

Normal Forms

1NF:

Domain of each attribute is an *elementary* type; that is, not a *set* or a *record structure*.

2NF:

Whenever $\mathcal{X} \mapsto A$ is a functional dependency that holds in relation \mathbf{R} and $A \notin \mathcal{X}$, then either

- A is *prime*, or
 - \mathcal{X} is not a proper subset of any key for \mathbf{R} .
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3NF:

Whenever $\mathcal{X} \mapsto A$ is a functional dependency that holds in relation \mathbf{R} and $A \notin \mathcal{X}$, then either

- A is *prime*, or
 - \mathcal{X} is a key or a super-key for \mathbf{R} .
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BCNF:

Whenever $\mathcal{X} \mapsto A$ is a functional dependency that holds in relation \mathbf{R} and $A \notin \mathcal{X}$, then

- \mathcal{X} is a key or a super-key for \mathbf{R} .