

© Question 1
© Question 2
© Question 3
© Question 4
© Question 5
© Question 6
© Question 7
© Question 8

Time Running: Hide Time
Attempt due: Jul 6 at 10pm
1 Hour, 39 Minutes, 50 Seconds

Questions

Given relation R(a, c, d, e, f, w) where there are two keys: (c, d,e) and (f). Given a set of functional dependencies

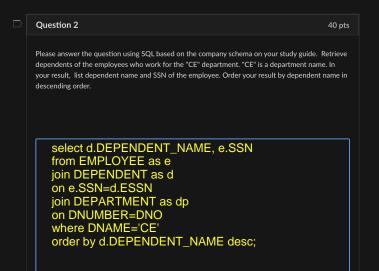
F = {fd1: {c, d, e}·>·(a, f, w), fd2: f·> {a, c, d, e, w}, fd3: a > c}.

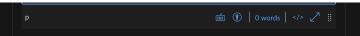
Which normal form is R in? Explain why. You must answer the question using the normal form definitions we covered in the class. Use any other definitions will get a Zero.

Its in 3rd normal form. Because from 3NF definition we have A relation schema R is in 3NF if, whenever a non-trivial functional dependency X --> A holds in R, then either.

(1) X is a superkey of R, or
(2) A is a prime attribute of R

both conditions of 3NF satisfied in given relation R and functional dependencies.





Question 3 40 pts

This question is based on the Bank database schema on the study guide. Please use SQL to answer this query. For each account that has a balance of 300 or more, and has more than 3 owners, please list the account number and account balance.

select Account.acc_no, balance from Account INNER JOIN Owns On Account.acc_no=Owns.acc_no where balance >= 300 group by Owns.acc_no having count(*) > 3;

n

False

Ans







E :

Question 4

A data file is physically ordered based on key employeeID. The record in the data file consists of employeeID (key), first Name (not unique), last Name (not unique), and zip code (not unique). The data file is physically ordered based on employeeID. Suppose it is not allowed to change the structure of the data file.

Statement: it is possible to build a clustering index on zip code.

We can use master and overflow files to make insertion more efficient on sorted files. When insert, insert to the _______ first, then periodically, do file reorganization.

None of the answers

master file and overflow at the same time

master file Ans
overflow file

A data file is physically ordered based on key employeeID. The record in the data file consists of employeeID (key), first name (not unique), last name (not unique), and zip code (not unique). The data file is physically ordered based on employeeID. Suppose it is not allowed to change the structure of the data file.

Statement: it is possible to build a primary index on employeeID.

True Ans

False

Question 7

R(a,b,c,d,e,t,g,w), there are two keys: (a,b,c) and d.

Given the following functional dependencies:

(a,b,c) -> (d,e,t,g,w)

(d) -> (a,b,c,e,t,g,w)

(a) -> g

Statement: g is fully functionally dependent on (a,b,c).

