Data Modeling Job Interview Questions And Answers

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Data Modeling Interview Questions And Answers Guide.

Question - 1:

Explain me what is reverse engineering in a data model?

Ans:

* Reverse Engineering is a process useful for creating the data modes from database and scripts.
* In this tools have options to connect the database by which we can reverse engineer a database into a data model.

View All Answers

Question - 2:

Tell me what is basic elements of ERD?

Ans:

* There are three basic elements
* Entities which we seek information
* Attributes the data collect about the entities.
* Relationship provide the structure needed to draw information from multiple entities.

View All Answers

Question - 3:

What is a Table (entity)?

Ans:

* Data stored in a form of rows and column is called as table.
* Each column has data type and based on the situation, integrity constraints are enforced on columns.

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Question - 4:

Tell me what is a composite foreign key constraint?

Ans:

* Foreign key constraint is a column, that is used to establish and enforce a link between the data in two tables.
* It is defined as constraint create or modify a table.

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Question - 5:

Explain what is cardinality?

Ans:

In a database, high cardinality means more unique values are stored in a column and vice versa.One to One, One to many, and many to many are different types of cardinalities.

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Question - 6:

What is data model repository?

Ans:

* A Data modelling repository is storage area, where metadata of a data model is stored.
* The data is stored in different from the software perspective, organization's perspective and usage perspective.
* Repository can be stored any, where either in a data base or locally within any system.

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Question - 7:

Explain what is self - recursive relationship?

Ans:

Standalone column is a table will be connected to the primary key of the same table. It is called recursive relationship.

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Question - 8:

Tell me what is a constraint? And its types?

Ans:

* Constraint is a rule imposed on data.
* Different types of constraint:
* Primary key
* Unique
* Not null
* Foreign key
* Composite foreign key
* Check constraint

View All Answers

Question - 9:

What is a foreign key?

Ans:

In relational databases, a foreign key is a field in one table which is used to uniquely identify a row of another table.

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Question - 10:

Tell me what is a unique constraint?

Ans:

Unique constraint is imposed on the column data to avoid duplicate values, but it will contain NULL values.

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Question - 11:

Tell me what is a relational data modelling?

Ans:

Visual representation of objects in a relational database is called as relational data modelling, table contains row and copy.

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Question - 12:

Explain what is index?

Ans:

Index is imposed on column or set of columns for fastest retrieval of data.

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Question - 13:

Tell me what is De-Normalization?

Ans:

* De- Normalization is a process of adding redundancy to the data.
* It helps us to quickly retrieve the information from the database.

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Question - 14:

What is a Row?

Ans:

It is known as tuple or record is the horizontal alignment of the data.

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Question - 15:

What is a primary key constraint?

Ans:

The primary key constraint is imposed on the column data to avoid null value and duplicate values.

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Question - 16:

Do you know what does data model contain?

Ans:

Logical Data Model Contain:
Entry, Super Type, Sub Type, primary key, Alternate key, Inversion key Entry, Rule, Relationship, Definition, Business Rule, Entity, etc.
Physical Data Model Contain:
Table, Column, Primary key Constraint, Unique Index, Non Unique Index, Check constraint, Default value, Foreign key, Comment etc.

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Question - 17:

Tell me what is forward engineering in a data model?

Ans:

* It is a process by which DDL scripts are generated from the data model.
* Data modelling tools have options to create DDL Scripts by connecting with various databases.
* With its scripts and database can be created.

View All Answers

Question - 18:

Tell me what is a sequence?

Ans:

It is a database object to generate unique number

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Question - 19:

Explain what are the important types of Relationships in a data model?

Ans:

* Identifying
* Non - Identifying Relationship
* Self -Recursive Relationship

View All Answers

Question - 20:

Tell me what is a column (attribute)?

Ans:

Column also known as field is a vertical alignment of a data and constrains related to that columns.

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Question - 21:

Explain me what is Data Modeling?

Ans:

Data model is a conceptual representation of Business Requirement (logic data model) or Data Base objects required for a database and very powerful in expressing and communicating the business requirements and database objects.

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Question - 22:

Do you know what is a composite foreign key constraint?

Ans:

A group of columns in a foreign key, it is called as a composite foreign key constraint

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Question - 23:

Explain what is OLTP data modelling?

Ans:

* OLTP stands for online transactional processing.
* Data models are constructed for transactions is called OLTP data modelling.

View All Answers

Question - 24:

Explain me what is a sequence?

Ans:

Sequence is a database object to generate unique number.

View All Answers

Question - 25:

Explain me what is a check constraint?

Ans:

Check constraint is used to check range of values in a column.

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Question - 26:

What is second normal form?

