

Relational Algebra (R.A.)

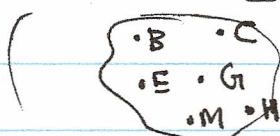
(Sets of data)

R.A. Operations

output is a set of rows (table)

Set operations
Two tables

Union: $S_1 \cup S_2$

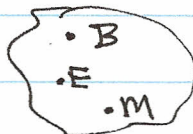


$= S_2 \cup S_1$

Intersection: $S_1 \cap S_2 = S_2 \cap S_1$



Difference: $S_1 - S_2 \neq S_2 - S_1$



one table

Selection: $\text{select (salary > 30000) (employee)}$

one table

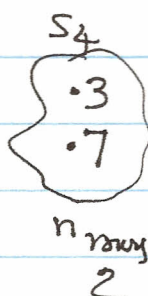
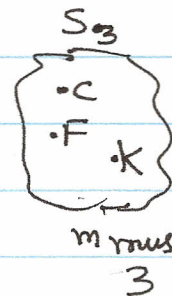
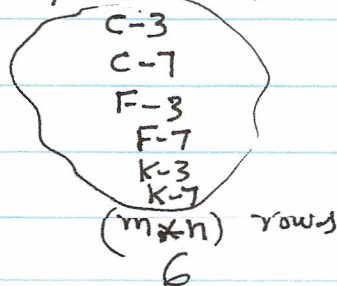
Projection: $\text{project Fname, Lname (employee)}$

6 rows with salary values $\Leftarrow \text{project salary (employee)}$

The projected result table should not have duplicate rows.

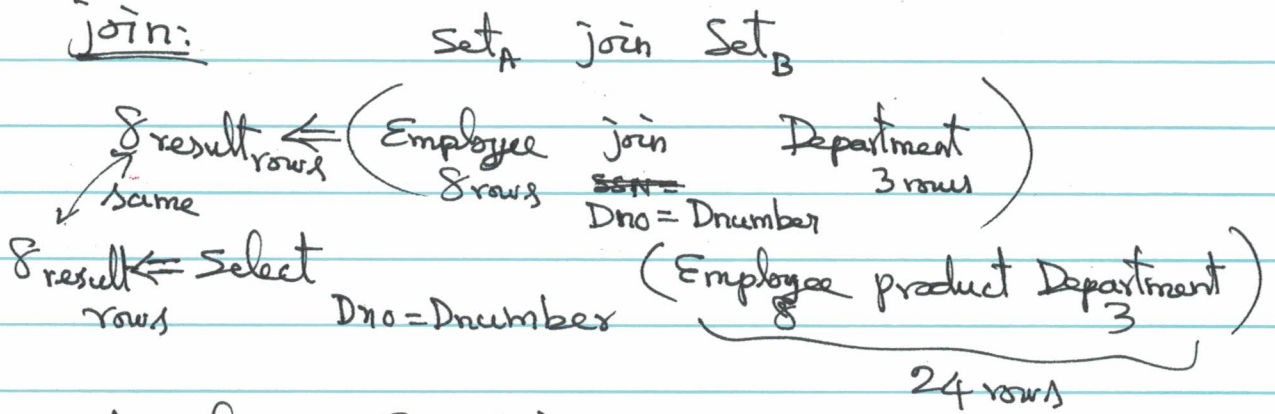
Two tables Product

$S_3 \text{ product } S_4$



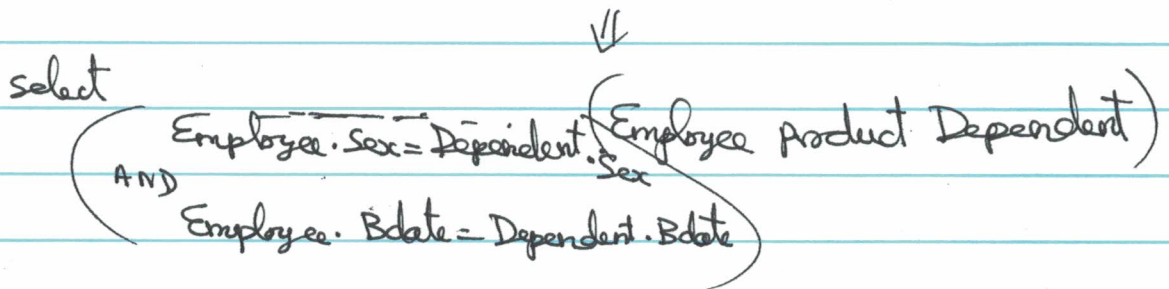
X

Join:



Natural join (njoin)

Employee njoin Dependent



Sample Databases

Company

Premiere

EmployeeTraining

Henry

WinRDBI

✓ *.rdb — relational database file (text file)

✓ *.alg — algebra query file (text)

[*.drc — relational domain calculus query file
*.trc — tuple calculus " "
*.sql — sql " "