

Employee Management ER Diagram

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1 NF

We have this table,

EMPLOYEE (EID, NAME, AGE, SALARY, BASIC, HRA, TA, DA, PF, DESIGNATION, DEPARTMENT, HOD)

In 1NF, we eliminate any repeating groups, and if there is a column with multiple values, we split it into separate rows or columns.

EID	NAME	AGE	SALARY	BASIC	HRA	TA	DA	PF	DESIGNATION	DEPARTM ENT	HOD
1	John	30	50000	30000	5000	2000	3000	1000	Manager	Sales	123
2	Alice	28	60000	35000	6000	2500	3500	1200	Developer	IT	124
3	Bob	35	55000	32000	5500	2200	3200	1100	Developer	IT	124

As we can see there is no column having multiple values. So, it already is in 1NF.

2 NF

Second Normal Form (2NF) is the second step in the process of database normalization. A table is in 2NF if:

1. It is in 1NF (i.e., it satisfies all the conditions of 1 NF).
2. It eliminates partial dependency – meaning that all non-key attributes must depend on the entire primary key.

Employee Table

EID	NAME	AGE	SALARY
1	John	30	50000
2	Alice	28	60000
3	Bob	35	55000

Salary Table

EID	BASIC	HRA	TA	DA	PF
1	30000	5000	2000	3000	1000
2	35000	6000	2500	3500	1200
3	32000	5500	2200	3200	1100

Department Table

EID	DEPARTMENT	DESIGNATION	HOD
1	Sales	Manager	123
2	IT	Developer	124
3	IT	Developer	124

3 NF

Third Normal Form (3NF) is the third step in the process of database normalization. A table is in 3NF if:

1. It is in 2NF (i.e., it satisfies all the conditions of Second Normal Form).
2. It eliminates transitive dependency – meaning that non-key attributes must depend only on the primary key and not on other non- key attributes.

Employee Table

EID	NAME	AGE	SALARY	DEPARTMENT
1	John	30	50000	Sales
2	Alice	28	60000	IT
3	Bob	35	55000	IT

Salary Table

EID	BASIC	HRA	TA	DA	PF
1	30000	5000	2000	3000	1000
2	35000	6000	2500	3500	1200
3	32000	5500	2200	3200	1100

Department Table

DEPARTMENT	HOD
Sales	123
IT	124

Employee Designation Table

EID	DESIGNATION
1	Manager
2	Developer
3	Developer

ER Diagram

