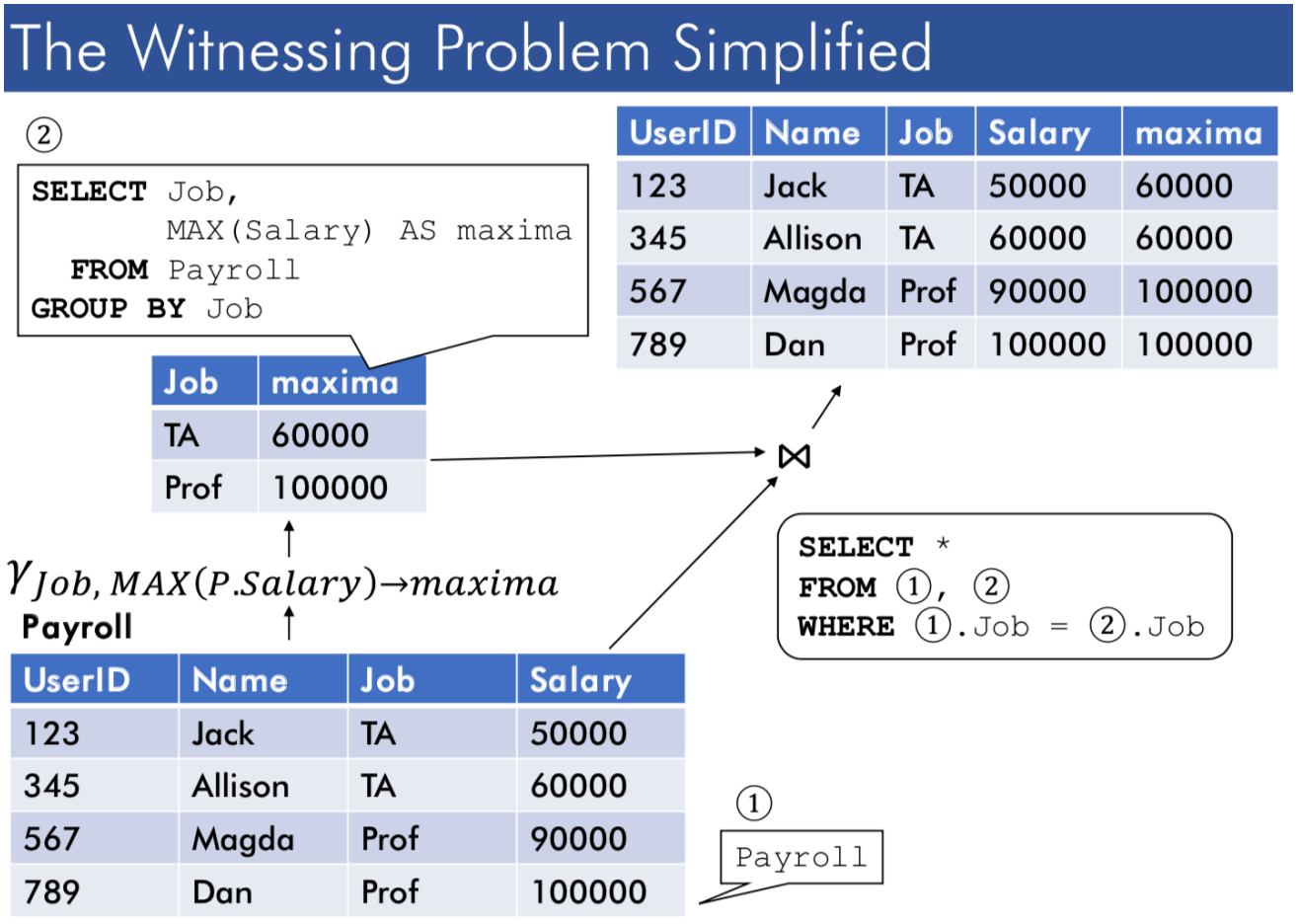
Query&subquery

natural joins:

Build larger query from subqueries

```
SELECT Names, maxima FROM (SELECT *
FROM Payroll P,
(SELECT Job, MAX(Salary) AS maxima FROM Payroll
GROUP BY Job) M
WHERE P.Job = M.Job) WHERE Salary = maxima
```



Join all the information together.

try so solve problem in smal problem:

Option 2: Write a fancy big query

```
SELECT P1.Name, MAX(P2.Salary)
FROM Payroll AS P1, Payroll AS P2
WHERE P1.Job = P2.Job
GROUP BY P2.Job, P1.Salary, P1.Name HAVING P1.Salary = MAX(P2.Salary)
```

Option #3: Save an intermediate result

```
 WITH MaxPay AS
(SELECT Job AS Job,
MAX(Salary) AS maxima FROM Payroll
GROUP BY Job)

SELECT P.Name, P.Salary
FROM Payroll AS P, MaxPay AS MP
WHERE P.Job = MP.Job AND P.Salary = MP.maxima
```

use the join / intersect / different to solcve the problems:

```
'''simple way '''
WITH MaxPay AS
(SELECT P1.Job AS Job,
MAX(P1.Salary) AS Salary FROM Payroll AS P1
GROUP BY P1.Job) SELECT P.Names, P.Salary
FROM Payroll AS P, MaxPay AS MP WHERE P.Job = MP.Job AND
       P.Salary = MP.Salary
''' and '''
SELECT P.Names, P.Salary
FROM Payroll AS P, (SELECT P1.Job AS Job,
MAX(P1.Salary) AS Salary FROM Payroll AS P1
GROUP BY P1.Job) AS MP WHERE P.Job = MP.Job AND
       P.Salary = MP.Salary;
```

Correlated Subqueries in SELECT

```
SELECT P.Names, (SELECT AVG(P1.Salary) FROM Payroll AS P1
WHERE P.Job = P1.Job) AS AvgSal FROM Payroll AS P;
```

Not equals problems:

```sql
SELECT P.Names,
(SELECT COUNT(R.Car)
 FROM Regist AS R
 WHERE P.UserID = R.UserID)
 FROM Payroll AS P ;

SELECT P.Names, COUNT(R.Car)
FROM Payroll AS P , Regist AS R
WHERE P.UserID = R.UserID
GROUP BY P .Names;
```