroll e1  
                                       Group by e1.sid));
```

sname		sid
Hamilton, S.		29

(1 row)

student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the names of departments that have one or more majors who are under 18 years old.

Select m.dname

From major m, student s

Where m.sid = s.sid AND s.age < 18;

dname

Industrial Engineering

Mathematics

(2 rows)

student(sid, sname, sex, age, year, gpa)
 dept (dname, numphds)
 prof (dname, pname)
 course (cno, dname, cname)
 major (dname, sid)
 sections (dname, cno, sectno, pname)
 enroll (sid, grade, dname, cno, sectno)

Print the names and majors of students who are taking one of the College Geometry courses.

Select s.sname, m.dname

From student s, major m, course c, enroll e

**Where e.sid=s.sid AND s.sid=m.sid AND e.cno=c.cno AND e.dname=c.dname
AND c.cname LIKE 'College Geome%';**

sname	dname
Ford, Gerald	Chemical Engineering
Austin, G.	Chemical Engineering
Mathews, John W.	Chemical Engineering
Dunbar, D.	Civil Engineering
Rosemeyer, S.	Civil Engineering
Atny, Mary H.	Civil Engineering
Glitch, R.	Civil Engineering
Ziebart, F.	Civil Engineering
Sulfate, Barry M.	Computer Sciences
Cheong, R.	Computer Sciences
Thorton, James Q.	Computer Sciences
Gooch	Computer Sciences
Smith, L.	Computer Sciences
Zappa, F.	Mathematics
Ghandi, I.	Mathematics
Uoiea, Z.	Mathematics
Sulfate, Barry M.	Sanitary Engineering

(17 rows)

student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the names of students who are taking both a Computer Sciences course and a Mathematics course.

Select s.sname

From student s, enroll e, enroll e1

**Where s.sid=e.sid AND e.sid=e1.sid AND e.dname='Computer Sciences'
AND e1.dname='Mathematics';**

sname

Zappa, F.

(1 row)

student(sid, sname, sex, age, year, gpa)
dept (dname, numphds)
prof (dname, pname)
course (cno, dname, cname)
major (dname, sid)
sections (dname, cno, sectno, pname)
enroll (sid, grade, dname, cno, sectno)

Print the age difference between the oldest and youngest
Computer Sciences major(s).

**Select max(s.age)-min(s.age) AS age_difference
From student s, major m
Where s.sid=m.sid AND m.dname='Computer Science';**

age_difference

38

(1 row)

student(sid, sname, sex, age, year, gpa)
 dept (dname, numphds)
 prof (dname, pname)
 course (cno, dname, cname)
 major (dname, sid)
 sections (dname, cno, sectno, pname)
 enroll (sid, grade, dname, cno, sectno)

For each department that has one or more majors with a GPA under 1.0, print the name of the department and the average GPA of its majors.

Select m1.dname, avg(s1.gpa)
From student s1, major m1
Where s1.sid=m1.sid AND m1.dname IN (Select m.dname
From major m, student s
Where m.sid=s.sid AND s.gpa<1.0)

Group by m1.dname;

dname	avg
Civil Engineering	2.9142857142857143
Computer Sciences	3.0041666666666667
Industrial Engineering	2.7700000000000000

(3 rows)