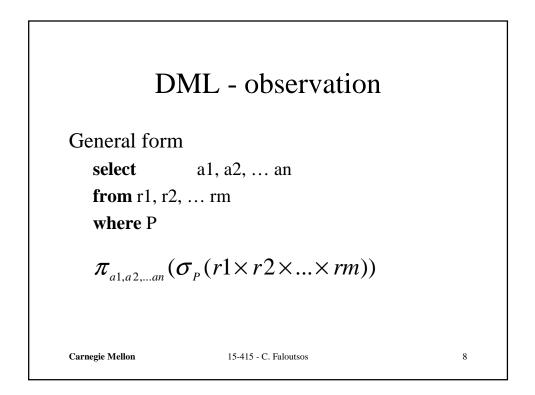
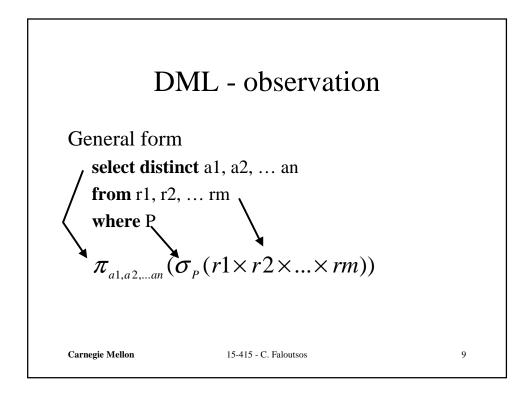
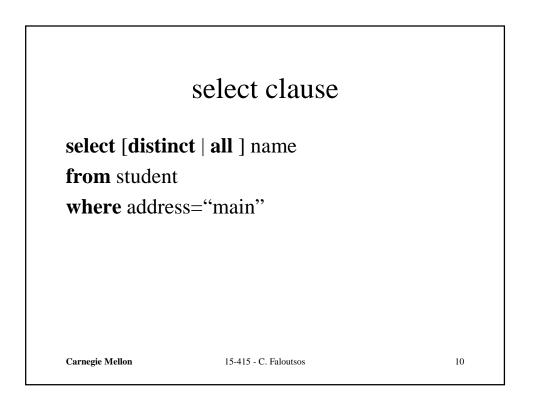


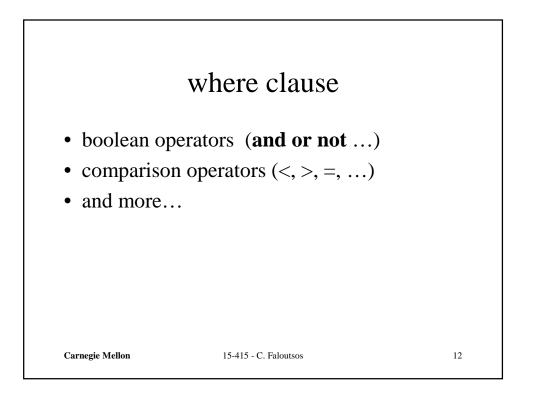
| DML - observation | | | | |
|---|---|--|--|--|
| General form select a1, a2, an from r1, r2, rm where P | | | | |
| equivalent rel. algebra query? | | | | |
| Carnegie Mellon 15-415 - C. Faloutsos | 7 | | | |

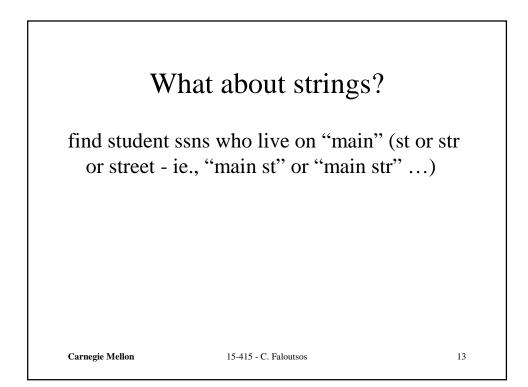


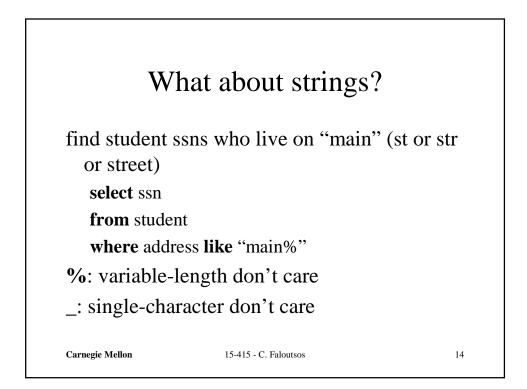




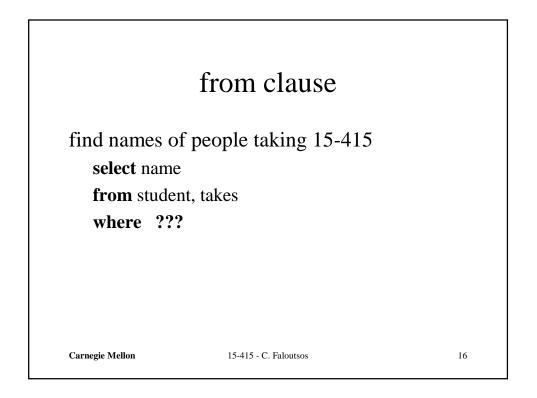
| | where clause | |
|----------------------------------|------------------------------|----|
| find ssn(s) of select ssn | all "smith"s on "main" | , |
| from student | | |
| where address name = "sr | s="main" and nith" | |
| nume – si | | |
| | | |
| Carnegie Mellon | 15-415 - C. Faloutsos | 11 |



