25-03-2020

Computer Science II nd Year

Subject - DBMS

6) Cartesian Product :-

⇒ The Cartesian Product is used to combine each row in one table with each row in the other table. It is also know as a Cross Product.

⇒ It is denoted by 'X'

Notation :- E X D

Example :- EMPLOYEE

EMP Id	EMP_NAME	EMP_DEPT
1	Smith	A
2	Harry	B
3	John	C

DEPARTMENT

Dept_NO	Dept_Name
A	Marketing
B	Sales
C	legal

Input :- EMPLOYEE X DEPARTMENT

output :-

EMP-ID	EMP_NAME	EMP-DEPT	DEPT-NO	DEPT-NAME
1	Smith	A	A	Marketing
1	Smith	A	B	Sales
1	Smith	A	C	Legal
2	Harry	C	A	Marketing
2	Harry	C	B	Sales
2	Harry	C	C	Legal

3	John	B	A	Marketing
3	John	B	B	Sales
3	John	B	C	legal

7) Rename operation :-

The rename operation is used to rename the output relation. It is denoted by rho (ρ)

Example :- We can use the rename operation to rename STUDENT relation to STUDENT 1

$$\rho(\text{STUDENT 1}, \text{STUDENT})$$

Join operations :-

A Join operations combines related tuples from different relation, if and only if a given join condition is satisfied. It is denoted by ⋈.

Example :-

EMPLOYEE

EMP_CODE	EMP_NAME
101	Stephan
102	Jack
103	Harry

Salary

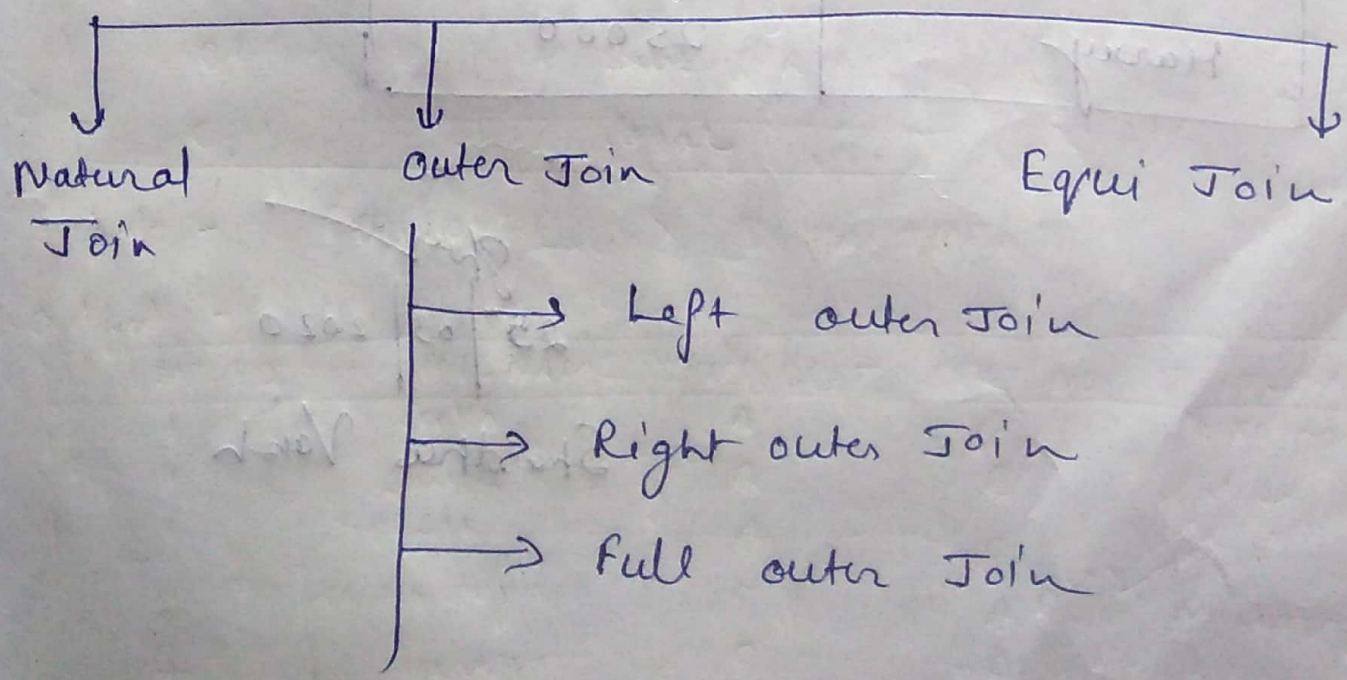
EMP-CODE	SALARY
101	50,000
102	30,000
103	25,000

operation :- (EMPLOYEE ⋈ SALARY)

Result :-

EMP-CODE	EMP-NAME	SALARY
101	Stephan	50,000
102	Jack	30,000
103	Harry	25,000

Type of Join operation



1) Natural Join :-

⇒ A Natural Join is the set of tuples of all combination in R and S that are equal on their common attribute names.

⇒ It is denoted by ⋈

Example: Let's use the above EMPLOYEE table and ~~Salary~~ SALARY Table :-

Input :-

Π EMP-NAME, SALARY (EMPLOYEE ⋈ SALARY)

Output :-

EMP-NAME	SALARY
Stephan	50,000
Jack	30,000
Harry	25000

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