

Recap of Feb 11: SQL

- “*” is an abbreviation for all attributes in the *from* list
- implicit tuple variables; table names as tuple variables
- Set operators: *union, intersect, minus, contains, exists, in, not*
- *Insert* command and semantics
- *Delete* command and semantics
- *Update* command and semantics
- Aggregate functions: *avg, min, max, sum, count*
- *group by* clause
- *having* clause

SQL: Multiple Group Bys

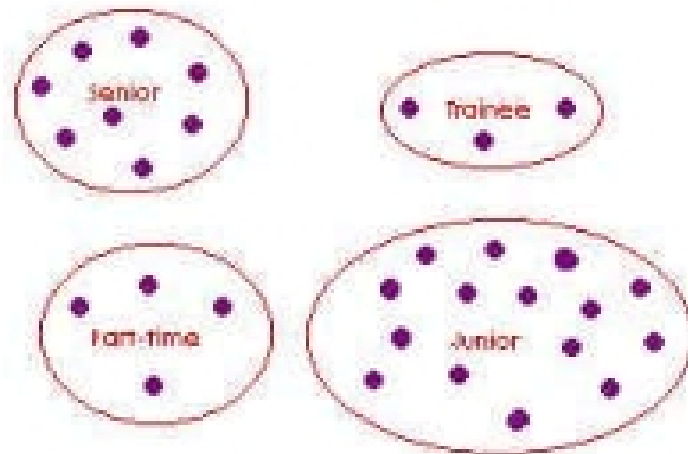
Example: using relation emp(ss#, ename, dept, cat, sal)

Count the employees and average monthly salary for each employee category in each department

```
select      dept, cat, count(*), avg(sal)/12
from        emp
group by    dept, cat
```

SQL: Multiple Group Bys

Select ... from emp
group by cat



Select ... from emp
group by dept

