

## Different Types of Join -

The join operation ( $\bowtie$ ) allows us to join two or more relations to form a single new relation. The tuples from the operand relations that participate in the join operation and contribute to the result are related,

Two Different types of joins are

① Equi join - When two tables are joined together using equality of values in one or more columns, it is called equi join. In this type of join, the comparison operator  $=$  is used. The result of an equi join will always have one or more pairs of attributes that have identical values in every tuple.

② Theta ( $\theta$ ) join - A general join condition of the form  $\langle \text{condition} \rangle$  and  $\langle \text{condition} \rangle$  AND ... AND  $\langle \text{condition} \rangle$  where each condition is of the form  $A_i \theta B_j$ , where  $A_i$  is an attribute of relation  $X$ ,  $B_j$  is an attribute of relation  $Y$ .  $A_i$  &  $B_j$  should have the same domain. The letter  $\theta$  is one of the comparison operators ( $=, <, >, \leq, \geq, <=, >=, <>$ ). A join operation with such a general join condition is called a theta join. When theta join is used, the tuples whose join attribute is null do not appear in the result.

③ Natural join - In this join also, the comparison operator is equality operator ( $=$ ). But the equi join contains two identical columns from the relation being joined. An equi join with one of the two identical columns eliminated is called a natural join. This natural join also produces a new table that does not have any duplicate columns.

④ Outer join - An outer join is a type of equi join that is used to show all data from one table, even if corresponding

date is not found in a record table. Outliers are most commonly used with tables having one-to-many relationships.