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Questão 1.1

Find Minimal Cover

A → C

A → D

E → A

E → H

Questão 1.2

Find Minimal Cover

A → C

A → D

E → A

E → H

Questão 1.3

Como podemos observar, os conjuntos de dependências funcionais são equivalentes.

Questão 2.1

Find Candidate Keys

Candidate Keys Found

• A B

Questão 2.2

Não está

Check Normal Form



2NF

The table is not in 2NF.



3NF

The table is not in 3NF.



BCNF

The table is not in BCNF.

Questão 2.3

Normalize to 3NF

Attributes

A E D

Functional Dependencies

A \rightarrow D E

Attributes

B F

Functional Dependencies

B \rightarrow F

Attributes

F H G

Functional Dependencies

F \rightarrow H G

Attributes

D J I

Functional Dependencies

D \rightarrow J I

Attributes

A B C

Functional Dependencies

A B \rightarrow C

Questão 3.1

Find Candidate Keys

Candidate Keys Found

- semester year courseno secno
- semester year dayshours roomno

Questão 3.2

Normalize to 3NF

Attributes

courseno courselevel credithours offeringdept

Functional Dependencies

courseno → courselevel credithours offeringdept

Attributes

courseno secno instructorssn semester year dayshours roomno noofstrudents

Functional Dependencies

courseno secno semester year → roomno dayshours

dayshours roomno semester year → secno courseno instructorssn noofstrudents

Questão 3.3

Normalize to BCNF

Attributes

course_{no} offering_{dept} credit_{hours} course_{level}

Functional Dependencies

course_{no} → offering_{dept} credit_{hours} course_{level}

Attributes

course_{no} sec_{no} instructor_{ssn} semester year day_{hours} room_{no} no_{of}st_{udents}

Functional Dependencies

course_{no} sec_{no} semester year → room_{no} day_{hours}

day_{hours} room_{no} semester year → sec_{no} course_{no} instructor_{ssn} no_{of}st_{udents}

Questão 4




answer


[[a, 1], [b, 1, 2], [a, 3], [a, 4], [a, 5], [b, 1, 6]]
[[b, 2, 1], [a, 2], [b, 2, 3], [a, 4], [a, 5], [a, 6]]
[[b, 3, 1], [b, 3, 2], [b, 3, 3], [a, 4], [a, 5], [b, 3, 6]]
[[b, 4, 1], [a, 2], [b, 4, 3], [b, 4, 4], [b, 4, 5], [a, 6]]

false

Questão 5.1~5.4


 answer5-1-1

false


 answer5-1-2

true




 answer5-1-3


false

 answer5-2

false

 answer5-3

false

 answer5-4


[[a, 1], [a, 2], [a, 3], [a, 4], [a, 5]]

[[a, 1], [b, 2, 2], [b, 2, 3], [a, 4], [a, 5]]

true



Questão 5.5

 answer5-5

Considering $[m] \rightarrow [mf]$

Xplus=[c, m, mf]

Considering $[m, y] \rightarrow [p]$

Xplus=[p, y, c, m, mf]

Considering $[mf] \rightarrow [c]$

Xplus=[c, mf]

true



