



SNS COLLEGE OF TECHNOLOGY, COIMBATORE-35

(AN AUTONOMOUS INSTITUTION)



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

19CST202-DATABASE MANAGEMENT SYSTEM

UNIT-III
Introduction
2 Mark Question

1. What is meant by lossless-join decomposition? APRIL/MAY-2011

We claim the above decomposition is lossless. How can we decide whether decomposition is lossless?

1. Let R be a relation schema.
2. Let F be a set of functional dependencies on R .
3. Let ρ and σ form a decomposition of R .
4. The decomposition is a lossless-join decomposition of R if at least one of the following functional dependencies are in F : a. b.

2. List the disadvantages of relational database system.

- x Repetition of data
- x Inability to represent certain information.

3. What is first normal form?

The domain of attribute must include only atomic (simple, indivisible) values.

4. What is meant by functional dependencies?

Consider a relation schema R and a $\alpha \subset R$ and $\beta \subset R$. The functional dependency $\alpha \rightarrow \beta$ holds on relational schema R if in any legal relation $r(R)$, for all pairs of tuples t_1 and t_2 in r such that

$t_1[\alpha] = t_2[\alpha]$, and also $t_1[\beta] = t_2[\beta]$.

5. What are the uses of functional dependencies?

To test relations to see whether they are legal under a given set of functional dependencies. To specify constraints on the set of legal relations.

6. What meant by trivial dependency?

Functional dependency of the form $\alpha \rightarrow \beta$ is trivial if $\beta \subset \alpha$. Trivial functional dependencies are satisfied by all the relations.

7. What are axioms?

Axioms or rules of inference provide a simpler technique for reasoning about functional dependencies.

8. What is meant by computing the closure of a set of functional dependency?

+ The closure of F denoted by F^+ is the set of functional dependencies logically implied by F .

9. What is meant by normalization of data?

It is a process of analyzing the given relation schemas based on their Functional Dependencies (FDs) and primary key to achieve the properties

Minimizing redundancy

Minimizing insertion, deletion and updating anomalies

10. Define Boyce codd normal form .

A relation schema R is in BCNF with respect to a set F of functional + dependencies if, for all functional dependencies in F of the form. $\alpha \rightarrow \beta$, where α

11. List out the desirable properties of decomposition.

- x Lossless-join decomposition
- x Dependency preservation
- x Repetition of information

12. What is 2NF?

A relation schema R is in 2NF if it is in 1NF and every non-prime attribute A in R is fully functionally dependent on primary key.

13. What is the use of group by clause?

Group by clause is used to apply aggregate functions to a set of tuples. The attributes given in the group by clause are used to form groups. Tuples with the same value on all attributes in the group by clause are placed in one group.

14. What is the use of sub queries?

A sub query is a select-from-where expression that is nested within another query. A common use of sub queries is to perform tests for set membership, make set comparisons, and determine set cardinality.

15. What is view in SQL? How is it defined?

Any relation that is not part of the logical model, but is made visible to a user as a virtual relation is called a view.

We define view in SQL by using the create view command. The form of the create view command is Create view v as <query expression>

16. What is the use of with clause in SQL?

The with clause provides a way of defining a temporary view whose definition is available only to the query in which the with clause occurs.

17. List the table modification commands in SQL.

Deletion
Insertion
Updates
Update of a view

18. List the SQL domain Types.

SQL supports the following domain types.

- 1) Char(n)
- 2) varchar(n)
- 3) int
- 4) numeric(p,d)
- 5) float(n)
- 6) date.

19. What is the use of integrity constraints?

Integrity constraints ensure that changes made to the database by authorized users do not result in a loss of data consistency. Thus integrity constraints guard against accidental damage to the database.

20. Mention the 2 forms of integrity constraints in ER model.

- x Key declarations
- x Form of a relationship

21. What is trigger?

Triggers are statements that are executed automatically by the system as the side effect of a modification to the database.

22. What are domain constraints?

A domain is a set of values that may be assigned to an attribute .all values that appear in a column of a relation must be taken from the same domain.

23. What are referential integrity constraints?

A value that appears in one relation for a given set of attributes also appears for a certain set of attributes in another relation.

24. What is assertion? Mention the forms available.

An assertion is a predicate expressing a condition that we wish the database always to satisfy. Domain integrity constraints. Referential integrity constraints

30. List some security violations (or) name any forms of malicious access.

- x Unauthorized reading of data
- x Unauthorized modification of data
- x Unauthorized destruction of data.

31. List the types of authorization.

- X Read authorization
- x Write authorization
- x Update authorization
- x Drop authorization

32. What is authorization graph?

Passing of authorization from one user to another can be represented by an authorization graph.

33. List out various user authorization to modify the database schema.

- x Index authorization
- x Resource authorization
- x Alteration authorization
- x Drop authorization

34. What are audit trails?

An audit trail is a log of all changes to the database along with information such as which user performed the change and when the change was performed.