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Insertion:

To insert a new Employee tuple into Emp-dept, we must include either the attribute values for that department that the Employee works for.

It's difficult to insert a new department that has no Employee as yet in the Emp-dept relation. The only way to do this is to place null values in the attributes for Employee. This causes a problem because SSN is the key of Emp-Dept. & each tuple is supposed to represent an Employee entity.

Deletion:

If we delete from Emp-Dept an Employee tuple that happens to represent the last Employee working for a particular department, the information concerning that department is lost from the database.

Modification:

In Empdept, if we change the value of one of the attributes of a particular department. We must update the tuples of all employees who work in that department.

(2) Normalization:

Normalization is the process of reorganizing data in a database so that it meets the basic requirements:

(4) There is no redundancy of data
(5) Data dependencies are logical

Boyce Codd NF :-

A table complies BCNF if it is in 3NF and for every functional dependency $X \rightarrow Y$, X should be the Super key of the table.

Eg:-

Emp_id	Emp_nationality	emp_dept	Dept_type	dept_no_of_emp
1001	India	production	D001	200
1001	India	Technical	D002	400
1002	India	purchasing	D004	480

Functional dependencies in the table above,

Emp_id -> Emp_nationality

Emp_dept -> {dept_type, dept_no_of_emp}

Candidate key :- {Emp_id, emp_dept}

Emp_nationality :

Emp_id	Emp Nationality
1001	India
1002	Netherland

Empdept table :

Emp dept	dept_type	dept_no_of_emp
production	D001	200
Technical	D002	400
purchasing	D004	480