

Relational Database Interview Questions And Answers Guide.



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Relational Database Job Interview Preparation Guide.

Question # 1

Explain 2NF?

Answer:-

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.

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Question # 2

Explain 3NF?

Answer:-

A relation schema R is in 3NF if it is in 2NF and for every FD $X \rightarrow A$ either of the following is true

* X is a Super-key of R.

* A is a prime attribute of R.

In other words, if every non prime attribute is non-transitively dependent on primary key.

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Question # 3

What you know in mapping of ERD to DFD?

Answer:-

a) entities in ERD should correspond to an existing entity/store in DFD

b) entity in DFD is converted to attributes of an entity in ERD

c) relations in ERD has 1 to 1 correspondence to processes in DFD

d) relationships in ERD has 1 to 1 correspondence to flows in DFD

(a) entities in ERD should correspond to an existing entity/store in DFD

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Question # 4

Explain DDL Interpreter?

Answer:-

It interprets DDL statements and record them in tables containing metadata.

Its a language in database through which you can make the logical design of the schemas

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Question # 5

Explain Fully Functional dependency?

Answer:-

Fully Functional dependency is based on concept of full functional dependency. A functional dependency $X \rightarrow Y$ is full functional dependency if removal of any attribute A from X means that the dependency does not hold any more.

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Question # 6

Explain Armstrong rules? How they are complete and/or sound?

Answer:-

The well-known inference rules for FDs

** Reflexive rule :

If Y is subset or equal to X then $X \rightarrow Y$.

** Augmentation rule:

If $X \rightarrow Y$ then $XZ \rightarrow YZ$.



** Transitive rule:

If {X Y, Y Z} then X Z.

** Decomposition rule :

If X YZ then X Y.

** Union or Additive rule:

If {X Y, X Z} then X YZ.

** Pseudo Transitive rule :

If {X Y, WY Z} then WX Z.

Of these the first three are known as Armstrong Rules. They are sound because it is enough if a set of FDs satisfy these three. They are called complete because using these three rules we can generate the rest all inference rules.

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Question # 7

Explain Relational Algebra?

Answer:-

It is procedural query language. It consists of a set of operations that take one or two relations as input and produce a new relation.

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Question # 8

Explain DML (Data Manipulation Language)?

Answer:-

This language that enable user to access or manipulate data as organised by appropriate data model.

* Procedural DML or Low level: DML requires a user to specify what data are needed and how to get those data.

* Non-Procedural DML or High level: DML requires a user to specify what data are needed without specifying how to get those data.

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Question # 9

Explain Data Independence?

Answer:-

Data independence means that the application is independent of the storage structure and access strategy of data. In other words, The ability to modify the schema definition in one level should not affect the schema definition in the next higher level.

Two types of Data Independence are:

* Physical Data Independence: Modification in physical level should not affect the logical level.

* Logical Data Independence: Modification in logical level should affect the view level.

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Question # 10

Explain VDL (View Definition Language)?

Answer:-

It specifies user views and their mappings to the conceptual schema.

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Question # 11

Explain 5NF?

Answer:-

A Relation schema R is said to be 5NF if for every join dependency {R1, R2, ..., Rn} that holds R, one of the following is true

* $R_i = R$ for some i.

* The join dependency is implied by the set of FD, over R in which the left side is key of R.

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Question # 12

Explain the different types of JOIN operations?

Answer:-

Equi Join:

This is the most common type of join which involves only equality comparisons. The disadvantage in this type of join is that there

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Question # 13

Explain 4NF?

Answer:-

A relation schema R is said to be in 4NF if for every Multivalued dependency $X \twoheadrightarrow Y$ that holds over R, one of the following is true

* X is subset or equal to (or) $XY = R$.

* X is a super key.

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Question # 14

Explain DML Compiler?

Answer:-

It translates DML statements in a query language into low-level instruction that the query evaluation engine can understand.

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Question # 15

Explain degree of a Relation?

Answer:-

Degree of a Relation is the number of attribute of its relation schema.

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Question # 16

Explain BCNF (Boyce-Codd Normal Form)?

Answer:-

A relation schema R is in BCNF if it is in 3NF and satisfies an additional constraint that for every FD $X \twoheadrightarrow A$, X must be a candidate key.

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