Functional dependency in DBMS

- Functional Dependency
- The functional dependency is a relationship that exists between two attributes.
- It typically exists between the primary key and non-key attribute within a table.

- $X \rightarrow Y$

- The left side of FD is known as a determinant, the right side of the production is known as a dependent.

- For example:
- Assume we have an employee table with attributes: Emp_Id, Emp_Name, Emp_Address.
- Here Emp_Id attribute can uniquely identify the Emp_Name attribute of employee table because if we know the Emp_Id, we can tell that employee name associated with it.
- Functional dependency can be written as:
- Emp_Id → Emp_Name
- We can say that Emp_Name is functionally dependent on Emp_Id.

What is Functional Dependancy?

- The attributes of a table is said to be dependent on each other when an attribute of a table uniquely identifies another attribute of the same table.

- For example:
- Suppose we have a student table with attributes: Stu_Id, Stu_Name, Stu_Age.
- Here Stu_Id attribute uniquely identifies the Stu_Name attribute of student table because if we know the student id we can tell the student name associated with it.
- This is known as functional dependency and can be written as
- Stu_Id->Stu_Name
- or in words we can say Stu_Name is functionally dependent on Stu_Id.

- Formally:
- If column A of a table uniquely identifies the column B of same table then it can represented as A->B (Attribute B is functionally dependent on attribute A)