Ans:

An entity is in the second normal form if all of its attributes depend on the whole (primary) key. In relational terms, every column in a table must be functionally dependent on the whole primary key of that table. Functional dependency indicates that a link exists between the values in two different columns.
If the value of an attribute depends on a column, the value of the attribute must change if the value in the column changes. The attribute is a function of the column. The following explanations make this more specific:
If the table has a one-column primary key, the attribute must depend on that key.
If the table has a composite primary key, the attribute must depend on the values in all its columns taken as a whole, not on one or some of them.
If the attribute also depends on other columns, they must be columns of a candidate key; that is, columns that are unique in every row.
If you do not convert your model to the second normal form, you risk data redundancy and difficulty in changing data. To convert first-normal-form tables to second-normal-form tables, remove columns that are not dependent on the primary key.

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Question - 27:

What is an artificial (derived) primary key? When should it be used?

Ans:

Using a name as the primary key violates the principle of stability. The social security number might be a valid choice, but a foreign employee might not have a social security number. This is a case where a derived, rather than a natural, primary key is appropriate. A derived key is an artificial key that you create. A natural key is one that is already part of the database.

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Question - 28:

Is this statement TRUE or FALSE? all databases must be in third normal form?

Ans:

In general all organization data bases are normalised to 3nf inorder to remove redundancy and efficent access.A data base can also be created with out normalisation.Hence it is not a mandatory that a database should be in 3nf.

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Question - 29:

Why are recursive relationships are bad? How do you resolve them?

Ans:

Recursive relationships are an interesting and more complex concept than the relationships you have seen in the previous chapters, such as a one-to-one, one-to-many, and many-to-many. A recursive relationship occurs when there is a relationship between an entity and itself. For example, a one-to-many recursive relationship occurs when an employee is the manager of other employeess. The employee entity is related to itself, and there is a one-to-many relationship between one employee (the manager) and many other employees (the people who report to the manager). Because of the more complex nature of these relationships, we will need slightly more complex methods of mapping them to a schema and displaying them in a stylesheet.

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Question - 30:

What is third normal form?

Ans:

An entity is in the third normal form if it is in the second normal form and all of its attributes are not transitively dependent on the primary key. Transitive dependence means that descriptor key attributes depend not only on the whole primary key, but also on other descriptor key attributes that, in turn, depend on the primary key. In SQL terms, the third normal form means that no column within a table is dependent on a descriptor column that, in turn, depends on the primary key. For 3NF, first, the table must be in 2NF, plus, we want to make sure that the non-key fields are dependent upon ONLY the PK, and not other non-key fields for its existence. This is very similar to to 2NF, except that now you are comparing the non-key fields to OTHER non-key fields. After all, we know that the relationship to the PK is good, because we established that in 2NF.

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Question - 31:

What is ERD?

Ans:

Data models are tools used in analysis to describe the data requirements and assumptions in the system from a top-down perspective. They also set the stage for the design of databases later on in the SDLC.
There are three basic elements in ER models:
Entities are the "things" about which we seek information.
Attributes are the data we collect about the entities.
Relationships provide the structure needed to draw information from multiple entities

View All Answers

Question - 32:

When should you consider denormalization?

Ans:

Denormalization is used when there is a lot of tables involved in retreiving data.Denormalization is done in dimentional modelling used to construct a data ware house.This is not usually done for data bases of transactional systems.

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Question - 33:

What is the difference between hashed file stage and sequential file stage in relates to DataStage Server?

Ans:

In datastage server jobs,can we use sequential filestage for a lookup instead of hashed filestage.If yes ,then whats the advantage of a Hashed File stage over sequential filestage

search is faster in hash files as you can directly get the address of record directly by hash algorithm as records are stored like that but in case of sequential file u must compare all the records.

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Question - 34:

What is data sparsity and how it effect on aggregation?

Ans:

Data sparsity is term used for how much data we have for a particular dimension/entity of the model.
It affects aggregation depending on how deep the combination of members of the sparse dimension make up. If the combination is a lot and those combination do not have any factual data then creating space to store those aggregations will be a waste as a result, the database will become huge.

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Question - 35:

What is the difference between star flake and snow flake schema?

Ans:

Star Schema:
Well in star schema you just enter your desired facts and all the primary keys of your dimensional tables in Fact table. And fact tables primary is the union of its all dimension table key. In star schema dimensional tables are usually not in BCNF form.
SnowFlake:
Its almost like starschema but in this our dimension tables are in 3rd NF, so more dimensions tables. And these dimension tables are linked by primary, foreign key relation.

View All Answers

Question - 36:

Give us a non-computer example of preemptive and non-preemptive scheduling?

Ans:

Consider any system where people use some kind of resources and compete for them. The non-computer examples for preemptive scheduling the traffic on the single lane road if there is emergency or there is an ambulance on the road the other vehicles give path to the vehicles that are in need. The example for preemptive scheduling is people standing in queue for tickets.

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