RDBMS Interview Q & A

Q01. What is Normalization?

Normalization is a mathematical approach that helps to decompose a complex Relation (Rx) into multiple simplex Relations (R1, R2, R3 ... Rn), based on Functional Dependencies and Keys. E.F. Codd was implemented Normalization Technique in the Relational Database Model to design Relational Database Structure. ...

Q02. What is First Normal Form 1 NF?

1NF is used to identify and eliminate repeating group of data or a repeating group of attributes from one entity that decompose into two different entities to produce atomic data. ...

Q03. What is Second Normal Form 2 NF?

Each 1NF entity must be implies with 2NF that helps to identify and eliminate redundant information from 1NF entity to avoid update and delete anomalies. ...

Q04. What is Third Normal Form 3 NF?

3NF is used to eliminate transitive dependency attributes from one entity that attributes moved into external entity to avoid update, insert and delete anomalies. ...

Q05. What is Boyce Codd Normal Form BCNF?

BCNF is used to eliminate non-trivial dependencies between candidate key attributes from one entity that attributes moved into external entity to avoid update, insert and delete anomalies. ...

Q06. What is Fourth Normal Form 4 NF?

4NF is used to decompose many non-trivial multivalued dependencies into individual non-trivial multivalued dependencies that avoid redundant data. ...

Q07. What is Fifth Normal Form 5 NF?

5NF is used to decompose semantically related many non-trivial multivalued dependencies into individual non-trivial multivalued dependencies that avoid redundant data. ...

Q08. What is De-normalization?

De-normalization is used to optimize data processing while update or retrieval records. De-normalization can apply in four different approaches…

01. Maintain Controlled Redundancy Data in Parent Table itself. ...

02. Maintain Derived and Calculation Attribute in Separate Entity. ...

03. Decompose Table Structure into two different Entities. ...

04. Decompose Records SET in more than one Entity. ...

Q09. What is Horizontal De-normalization?

Decompose Table Structure from one Entity into two different Entities. ...

Q10. What is Vertical De-normalization?

Decompose Records SET from one Entity into many sequence Entities. ...

Entity Relationship Model Interview Q & A

Q01. What are the Components of Entity Relationship Model?

Entity, Relationship and Attribute are Components of Entity Relationship Model.

Q02. What is Entity in E-R Model?

Entity is used to store Real (Person / Place / Thing) or Abstract (Concept / Event) Information in the Database. Entity is equivalent to Table in the Relational Database. ...

Q03. What is Relationship in E-R Model?

Relationship is a connection between one or more entities in the Data Model. The interrelated entities must have relevant information. Relationship is not a data flow. ...

Q04. What is Degree of Relationship?

The number of participating entity types in a relationship is called Degree of Relationship. ...

Q05. What is Binary Relationship?

A relationship of degree two is called binary relationship. An instance, an I.T. Company is formed with many Departments and each Department is formed with Employees. ...

Q06. What is Ternary or N-ary Relationships?

A relationship of degree three is called ternary relationship. The Ternary and N-ary Relationships should be redesign into to multi-level Binary Relationship. An instance, an I.T. Company is developed and maintaining many Projects with many Tasks. Each Task is assigned to one or many Employees. ...

Q07. What is Unary or Recursive Relationship?

A relationship of degree one is called recursive relationship. Recursive Relationship, one instance of an entity (Employee) is associated with another instance of same entity (Employee). ...

Q08. What is Connectivity and Cardinality?

The connectivity of a relationship describes the mapping of associated entity instances in the relationship. The cardinality of a relationship is the actual number of related occurrences for each of the two entities. In E-R Modelling, we can design data model with three different types of connectivity and Cardinality Relationships. ...

Q09. What is Associate Entity?

Relational Database does not support Many-To-Many relationships that happen frequently in the real time Business Process Workflow. To avoid this RDBMS limitation, we need to define a Common Entity and map the attributes into two or more different entities. This Common Entity is called Associate Entity. ...

Q10. What is Redundant Relationships?

Relationship between two entities that is equivalent to another Relationship between two entities that transitive through an intermediate entity is called Redundant Relationships. ...

Q11. What is Identify Relationship?

An instance of a Child Entity is identified through its association with the Parent Entity is called Identifying Relationship and one instance of the Parent Entity is related with one or more instances of Child Entity. This kind of Child Entity is called Weak Entity. ...

