```
SELECT P.Names, P.Salary

FROM Payroll P, (
SELECT UserID

FROM Payroll

EXCEPT

SELECT UserID

FROM Regist) E

WHERE P.UserID

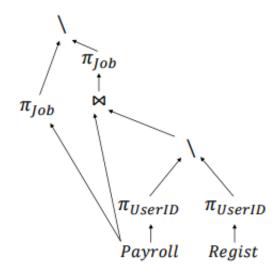
= E.UserID
```

Universal Quantifiers

- Watch out for universal quantifiers
 - Require more complex answer
- Double negation pattern often works
 - o aka the "not not rule"

 $\forall = \neg \exists \neg$

RA to SQL:



```
SELECT Job
                                         SELECT Job
  FROM Payroll, (
                                           FROM Payroll, (
    SELECT UserID
                                             SELECT UserID
      FROM Payroll
                                               FROM Payroll
    EXCEPT
                                             EXCEPT
    SELECT UserID
                                             SELECT UserID
      FROM Regist)
                                               FROM Regist)
                               \pi_{Job}
EXCEPT
SELECT Job
                                                   SELECT UserID
  FROM Payroll
                                                     FROM Payroll
                                 M
                      \pi_{Job}
                                                   EXCEPT
    SELECT Job
                                                   SELECT UserID
      FROM Payroll
                                                     FROM Regist
            SELECT UserID
               FROM Payroll
                                                 \pi_{UserID}
                                     \pi_{\mathit{UserID}}
            SELECT UserID
               FROM Regist
                                     Payroll
                                                  Regist
```

```
WITH Part1 AS (
SELECT P.UserID, P.Job,
COUNT(R.Car) AS CC
FROM Payroll P
LEFT OUTER JOIN Regist R
ON P.UserID = R.UserID
GROUP BY P.Job, P.UserID
)
SELECT COUNT(*) AS PartnerCount
FROM
(SELECT CC AS CC1 FROM Part1
WHERE Job='TA') A,
(SELECT CC AS CC2 FROM Part1
WHERE Job='Prof') B
WHERE A.CC1+B.CC2 >= 1
```