

Which of the following most certainly implies the need for an entire table to implement?

- ▶ A binary relationship
- ▶ **A ternary relationship [Click here for Detail](#)**
- ▶ A recursive relationship
- ▶ An identifying relationship

Which of the following constraints enforces entity integrity?

- ▶ PRIMARY KEY
- ▶ FOREIGN KEY
- ▶ CHECK
- ▶ **NOT NULL ([Page 134](#))**

Which of the following is not true about relational tables?

- ▶ Column values are of the same kind.
- ▶ Each row is unique.
- ▶ Each column must have a unique name.
- ▶ **The sequence of rows is significant. [Click here for Detail](#)**

In a conceptual model for a university, what type of relationship exists between Grade and Student entities?

- ▶ 1:1
- ▶ 1:M [Click here for Detail](#)
- ▶ M:M
- ▶ Ternary

Controlling redundancy in a database management system DOES NOT help to

- ▶ [avoid duplication \(Page 16\)](#)
- ▶ avoid unnecessary wastage of storage space
- ▶ avoid unauthorised access to data [Click here for detail](#)
- ▶ avoid inconsistency among data

Which of the following functions are NOT performed by a database administrator?

- ▶ Planning, designing and implementing database systems
- ▶ Establishing standards and procedures for database systems
- ▶ [Communicating with database users \(Page 26\)](#)
- ▶ Allocation of storage locations and data structures

Select the correct statement about the ANSI/SPARC architecture.

- ▶ [The conceptual level is a level of indication between the internal level and the external level. \(Page 33\)](#)

- ▶ The internal level in a database system will definitely be relational.
- ▶ Any given database has many conceptual schemas and one physical schema, but it has only one external schemas.
- ▶ The external level is not concerned with individual user perceptions, while the conceptual level is concerned with a community user perception.

Which of the following is a correct way to implement one-to-many relationship while designing tables?

- ▶ **by splitting the data into two tables with primary key and foreign key relationships. [Click here for Detail](#)**
- ▶ using a junction table with the keys from both the tables forming the composite primary key of the junction table.
- ▶ by splitting each table into three
- ▶ as a single table and rarely as two tables with primary and foreign key relationships.

Which of the following is not a benefit of normalization?

- ▶ Minimize insertion anomalies
- ▶ Minimize deletion anomalies
- ▶ Minimize updation anomalies
- ▶ **Maximize redundancy (Page 162)**

The Entity Relation Model models

- ▶ Entities, Relationships and Processes
- ▶ **Entities and Relationships (Page 71)**
- ▶ Relationships
- ▶ Entities

User rights information is stored in

- ▶ Physical database
- ▶ **Catalog (Page 46)**
- ▶ Logical database
- ▶ Buffer

Making a change to the conceptual schema of a database but not affecting the existing external schemas is an example of

- ▶ Physical data independence.
- ▶ Concurrency control.
- ▶ **Logical data independence. [Click here for detail](#)**
- ▶ Functional dependency

Which of the following is NOT a feature of Context DFD?

- ▶ one process (which represents the entire system)
- ▶ all sources/sinks (external entities)
- ▶ data flows linking the process to the sources and sinks (external entities)
- ▶ sub-processes (which explain and decomposed the major process into small processes) (Page 62)

A relation (from the relational database model) consists of a set of tuples, which implies that

- ▶ all tuples in a relation must be distinct. (Page 129)
- ▶ relational model supports multi-valued attributes whose values can be represented in sets.
- ▶ for any two tuples, the values associated with all of their attributes may be the same.
- ▶ all tuples in a particular relation may have different attributes.

Identify the correct statement with respect to normalization.

- ▶ Normalization is a formal technique that can be used only at the starting phase of the database design.
- ▶ Normalization can be used as a top-down standalone database design technique. [Click here for detail](#)

▶ The process of normalization through decomposition must achieve the lossless join property at any cost whereas the dependency reservation property is sometimes sacrificed.

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Identify the INCORRECT statement among the given.

▶ An entity may be an object with a physical existence like a car, a house or an Employee.

▶ One cannot consider something which has conceptual existence like a course in a degree program as an entity. (Page 71)

▶ Age can be considered as a single value attribute of a person.

▶ An entity type describes the schema or intension for a set of entities which share the same structure.

Structural constraints of a relationship type refer to

▶ identifying the owner entity type relevant to a given entity type

▶ whether the existence of an entity depends on it being related to another entity via the relationship type. [Click here for detail](#)

- ▶ the role that a participating entity from the entity type plays in each relationship instance.
- ▶ the constraints applicable in granting access to tables, columns and views in a database schema.