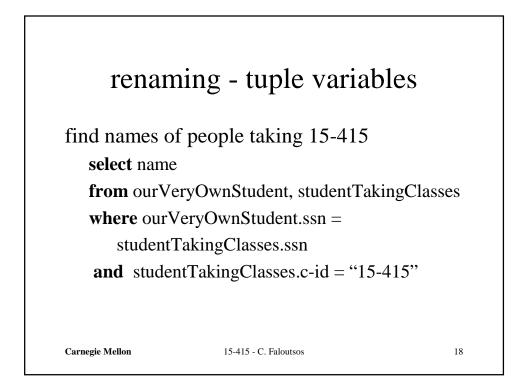




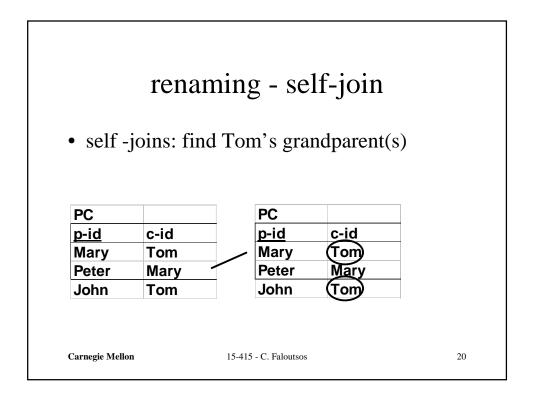
| | | from | clau | ise | | |
|------------|--------|---------------------|--------------|--------|--------|-------|
| find a s | | | - 1-: | 15 11 | 5 | |
| find nat | mes of | people t | aking | 15-41 | 3 | |
| STUDENT | | | | CLASS | | |
| <u>Ssn</u> | Name | Addres | S | c-id | c-name | units |
| 123 | smith | main st | r | 15-413 | s.e. | |
| | jones | forbes a | ave | 15-412 | | |
| 234 | | | | | | |
| 234 | | TAKES | | | | |
| 234 | | TAKES <u>SSN</u> | <u>c-id</u> | grade | | |
| 234 | | <u>SSN</u> | | | | |

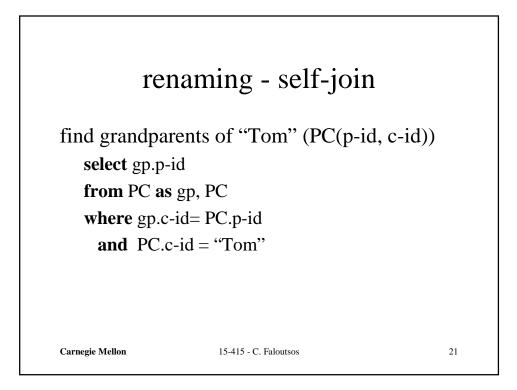


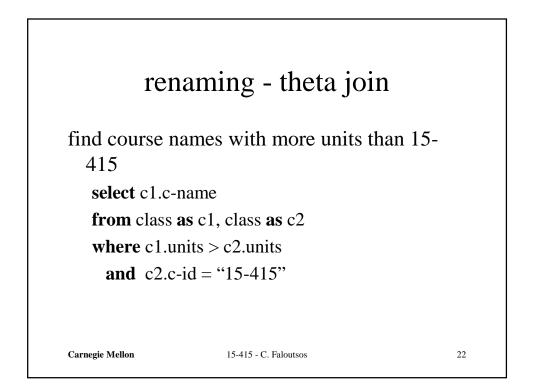
| | from clause | |
|---|-----------------------|----|
| select name from studer where stude | | |
| Carnegie Mellon | 15-415 - C. Faloutsos | 17 |

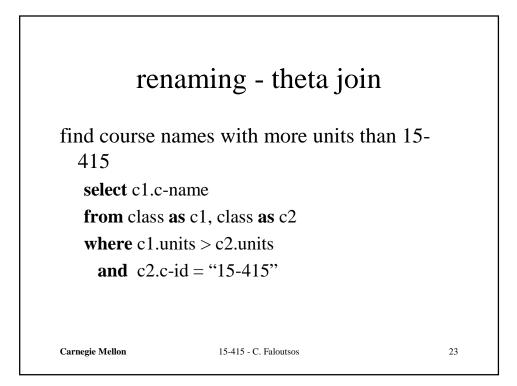


| renam | ing - tuple variabl | es |
|--|---|----|
| select name from ourVer | people taking 15-415 yOwnStudent as S, tingClasses as T | |
| where S.ssn | =T.ssn | |
| and T.c-10 | l = "15-415" | |
| Carnegie Mellon | 15-415 - C. Faloutsos | 19 |



