



Valid: Y is Determined by X.

Sid	Sname
1	Ranjit
2	Varun

Valid:

Sid	Sname
1	Ranjit
1	Ranjit

Invalid:

Sid	Sname
1	Ranjit
1	Varun

Invalid:

Sid	Sname
1	Ranjit
2	Ranjit

Augmentation: if $X \rightarrow Y$, then $XZ \rightarrow YZ$

Transitive: if $X \rightarrow Y$ and $Y \rightarrow Z$ then $X \rightarrow Z$

Union: if $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow YZ$

Decomposition: if $X \rightarrow YZ$ then $X \rightarrow Y$ and $X \rightarrow Z$

Pseudotransitivity: if $X \rightarrow Y$ and $WY \rightarrow Z$ then $XW \rightarrow Z$

Composition: if $X \rightarrow Y$ and $Z \rightarrow W$ then $XZ \rightarrow YW$

Non trivial FD:

$X \rightarrow Y$ $X \cap Y = \phi$

$Eid \rightarrow Enam$ $Sid \rightarrow Sname$
 $Eid \rightarrow Location$ $Sid \rightarrow Semester$
 $Sid \rightarrow Phono$

Valid: Y is Determined by X.

Sid	Sname
1	Ranjit
2	Yashu

Valid:

Sid	Sname
1	Ranjit
1	Ranjit

Invalid:

Sid	Sname
1	Ranjit
1	Yashu

Invalid:

Sid	Sname
1	Ranjit
1	Ranjit

Properties of FD:

Reflexivity: if Y is subset of X then $X \rightarrow Y$

Augmentation: if $X \rightarrow Y$, then $XZ \rightarrow YZ$

Transitive: if $X \rightarrow Y$ and $Y \rightarrow Z$ then $X \rightarrow Z$

Union: if $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow YZ$

Decomposition: if $X \rightarrow YZ$ then $X \rightarrow Y$ and $X \rightarrow Z$

Pseudotransitivity: if $X \rightarrow Y$ and $WY \rightarrow Z$ then $WX \rightarrow Z$

Composition: if $X \rightarrow Y$ and $Z \rightarrow W$ then $XZ \rightarrow YW$

Augmentation: if $X \rightarrow Y$, then

****** Transitive: if $X \rightarrow Y$ and $Y \rightarrow Z$ then $X \rightarrow Z$
 $Sid \rightarrow Sname$ and $Sname \rightarrow City$
 $Sid \rightarrow City$ ✓

Union: if $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow YZ$
 $X \rightarrow YZ$

Decomposition: if $X \rightarrow YZ$ then $X \rightarrow Y$ and $X \rightarrow Z$
 $X \rightarrow Y, X \rightarrow Z$

Pseudotransitivity: if $X \rightarrow Y$ and $WY \rightarrow Z$ then $WX \rightarrow Z$

Composition: if $X \rightarrow Y$ and $Z \rightarrow W$ then $XZ \rightarrow YW$

Valid: ✓

$Sid \rightarrow Sname$

Ranjit

Ranjit

$Sname$

Ranjit