HW2

1.

Create table students(

sid varchar(11),

name varchar(50),

age int,

gpa float,

            primary key (sid))

Create table courses(

cid varchar(11),

deptid varchar(15),

name   varchar(50),

primary key (cid))

Create table professors(

ssn int,

name varchar(50),

address varchar(50),

phone varchar(15),

deptid varchar(15),

primary key (ssn))

Create table enrollment(

sid varchar(11),

cid varchar(11),

section int,

grade varchar(2),

primary key (sid, cid),

foreign key (sid) references students,

foreign key (cid) references courses,

foreign key (cid,section) references teaches)

Create table teaches(

cid varchar(10),

section int,

ssn int,

primary key (cid, section),

foreign key (cid) references courses,

foreign key (ssn) references professors)

2.

select name

from professors

where deptid = ‘cs’;

3.

select s.sid

from students s,

enrollment e,

courses c

where s.sid = e.sid

and e.cid = c.cid

and c.deptid = ‘cs’;

4.

select p.ssn,

p.name

from professors p,

teaches t,

courses c

where p.ssn = t.ssn

and t.cid = c.cid

and p.ssn not in(

select p.ssn,

from professors p,

teaches t,

courses c

where p.ssn = t.ssn

and t.cid = c.cid

and c.deptid = ‘cs’);

5.

select deptid,

count(cid)

from courses

group by deptid;

6.

select deptid,

count(cid)

from courses

group by deptid

having count(cid) > 10;

7.

select distinct s.name

from students s,

enrollment e,

teaches t,

professors p

where s.sid = e.sid

and e.cid = t.cid

and p.ssn = t.ssn

and p.name like ‘M%’;

8.

select c.deptid,

count(sid) < 30 as 'Small',  
 count(sid) >= 30 and count(sid) < 80 as 'Medium',  
 count(sid) >= 80 as 'Large'

from enrollment e,

courses c,

where e.cid = c.cid,

group by e.section,

c.cid;

9.

select p.name

from professors p,

courses c,

teaches t,

where p.deptid = c.deptid,

group by p.name

having count(p.name) > 20

and ‘Large’ > ‘Small’ + ‘Medium’ in (

select c.deptid,

count(sid) < 30 as 'Small',  
count(sid) >= 30 and count(sid) < 80 as 'Medium',  
count(sid) >= 80 as 'Large'

from enrollment e,

courses c,

where e.cid = c.cid,

group by e.section,

c.cid);

10.

select section,

((count(grade) / (select count(\*) \* 100)

from enrollment

where e.grade = ‘D’

or e.grade = ‘F’) as Failed Percentage

from enrollment e,

group by section;

11.

select distinct p.name

from professors p,

teaches t,

enrollment e

where p.ssn = t.ssn,

and t.cid = e.cid,

and Failed Percentage = (select max(Failed Percentage)

from enrollment);

12.

select ((count(grade) / (select count(\*))

from enrollment

where e.grade = ‘D’

or e.grade = ‘F’)

from enrollment e;

13.

select section

from enrollment e,

where grade in('F','D')  
group by section

having count(grade) > (select avg(grade)

from enrollment);

14.

select c.deptid,

e.section,

e.grade  
   if(e.grade = 'A', ‘%A’,  
   if(e.grade = 'B', ‘%B’,  
   if(e.grade = 'C', ‘%C’,  
   if(e.grade = 'D', ‘%D’,  
   if(e.grade = 'F', ‘%F’, 0)))))  
from enrollment e,

courses c

where e.cid = c.cid  
    group by c.deptid;