Q12. What is Non-identify Relationship?

An instance of a Child Entity is identified by itself and the Child Entity is not identified through its association with the Parent Entity is called Non-Identifying Relationship and one instance of the Parent Entity is related with one or more instances of Child Entity. ...

Q13. What is Attribute in E-R Model?

Attribute is an Element of an Entity. Entity can design with one or more related Data Attributes. Attribute can categories into two types that Identifier and Descriptor. ...

Q14. What is Identifier Attribute?

Identifier Attribute is called Key Attribute that specifies a unique value in the Entity to identify an instance of the transaction(s). ...

Q15. What is Descriptor Attribute?

Descriptor Attribute is called Non-Key Attribute that specifies a non-unique value in the Entity that describes more information about an instance of the transaction(s). ...

Q16. What is Conceptual Data Model?

Conceptual Data Model is a System Analytical Tool in the Entity Relationship Model that used to define a Business Process Flow based on Business Information. Conceptual Data Model is helps to identify and defines a Business Entities with Degree of Relationship, Connectivity and Cardinality of Relationships and then Types of Relationships. ...

Q17. What is Logical Data Model?

Logical Data Model is a System Analytical Tool in the Entity Relationship Model that used to define a Business Process Flow and Logical Database Structure with Entities, Relationships, Attributes and Domain Rules. Logical Data Model is an extension of Conceptual Data Model that helps to design Physical Database Structure. ...

Q18. What is Physical Data Model?

Physical Data Model is used to define an Application's Database Structure with Database Space, Segment, Block, Partition, Abbreviation, Glossary, Table, Column, Domain Type, Domain Size, Domain Constraint, Key Constraint, Referential Integrity Constraint, Stored Procedure, Trigger, Function and Index Data Objects. ...

Q19. What is Generalization Hierarchy?

A generalization hierarchy is an Inheritance re-presentation method that specifies common attribute of multiple entities into generalized or higher level entity type is called Super Type Entity and the lower level entity designed with unique attribute of each entity is called Sup Type Entity. ...

Q20. What is Supertype Entity?

The Supertype Entity is a generic entity type that is related to one or more Subtype Entities. Supertype Entity defines common characteristics attributes. ...

Q21. What is Subtype Entity?

The Subtype Entity is a specific entity type that is related to one Supertype Entity. Subtype Entity defines unique characteristics attributes. ...

Q22. What is Overlapping Subtype Entity?

Overlapping Subtype Entity defines non-unique characteristics attributes and related with more than one layer Supertype Entity. ...

Q23. What is Disjoint Subtype Entity?

Disjoint Subtype Entity defines unique characteristics attributes and related with one Supertype Entity. ...

Q24. What is Accountability of Data Architect?

Data Architecture is helps to examine and improve "A Business System with Feasibility Study", "System Analytical Process", "Transform Knowledge between Non-Technical and Technical People", "Optimize Database Design" and "Re-Engineering a System". ...

Dimensional Data Model Interview Q & A

Q01. What is Data Warehouse?

Data warehouse is a centralized repository of Enterprise's Historical and Operational Information that helps to queries and analysis Enterprise Operation to take Management Decision. ...

Q02. What is Data Mart?

Data Mart is a subset of the Data Warehouse that based on Subjective of Enterprise Business Unit or Team. Each Data Marts may or may not be dependent or related to other Data Marts in the Data Warehouse. ...

Q03. What is W.H.Inmon Approach?

Inmon vision is Data warehouse is centralized repository of "Corporate Information Factory" (CIF), which provides a Logical Framework for delivering Business Intelligence (BI) and Business Management Capabilities. This approach is called Top to Bottom approach and it follow up Water Fall Software Development Methodology. ...

Q04. What is Ralph Kimball Approach?

Ralph Kimball is a well-known author of data warehouse system concept and introduced "Dimensional Data Architecture" based on Fact and Dimension Technique. This approach is called Bottom to Top approach and it follow up Spiral Software Development Methodology. ...

Q05. What is Dimensional Data Model?

Dimensional Data Model is a specialized adaptation of the Relational Data Model that used to stores and manages Enterprise Historical and Transactional Information in the Data warehouse. In dimensional data model, every transaction data are decomposes and stores in "FACT" and "Dimension" data format. FACT table contains Composite Primary Key and Measurement data and Dimension table contains Foreign Key and Context data that refer the FACT table. ...

