Join Operations:

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A join operation combines related tuples from different relations, if and only if a given join condition is satisfied. It is denoted by '⋈'

EMPLOYEE (EMP_CODE, EMP_NAME)

EMP_CODE	EMP_NAME
101	Rajdeep
102	Subhalakshmi
103	Srija
104	Priya
105	Adya

SALARY (EMP_CODE, SALARY)

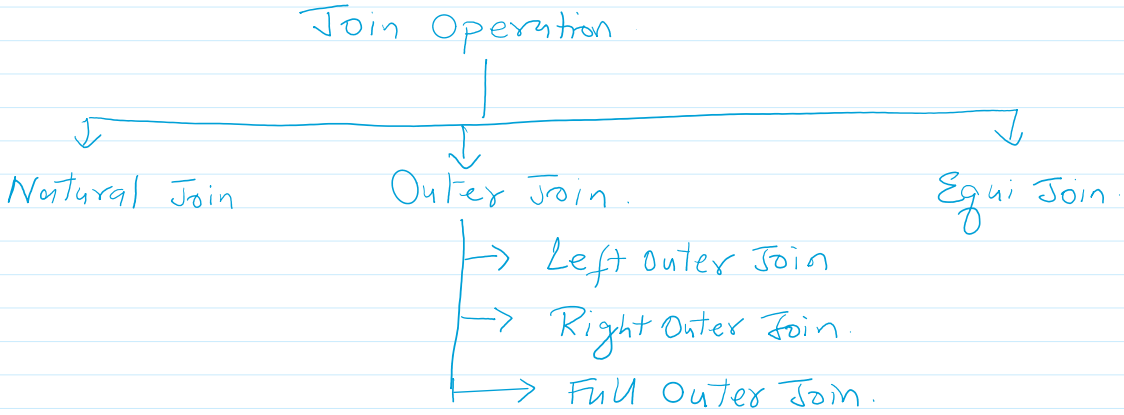
EMP_CODE	SALARY
101	50000
102	60000
103	40000

(EMPLOYEE ⋈ SALARY)

Joining condition

→ [EMPLOYEE. EMP_CODE = SALARY. EMP_CODE]

EMP_CODE	EMP_NAME	SALARY
101	Rajdeep	50000
102	Subhalakshmi	60000
103	Srija	40000



1. Natural Join:

- A natural join is the set of tuples of all combinations in R and S that are equal on their common attribute names.

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- It is denoted by '⋈'

Example:

Π EMP_NAME, SALARY (EMPLOYEE ⋈ SALARY)

EMP_NAME	SALARY
Rajdeep	50000
Subhalakshmi	60000
Srija	40000

Outer Join: The outer join operation is an extension of the join operation. It is used to deal with missing information.

EMPLOYEE

EMP_NAME	STREET	CITY
Ram	Civil lines	Mumbai
Shyam	Park street	Kolkata
Ravi	M.G. Street	Delhi
Hari	Nehru Nagar	Hyderabad

FACT_WORKERS

EMP_NAME	BRANCH	SALARY
Ram	Infosys	10000
Shyam	Wipro	20000
Kuber	HCL	30000
Hari	TCS	50000

(EMPLOYEE ⋈ FACT_WORKERS)

EMP_NAME	STREET	CITY	BRANCH	SALARY
Ram	Civil Lines	Mumbai	Infosys	10000
Shyam	Park street	Kolkata	Wipro	20000
Hari	Nehru Nagar	Hyderabad	TCS	50000

An outer join is basically of three types

(a) Left outer join

(b) Right outer join

(c) Full outer join

(a) Left outer join :-

⇒ Left outer join contains the set of tuples of all combinations in R and S that are equal on their common attributes.

⇒ In the left outer join, tuples in R have no matching tuples in S.

⇒ It is denoted by ⟕.

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⇒ It is denoted by ⟕.

Example: EMPLOYEE ⟕ FACT_WORKERS

EMP_NAME	STREET	CITY	BRANCH	SALARY
Ram	Civil Lines	Mumbai	Infosys	10000
Shyan	Park Street	Kolkata	Wipro	20000
Hari	Nehru Nagar	Hyderabad	TCS	50000
Ravi	M.G. Street	Delhi	NULL	NULL

(b) Right outer join:

⇒ Right outer join contains the set of tuples of all combination in R and S that are equal on their common attribute names.

⇒ In right outer join, tuples in S having no matching tuples in R.

⇒ It is denoted by '⟖'.

Example:-

EMPLOYEE ⟖ FACT_WORKERS.

EMP_NAME	STREET	CITY	BRANCH	SALARY
Ram	Civil Lines	Mumbai	Infosys	10000
Shyan	Park Street	Kolkata	Wipro	20000
Hari	Nehru Nagar	Hyderabad	TCS	50000
Kuber	NULL	NULL	HCL	30000

(c) Full outer join:-

⇒ Full outer join is like a left or right outer join that it contains all rows from both the tables.

⇒ In full outer join, tuples in R that have no matching tuples in S and tuples in S that have no matching tuples in R in their common attribute.

⇒ It is denoted by ⟗

For example:

EMPLOYEE ⟗ FACT_WORKERS.

EMP_NAME	STREET	CITY	BRANCH	SALARY
Ram	Civil Lines	Mumbai	Infosys	10000
Shyan	Park Street	Kolkata	Wipro	20000
Hari	Nehru Nagar	Hyderabad	TCS	50000
Kuber	NULL	NULL	HCL	30000
Ravi	M.G. Street	Delhi	NULL	NULL

3. Equi Join:- It is also known as an inner join. It is the most common join. It is based on matched data as per the equality condition. The equi join uses the comparison operator (=)

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