

# Quiz 2

Is not that difficult !!!

# Question 1

A CS (resp. EE) class is a class whose code contains the string 'CS' (resp. 'EE'). List all the CS classes (course title and course code) that were offered in Spring 2004.

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A CS (resp. EE) class is a class whose code contains the string 'CS' (resp. 'EE'). List all the CS classes (course title and course code) that were offered in Spring 2004.

Where is the information? Transcripts:

t.crscod like '%CS%' and t.semester='Spring2004'

# Question 1

List all the CS classes (course title and course code) that were offered in Spring 2004.

```
select t.crscod  
from transcripts t  
where t.crscod like '%CS%'  
and t.semester='Spring2004'
```

crscod of CS classes  
in Spring 2004

BUT WE NEED title?

# Question 1

List all the CS classes (course title and course code) that were offered in Spring 2004.

Title is in Courses, so we join the result of the previous query with courses

```
select t.crscod, c.crsname
from transcripts t, courses c
where t.crscod like '%CS%'
and t.crscod=c.crscod
and semester='Spring2004'
```

# Question 2

CS and EE double major is a student who takes both CS and EE classes in the same semester. List the names and addresses of all CS and EE double majors who are senior.

Sub-Queries:

Who takes CS and EE classes in the same semester?

Among those who are senior?

# Question 2

Who takes CS and EE classes in the same semester?

Who takes CS?

Who takes EE?

Intersection => Not working since one might take CS in Fall 2006 and EE in Spring 2007!

=> Need refinement

## Question 2

Who takes CS and EE classes in the same semester?

Who in semester X takes CS?

Who in semester X takes EE?

Intersection => it works

since the semester is the same

# Question 2

Who takes CS and EE classes in the same semester?

Who in semester X takes CS?

```
select studid, semester from transcripts  
where crscode like '%CS%'
```

Who in semester X takes EE?

```
select studid, semester from transcripts  
where crscode like '%EE%'
```

=> And the answer for the subquery is:

# Question 2

Who takes CS and EE classes in the same semester?

```
select studid, semester from transcripts
```

```
where crscode like '%CS%'
```

```
intersect
```

```
select studid, semester from transcripts
```

```
where crscode like '%EE%'
```

# The id of all double majors

## Question 2

```
select studid
from
  (select studid, semester from transcripts
   where crscode like '%CS%'
  intersect
   select studid, semester from transcripts
   where crscode like '%EE%'
  )
```

What is the above?

# Name and address ?

select name, address from students

where id in (

select studid

from

(select studid, semester from transcripts

where crscode like '%CS%'

intersect

select studid, semester from transcripts

where crscode like '%EE%'

))

# Question 3

The student credit hours of one class is defined as the product of 3 and the total number of students attending this class (or  $3 * (\text{number of students})$ ).

List all the classes with the highest student credit hours for Fall 2004.

Did we talk about it already?

List all the classes with the highest student credit hours for Fall 2004

```
select crscode, semester,
       3*count(*)
from transcripts t where semester='Fall2004'
group by crscode, semester
having 3*count(*) >= ALL
(select 3*count(*)
 from transcripts t1 where semester='Fall2004'
 group by crscode, semester );
```

# Question 4

The total student credit hours of CS (resp. EE) in a semester is the sum of all student credit hours of CS (resp. EE) classes in that semester. List the total student credit hours of CS and EE for Fall 2005.

Transcripts: CS classes in Fall 2005 \* 3 => CS credit hours

# Question 4

Transcripts: CS classes in Fall 2005 \* 3 => CS  
credit hours

```
select 3*count(*) from transcripts where  
crscode like '%CS%' and semester='Fall2005'
```

(we get only a number)

Want to add 'CS' as department!

# Question 4

Transcripts: CS classes in Fall 2005 \* 3 => CS credit hours

```
select 'CS' as Dept, 3*count(*) as StCrHours  
from transcripts  
where crscode like '%CS%' and  
semester='Fall2005'
```

Adding EE is simple: UNION

# Question 4

```
select 'CS' as Dept, 3*count(*) as StCrHours
```

```
from transcripts
```

```
where crscode like '%CS%' and semester='Fall2005'
```

UNION

```
select 'EE' as Dept, 3*count(*) as StCrHours
```

```
from transcripts
```

```
where crscode like '%EE%' and semester='Fall2005'
```

# Question 5

An above the average student is one who has more As than Cs and never has an D or an F.  
List the names and addresses of all above the average students.

Never has D, F: no grade is D or F

# Question 5

Never has D, F: no grade is D or F

```
select t.studid from transcripts t  
where t.studid  
not in
```

```
(select t1.studid from transcripts t1  
where t1.grade='D' or t1.grade='F')
```

People with some D or F



# Question 5

An above the average student is one who has more As than Cs and never has an D or an F. List the names and addresses of all above the average students.

More A than C:

```
count(*) grade='A' > count(*) grade='C'
```

# Question 5

More A than C:

`count(*) grade='A' > count(*) grade='C'`

`select t.studid from transcripts t where`

`(select count(*) from transcripts t1  
where t1.studid=t.studid and t1.grade='A')`

`> (select count(*) from transcripts t2  
where t2.studid=t.studid and t2.grade='C')`

# Question 5

select t.studid from transcripts t where  
t.studid not in

```
(select t1.studid from transcripts t1  
where t1.grade='D' or t1.grade='F')
```

AND

```
(select count(*) from transcripts t1  
where t1.studid=t.studid and t1.grade='A')
```

```
> (select count(*) from transcripts t2  
where t2.studid=t.studid and t2.grade='C')
```

It was not difficult, isn't?

Questions?