A collection of concepts that can be used to describe the structure of a database

- ▶ Database
- ▶ DBMS
- ▶ **Data model [Click here for Detail \(Page 68\)](#)**
- ▶ Data

An entity can be logically connected to another by defining a ____.

- ▶ hyperlink
- ▶ **common attribute [Click here for detail](#)**
- ▶ primary key
- ▶ superkey

The ____ constraint specifies whether each entity supertype occurrence must also be a member of at least one subtype.

- ▶ specialization
- ▶ uniqueness

- ▶ inheritance
- ▶ completeness [Click here for Detail](#)

Database management systems, operating systems, applications and utilities are all examples of ____.

- ▶ hardware
- ▶ software [Click here for detail](#)
- ▶ computer infrastructure
- ▶ input and output

Which of the following concepts is applicable with respect to 2NF?

- ▶ Full functional dependency [Click here for detail](#)
- ▶ Any kind of dependency
- ▶ Transitive dependency
- ▶ Non-transitive dependency

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The ER- data model is an example of:

- ▶ Physical database
- ▶ Logical database
- ▶ Relational database
- ▶ Conceptual database [Click here for Detail](#)

Which of the following is true about NOT NULL constraint?

- ▶ enforce domain integrity
- ▶ limit the values that can be placed in a column.
- ▶ prevents any actions that would destroy links between tables with the corresponding data values [Click here for detail](#)
- ▶ enforces the uniqueness of the values in a set of columns

Select the correct statement among the following.

- ▶ Role names are not technically necessary in relationship types when all the participating entity types are distinct.
- ▶ When different entity types participate only once in a single relationship type it is called a recursive relationship. (Page 87)

- ▶ Cardinality ratios for binary relationship are displayed on Entity Relationship Diagrams by using a diamond shape notation.
- ▶ Partial participation which is also called existence dependency is displayed as a double line connecting the participating entity type to the relationship.

Which of the following is true about relational schema?

- ▶ The sequence of columns is significant
- ▶ The sequence of rows is significant.
- ▶ Contains only derived attributes.
- ▶ Values are atomic. (Page 127)

A collection of related data is

- ▶ Logical model
- ▶ Database (Page 10)
- ▶ Data
- ▶ Relational model

A weak entity type

- ▶ must have total participation in an identifying relationship
- ▶ does not have a key attribute(s)

- ▶ both of above [Click here for detail](#)
- ▶ none of the above

A description on a particular collection of data using the given data model

- ▶ Database
- ▶ [Schema \(Page 18\)](#)
- ▶ None of the above.
- ▶ Relation

If K is a foreign key in relation R1, then

- ▶ every tuple of R1 has a distinct value for K.
- ▶ K cannot have a null value for tuples in R1.
- ▶ [K is a key for some other relation. Click here for detail](#)
- ▶ K is a primary key for R1.

Consider the following statements.

- A. An entity integrity constraint states that no primary key value can be null.
- B. A referential integrity constraint is specified between two relations.
- C. A foreign key cannot be used to refer to its own relation.

Identify which of the above statements is/are correct.

- ▶ Only A (Page 134)
- ▶ Only B
- ▶ B and C
- ▶ A and B

Which of the following constraints enforces entity integrity?

- ▶ PRIMARY KEY
- ▶ FOREIGN KEY
- ▶ CHECK
- ▶ NOT NULL (Page 134) rep

Which of the following enforces a relation into 1st normal form?

- ▶ The domain of attribute must include only atomic values. (Page 167)
- ▶ Every non-key attribute is fully functionally dependent on primary key
- ▶ non-key attribute is non-transitively dependent on primary key.
- ▶ Every non-key attribute is partially dependent on super key

Which of the following is a feature of PRIMARY KEY constraint?

- ▶ unique identifier for a row within a database table. [Click here for Detail](#)
- ▶ allow any actions that would destroy links between tables

- ▶ limit the values that can be placed in a column.
- ▶ enforces that the column will only accept null values.

Structural constraints of a relationship type refer to

- ▶ identifying the owner entity type relevant to a given entity type
- ▶ whether the existence of an entity depends on it being related to another entity via the relationship type. [Click here for detail](#)
- ▶ the role that a participating entity from the entity type plays in each relationship instance.
- ▶ the constraints applicable in granting access to tables, columns and views in a database schema.

Which of the following is true about relational schema?

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A ___ relationship exists when an association is maintained within a single entity.

- ▶ unary (Page 144)

- ▶ ternary
- ▶ binary
- ▶ weak

Which of the following is a correct way to implement one-to-many relationship while designing tables?