Q06. What is Business Intelligence?

BI - Business Intelligence is an Enterprise-aided Model that used a compilation of Process Analytical Methods, Data Architecture Methodologies, Technologies, and Applications to get the Right Information, to the Right Decision Makers, at the Right Time. ...

Q07. What is OLTP?

OLTP – Online Transaction Processing System is used to store and maintains Business Transactional Information in the Database. OLTP Database is helps to generate MIS Transaction Report for Management to know the status of Business Transaction. ...

Q08. What is OLAP?

OLAP – Online Analytical Processing System is helps to generate MIS Analysis Report from Data warehouse by using CUBE. In the OLAP, a predefined Multidimensional Data Structures is called CUBE. CUBE is used to organize and summarize Data warehouse data. CUBE is helps to generate Typical Explorative Analysis Questions can be answered with little or no querying of the Relational Database. ...

Q09. What is Data Mining?

Data Mining is an artificial intelligence process to identify uncovering hidden patterns from data. Data Mining is used in marketing, surveillance, fraud detection and scientific industries to discover uncovering hidden patterns from data. ...

Q10. What is Data Hierarchy?

Data Structure is represents a Systematic Organization of Data that can form through collection of interrelated Columns, Records and Tables in the Relational Database Management System. Data Hierarchy is represents a Logical Top-To-Bottom Ordered Structure of Record(s). ...

Q11. What is FACT Table?

FACT Table is used to store measurements, metrics or facts of a business process in the Data warehouse. Fact table design should start with declaration of grain. Grain is the base business definition of Fact table that determine measurement of business event. Granularity is an extent of information that represents particular transaction data in the Fact table. ...

Q12. What is Additive Fact?

Additive fact can summarize and added across all dimensions around fact table. Transaction level fact table must be design with Additive facts. ...

Q13. What is Semi-additive Fact?

Semi-additive fact can summarize and added across few dimensions around fact table. Summarization level fact table must be design with Semi-additive facts. ...

Q14. What is Non-additive Fact?

Unit Price, Profit Margin, Percentage and Ratio are Non-additive fact that cannot summarize and added across all dimensions around fact table. Summarization level fact table optionally design with Non-additive facts. ...

Q15. What is Transaction Fact Table?

Transaction fact table is used to records one row per transaction with measures of particular business event. Transaction fact table must be design with Additive facts. Additive fact can summarize and added across all dimensions around fact table. ...

Q16. What is Periodic Fact Table?

Periodic fact table is used to records one row for a group of transactions with aggregated measures of business events that happen over a period of time. Periodic fact table must be design with Semi-additive facts. Semi-additive fact can summarize and added across few dimensions around fact table. ...

Q17. What is Accumulating Fact Table?

Accumulating fact table is used to records one row for the entire lifetime of transaction with measures of business events that happen over a period of time. Accumulating fact table must be design with combination of Additive facts with multiple date keys that helps to track the lifetime of business event. Non-additive facts are optional in this type of fact table. ...

Q18. What is Aggregate Fact Table?

Fact table might design with transactional level facts or summarization level facts. Aggregate FACT table must be design with summarization level facts. Summarization level facts are used to stores aggregated or grouped or summed up data that based on certain level of hierarchical data of dimension table. ...

Q19. What is Factless Fact Table?

Relational Database is support Binary and Unary relationship that is not support Ternary and N-ary relationships. Factless fact table is used to captures many-to-many relationships between fact and dimensions, but contains no numeric or textual facts that help to record events or coverage information. ...

Q20. What is Event Factless Fact Table?

Event Factless fact table is used to captures many-to-many relationships between fact and dimensions, but no numeric or textual facts. The existence of the relationship itself is the fact. Boolean data type attribute should add in this factless table that helps to stores 1 or 0 data value. ...

Q21. What is Coverage Factless Fact Table?

Coverage Factless fact table is used to captures many-to-many relationships between fact and dimensions, but no numeric or textual facts. The existence of the relationship itself is the fact that helps to find out non-existence event records. ...

Q22. What is Dimension Table?

Dimension Table is used to maintain Hierarchy Textual Information of business process that integrated with Fact Table in the Data warehouse. FACT Table is used to store measurements, metrics or facts of a business process in the Data warehouse. Grain is the base business definition of Fact table that determine measurement of business event. ...