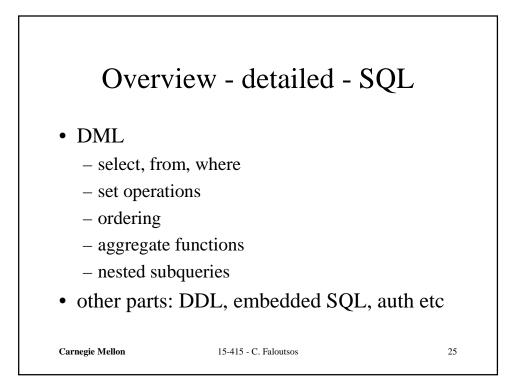


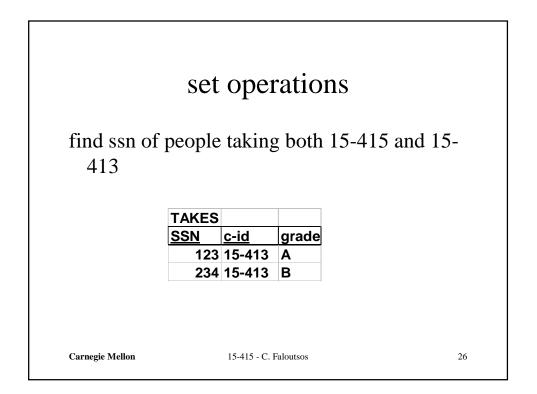


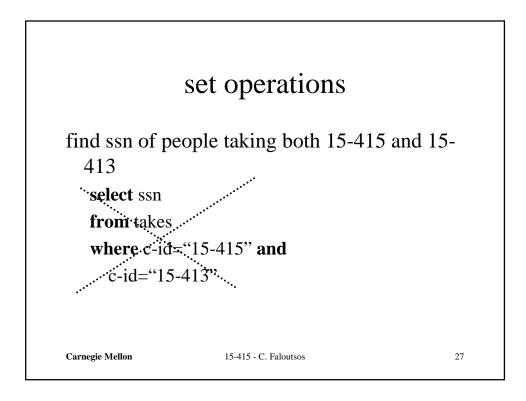


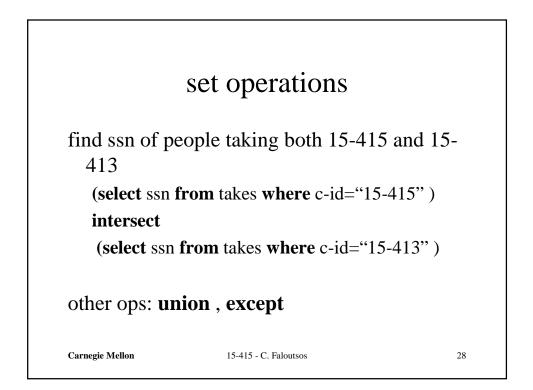
find course names with more units than 15-415
select c1.name
from class as c1, class as c2
where c1.units > c2.units
and c2.c-id = "15-415"

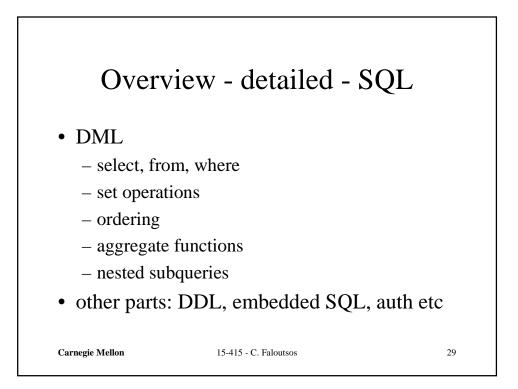
$$\begin{cases} t \mid \exists c1 \in CLASS \quad \exists c2 \in CLASS \quad (\\ c1[c - id] = 15 - 415 \land \\ c2[units] > c1[units] \land \\ t[c - name] = c2[c - name]) \end{cases}$$

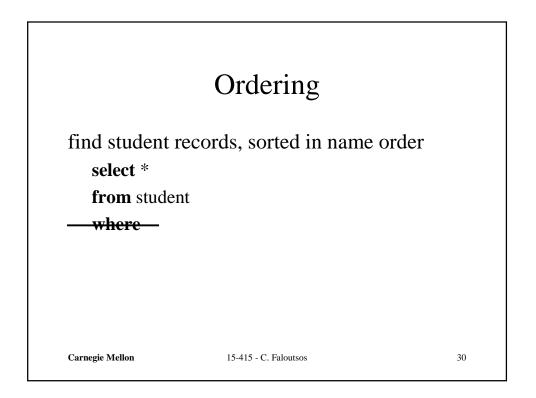












| | Ordering | |
|--|---|-----|
| find student re- select * from student order by nan | cords, sorted in name or ne asc | der |
| asc is the def | fault | |
| Carnegie Mellon | 15-415 - C. Faloutsos | 31 |

