

# LET'S START WITH DBMS :).

## Normalisation and its types

### 4NF(Fourth Normal Form)

A relation is in 4NF if it satisfies the following conditions:

- 1.It is in BCNF
- 2.It has no multi-valued dependencies

Multivalued dependency :

A multi-valued dependency  $X \twoheadrightarrow Y$   $X \twoheadrightarrow Z$  in a relation  $R(X,Y,Z)$  implies that for each value of  $X$ , there is a set of values for  $Y$  and a set of values for  $Z$  that are independent of each other.

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## Normalisation and its types

### FourthNormal Form (4NF)

Student (StudentID, Course, PhoneNbr)

- StudentID  $\rightarrow$   $\rightarrow$  Course (A student can take multiple courses)
- StudentID  $\rightarrow$   $\rightarrow$  PhoneNbr (A student can have multiple PhoneNbr)

StudentId	Course	PhoneNbr
1	Math	123
1	Sci	123
1	Math	345
1	Sci	345
2	Hin	678
2	Eng	678
2	Hin	910
2	Eng	910

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StudentId	Course	PhoneNbr
1	Math	123
1	Sci	123
1	Math	345
1	Sci	345
2	Hin	678
2	Eng	678
2	Hin	910
2	Eng	910

4NF

StudentId	Course
1	Math
1	Sci
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StudentId	PhoneNbr
1	123
1	345
2	678
2	910