

27 OCT 09

Database

Review

F.D. $X, Y \in$ Two sets of attributes

R

$X \in R, Y \in R$

$X \rightarrow Y$

$X \rightarrow$ anything in R .

- Defnd on concept closure: F^+
 $\{ X \rightarrow Y \}$
 $Y \rightarrow Z$

Also intro. closure of $A \in R \rightarrow$ closure of a single attribute.

A^+
 $R \quad A \rightarrow \boxed{U}$
 $\quad A \rightarrow \boxed{U}$
 $\quad A \rightarrow \boxed{U}$

Knowing this what attributes are known.

Ex: $F: \left\{ \begin{array}{l} X_1 \rightarrow Y_1 \\ \underline{X_2 \rightarrow Y_2} \end{array} \right\}$

L	L+R	R
AB	BCD	F

 \rightarrow single attributes

\rightarrow END REVIEW.

1NF: First Lvl Form \rightarrow Have all atomic attributes.

2NF: 2nd " "

3NF: ...

2NF must apply all cond. of 1NF and so on.

	Formal Definition	Informal Def.
1NF	No multivalued attributes	You have to have a key
2NF	Every non-prime attribute is not partially dependent on a part of a key	All non-prime should depend on the whole key.
3NF	$\forall x \rightarrow A$, it satisfies (a) x is a superkey or (b) A is prime. x being any set of attribute	all attributes depend on nothing but the superkey. w/ exception of (b)
Boyce-codd NF	$\forall x \rightarrow A$, (a)	

prime attribute: part of a key

$R: (A, B, C, D, E)$

Ex: of informal def of 2NF.

Emp - PROJ

(SSN, Pid, addr, Bdate, Pname, Ploc) \rightarrow these not set. 2ND

SSN \rightarrow addr, Bdate

Pid \rightarrow Pname, Ploc

Depend on key, are not prime.

Ex of 3NF $x \rightarrow A$ is Bdate \rightarrow Pid

$x \rightarrow A$

Ex: 3NF

Property

(Property-id, county-name, lot, Area)

$\begin{matrix} X & & & A \\ \text{Property-id} & \rightarrow & \text{county-name, lot, Area} \\ \text{Area} & \rightarrow & \text{Property-id} \end{matrix}$

END Notes

Examples:

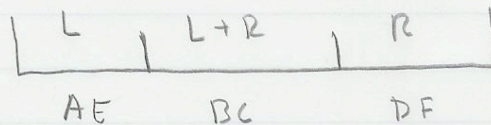
R: (A, B, C, D, E, F)

A → B

B → C

B → D

CE → F



$A^+ = (A, B, C, D)$

$(AE)^+ = (A, B, C, D, E, F)$

Since A^+ already gives C etc. all you need is E, which give CE → F. AE are your keys.