Relational Oriented Operation

➤ **Selection or Restriction Operation:** The selection operation is a unary operation. This is used to find the tuples of relations.

  ○ **It is denoted by sigma (σ).**
  ○ e.g. if we want all the employees having salary more than 9000 from relation employee, the query is:

  σ salary >9000(Employee)
  Result:

EID	Name	Salary
1E	John	10000
5E	Nile	15000

➤ **Projection Operation:** The Projection operation is a unary operation which applies only on a single relation at a time. Project operation is used to select columns of table.

  ○ **It is denoted by pi ($\prod$)**
  ○ e.g. if we want all the names of employees and their salary from relation Employee, then query is:

  $\prod$ name,salary (Employee)
  Result:

Name	Salary
John	10000
Ramesh	5000
Smith	8000
Jack	6000
Nile	15000

➤ **Natural Join Operation:** Natural join (⋈) is a binary operation that is written as (r ⋈ s) where r and s are relations. The result of the natural join is the set of all combinations of tuples in r and s that are equal on their common attribute names.

➤ **Left Outer Join(R ⟕ S):** All the tuples from the Left relation, R, are included in the resulting relation. If there are tuples in R without any matching tuple in the Right relation S, then the S-attributes of the resulting relation are made NULL.

➤ **Right Outer Join: (R ⟖ S):** All the tuples from the Right relation, S, are included in the resulting relation. If there are tuples in S without any matching tuple in R, then the R-attributes of resulting relation are made NULL.

➤ **Full Outer Join: (R ⟗ S):** All the tuples from both participating relations are included in the resulting relation. If there are no matching tuples for both relations, their respective unmatched attributes are made NULL.