- ▶ by splitting the data into two tables with primary key and foreign key relationships. [Click here for Detail](#)
- ▶ using a junction table with the keys from both the tables forming the composite primary key of the junction table.
- ▶ by splitting each table into three
- ▶ as a single table and rarely as two tables with primary and foreign key relationships.

Identify the correct statement.

- ▶ Entity integrity constraints specify that primary key values can be composite.
- ▶ Entity integrity constraints are specified on individual relations. [Click here for detail](#)
- ▶ Entity integrity constraints are specified between weak entities.

- ▶ When entity integrity rules are enforced, a tuple in one relation that refers to another relation must refer to an existing tuple.

A software package designed to store and manage databases

- ▶ Database
- ▶ **DBMS (Page 18)**
- ▶ Data model
- ▶ Data

Who is responsible for authorizing access to the database, for coordinating and monitoring its use?

- ▶ Database Designer
- ▶ **Database Administrator (Page 26)**
- ▶ End User
- ▶ Application Programmer

Questions:

Q1. Write the two types of Completeness Constrains?

Answer:- (Page 103)

There are two types of completeness constraints, partial completeness constraints and total completeness constraints.

Q2. Define main functionality of subtype discriminator?

Answer:- (Page 108)

This is a tool or a technique which provides us a methodology to determine that to which subtype one instance of a supertype belongs.

Q3. What is difference between relation and relationship 2 marks

Answer:-

Relationship is purely a construct of the er data model. Relation is a structure of the relational data model.

Q4. Make relation b/w two tables with foreign key? With example.

Answer:- (Page 133)

EMP (empId, empName, qual, depId) DEPT (depId, depName, numEmp) In this example there are two relations; EMP is having record of employees, whereas DEPT is having record of different departments of an organization. Now in EMP

the primary key is empld, whereas in DEPT the primary key is depld. The depld which is primary key of DEPT is also present in EMP so this is a foreign key.

Q5. What do you know about the cardinalities of relationship? (2 Marks)

Answer:- (Page 89)

The cardinality of a relationship is the number of entities to which another entity can map under that relationship.

Q6. What is Data type? (2 Marks)

Answer:- (Page 197)

In Microsoft SQL Server™, each column, local variable, expression, and parameter has a related data type, which is an attribute that specifies the type of data (integer, character, money, and so on) that the object can hold.

Q7. How to implement one-to-one relationship while designing tables? (3 Marks)

Answer:- (Page 143)

In this relationship primary key of one entity type has to be included on other as foreign key. One-to-Many relationships are implemented by splitting the data into two tables with primary key and foreign key relationships.

Q8. Name the three different kinds of anomalies which can be eliminated through normalization? (3 Marks)

Answer:- (Page 170)

- Insertion Anomaly • Deletion Anomaly • Updating Anomaly

Q9. Shortly describe procedural DML and Non-procedural DML. Also give their alternate names. (5 Marks)

Answer:- (Page 208)

There are two types of DML. First is procedural in which: the user specifies what data is needed and how to get it. Second is nonprocedural in which the user only specifies what data is needed.

10. What is a functional dependency F said to be minimal? (5 Marks)

Answer:- (Page 165)

A minimal super key is the candidate key , so if a determinant of functional dependency determines all attributes of that relation then it is definitely a super key and if there is no other functional dependency

Q11. What do you know about partial dependency? (2)

Answer:-

A partial dependency is a dependency where A is functionally dependant on B ($A \rightarrow B$), but there is some attribute on A that can be removed from A and yet the dependency stills holds.

Q12. Define domain of an attribute? (2)

Answer:- (Page 75)

Domain is the set of possible values that an attribute can have, that is, we specify a set of values either in the form of a range or some discrete values, and then attribute can have value out of those values.

Q13. Define relationship type? (3)

Answer:- (Page 85)

A relationship type is an abstraction of a relationship i.e. a set of relationships instances sharing common attributes.

Q14. Describe shortly "the difference Operation "in relational algebra? (3)

Answer:- (Page 154)

If R and S are two relations which are union compatible then difference of these two relations will be set of tuples that appear in R but do not appear in S. It is denoted by (-).

Q15. Explain the salient features of foreign key with help of example? (5)

Answer:-

A foreign key is a mechanism in a relational database that allows for the association of those tables, or for the tables to have a relationship with one another. There are unique characteristics that a foreign key must have. A foreign key guarantees that rows in one table correspond to rows in some other table, thereby establishing database-wide relationships, or references. The table containing the foreign key is the "child," and the other table is the "parent."