Q23. What is Shared Dimension Table?

Shared Dimensions are describes the core set of dimensions that shared across the various cube perspectives in a Data Mart. These dimensions are allows the measures in the cube to be summarized according to the different analytical questions. Shared Dimensions are used to maintain and provide consistent information for similar queries. ...

Q24. What is Confirmed Dimension Table?

Conformed Dimension is describes a common structured dimension that shared across the various FACT tables in the Data Warehouse. Conformed Dimensions are used to avoid redundant data in the Data Warehouse. ...

Q25. What is Role-Playing Dimension Table?

Role-Playing Dimension is describes a common structured dimension that appears more than one times in the same Fact table. Role-Playing Dimension is used to avoid multiple SQL Query Joins that helps to optimize SQL Query Operation. ...

Q26. What is Slowly Changing Dimension Table?

Slowly Changing Dimension is used to maintain slowly changing data rather than changing data on a time-based, regular schedule. Slowly Changing Dimension categories into SCD Type 01, SCD Type 02, SCD Type 03 and Hybrid SCD that based on data storage technique. ...

Q27. What is SCD Type 01?

SCD Type 01 method is used to overwrite old data with new data in the Data warehouse. SCD Type 01 method is used to correct mistake data in the Data warehouse. SCD Type 01 method doesn't maintain historical data that is not good idea to maintain Slowly Changing Data in the Data warehouse. ...

Q28. What is SCD Type 02?

SCD Type 02 method is used to maintain Slowly Changing Unlimited Historical Data through actual table structure with new Version Number or Effective Period like Start_Date and End_Date attributes. ...

Q29. What is SCD Type 03?

SCD Type 03 method is used to maintain Slowly Changing Limited Historical Data through actual table structure with new Effect Date and Previous Data attributes. ...

Q30. What is Hybrid SCD?

SCD Type 06 method is a combination of SCD Type (1 + 2 + 3) approach that used to maintain Slowly Changing Unlimited and Detailed Historical Data through actual table structure with new Effective Period of Start_Date, End_Date and Current Flag attributes. Ralph Kimball describes that Hybrid SCD / SCD Type 06 is an "Unpredictable Changes with Single-Version Overlay". SCD Type 06 is advisable to maintain Historical Detail Data in the Data Warehouse. ...

Q31. What is Surrogate Key?

Surrogate Key is a System Key that does not have any intelligence information, typically database is generate the System Key information with internal mechanism. Slowly Changing Dimension Table must design with Surrogate Key that helps to identify unique record from multiple version records. The current version record can retrieve through combination of Surrogate Key + Primary Key + MAX(Version Number). The particular period historical records can retrieve through combination of Surrogate Key + Primary Key + Start_Date AND End_Date. ...

Q32. What is Junk Dimension Table?

Junk Dimension is used to records a collection of low-cardinality Flags and Indicators data. Flag data may be non-generic question's answers like Yes/No or True/False or Activate/Deactivate. Indicator data may be Height, Width, Weight, Color, Status and other tiny text data. ...

Q33. What is Degenerate Dimension Table?

Transaction Number or Document Number is not a Fact and it is not an Entity of Event to maintain in the Dimension table. Most of the time, Transaction Number is a standalone attribute in the Dimension table. Every Transaction Number has one to one relationship between Product Code or Service Code measurement data in the Fact table. Degenerate Dimension Concept is helps to eliminates standalone Transaction Number attribute in Dimension table and improve database operation. ...

Q34. What is STAR Schema?

STAR Schema is describes a logical database structure of Data Warehouse or Data Mart. STAR Schema can design with one de-normalized FACT and one or many shared Dimension table(s) that looks like STAR. ...

Q35. What is Snowflake Schema?

Snowflake Schema is describes a logical database structure of Data Warehouse or Data Mart. Snowflake Schema can design with one de-normalized FACT and one or many normalized Dimension table(s). Snowflake Schema is an extended and normalized STAR Schema. ...

Q36. What is Fact Constellation Schema?

FACT Constellation Schema is describes a logical database structure of Data Warehouse or Data Mart. FACT Constellation Schema can design with collection of de-normalized FACT, Shared and Conformed Dimension tables. FACT Constellation Schema is an extended and decomposed STAR Schema.

...

Updated On: 09-06-2014

* * * * *