

# Review

## —subqueries

select —

from —

where →

city in ( )

city not in ( )

---

exists ( )

not exists ( )

---

asset > all ( )

asset < some ( )

Aggregation functions : count, avg, sum, min, max

## Grouping

```
select count(*)  
from branch
```

branch

| bname | city  | asset |
|-------|-------|-------|
| _____ | _____ | Edu   |
| _____ | _____ | Colg. |
| _____ | _____ | _____ |

```
select City, count(*)  
from branch  
group by city
```

want cities with more  
than 3 branches

```
select city, count(*)  
from branch
```

Q. How to limit the result to

branches with assets  $\rightarrow$  100000? group by city

```
having count(*) > 3
```

Where can we put aggregation functions?

- select clause
- having clause

Where can we use subqueries?

- where clause
- having clause
- from clause

taken(sid, cid, year, sem, grade)

Q. Find the average number of courses students take each semester.

```
select avg(cnt)
from (select count(*) as cnt
      from taken
      group by sid, year, sem) t
```

Common Table Expressions (CTE)

```
with crsCnt(sid, year, sem, cnt) as (
  select sid, year, sem, count(*)
  from taken
  group by sid, year, sem)
select avg(cnt)
from crsCnt;
```