

Second Assignment on DBMS for CSE-2017 (4th Sem.) and Minor Students

Q1). Write all the rules of Armstrong Axioms and Use the Basic Armstrong Axioms to prove the Pseudo Transitivity rule.

Q2). What is minimization of Functional dependency set/Conical Cover of Functional dependency Set?

Q3a). What is the difference between 3NF and BCNF?

Q3b). With Suitable example, show that when two functional dependency set will be equivalent?

Q4a). i) What is Multivalued Dependency and how it is related to 4NF?

ii) What is Join Dependency and how it is related to 5NF?

Q4b). Discuss about Loss-less decomposition with suitable example.

Q5). Consider the following Relation Schema and set of Functional Dependency

$R = \{A, B, C, D, E, F, G, H, I, J\}$

$FD: \{AB \rightarrow C\}, \{A \rightarrow DE\}, \{B \rightarrow F\}, \{F \rightarrow GH\}, \{D \rightarrow IJ\}$

i) What are the Candidate Keys for relation R?

ii) Check whether R is in 3NF or not? If not decompose the relation R into 3NF and ensure the Loss-less decomposition Properties and Functional Dependency Properties.

Q6). What are essential properties of a Transaction and it's States? Discuss.

Q7). Discuss the following Concurrent Transaction problems.

i) Lost Update Problem

ii) Dirty read Problem

iii) Phantom Tuple

iv) Un-Repeatable Read Problem

Q8). What do you mean by serializability? Whether the following schedules is conflict serializability or view serializability or both?

Schedule 1: $R_1(A)$, $R_3(A)$, $W_3(A)$, $W_1(A)$, $R_2(A)$

Schedule2: $R_3(A)$, $R_2(A)$, $R_1(A)$, $W_3(A)$, $W_1(A)$

Q9). What is Shared and Exclusive Lock? Show the lock compatibility matrix.

Q10). What is 2PL concurrency protocol? Discuss its variants.

Q11). Discuss about Time Stamp Ordering Protocol for Concurrency Control.

Q12). Write all conditions to check whether two concurrent schedules are view equivalent or not?

Note: Dear Students, you will find all the questions in 2nd Internal from this assignment only. However, the combination and order of questions may vary in original question paper.

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