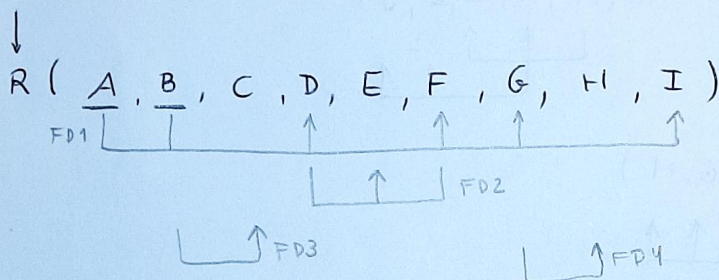


Guia 7

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7.1

Livro (Tit - Livro, Nome - Autor, Afiliado - Autor, Tipo - Livro, Preço, Nºpgs, Editor, Endereço - Editor, Ano - Pub)



a) Está em 1FN pois os atributos são atômicos (não existem atributos compostos ou multivalores) e não existem relações dentro de relações. Para além disso existem relações parciais e relações transitivas por isso não pode estar nem em 2FN nem em 3FN

b) (2FN) R (A, B, D, E, F, G, H, I) → Aqui separa-se a relação parcial FD3

Diagram showing relation R with attributes A, B, D, E, F, G, H, I. Functional dependencies are indicated: FD1 (A, B) → D, E, F, G, H, I; FD2 (D, E) → F; FD4 (I) → A, B, C, D, E, F, G, H.

R2 (B, C)

Diagram showing relation R2 with attributes B, C. Functional dependency is indicated: FD3 (B) → C.

(3FN) R (A, B, D, F, G, I) R2 (B, C) R3 (D, F, E)

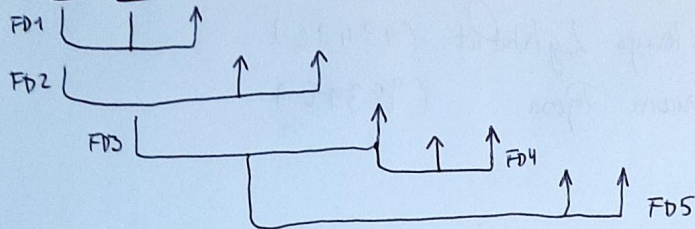
Diagram showing relation R with attributes A, B, D, F, G, I. Functional dependencies are indicated: FD1 (A, B) → D, F, G, I; FD2 (D, F) → E; FD3 (B) → C; FD4 (I) → A, B, C, D, E, F, G, H.

R4 (G, H)

Diagram showing relation R4 with attributes G, H. Functional dependency is indicated: FD4 (G, H) → I.

→ Separamos também as relações transitivas FD2 e FD4

7.2 $R(A, B, C, D, E, F, G, H, I, J)$



a) A e B ~~are~~ chave

b) α FN $R(A, B, C)$ $R_2(A, D, E, I, J)$

FD1: $A \rightarrow B, C$
 FD2: $A \rightarrow D, E, I, J$
 FD5: $D \rightarrow I, J$

~~R3(A, B, C)~~ $R_3(B, F, G, H)$

FD3: $B \rightarrow F, G, H$
 FD4: $F \rightarrow G, H$

c) 3 FN $R(A, B, C)$ $R_2(A, D, E)$ $R_3(B, F)$ $R_4(D, I, J)$

FD1: $A \rightarrow B, C$
 FD2: $A \rightarrow D, E$
 FD3: $B \rightarrow F$
 FD5: $D \rightarrow I, J$
 FD4: $F \rightarrow G, H$

7.3 $R(A, B, C, D, E)$

FD1: $A \rightarrow B, C, D, E$
 FD2: $B \rightarrow C, D$
 FD3: $C \rightarrow D$

a) A e B ~~are~~ chave

b) 3 FN $R(A, B, C, D)$ $R_2(D, E)$

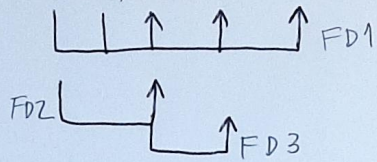
FD1: $A \rightarrow B, C, D$
 FD2: $D \rightarrow E$

c) $BCNF$ $R(A, B, C, D)$ $R_2(C, A)$ $R_3(D, E)$

FD1: $A \rightarrow B, C, D$
 FD3: $C \rightarrow A$
 FD2: $D \rightarrow E$

7.4)

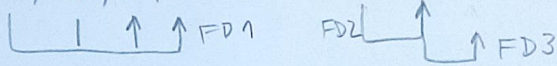
$R(A, B, C, D, E)$



a) A e B ~~se~~ chave

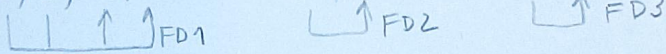
b) (2FN)

$R(A, B, D, E)$ $R_2(A, C, D)$



c) (3FN)

$R(A, B, D, E)$ $R_2(A, C)$ $R_3(C, D)$



d) Fica igual à decomposição anterior