~All Final + Mid DB Solves By IG~

1. An SQL query can contain a HAVING clause even if it does not have a GROUP BY clause. F Have

2. SQL includes both data definition language and data maintenance language. F Manipulation

3. leaf node is a class that has no subclasses of its own. T

4. Backup and recovery services are improved using the database approach. T

5. Integrity system is the one responsible for restoring the database to a previous consistent state following a hardware or software failure. F Recovery system

6. Atomicity of updates is one of the relational database advantages. T

7. In the ERD; the oval represent relationship between two entities. F Diamond

8. The attributes in FK may have values other than the domain(s) of the primary key attributes PK F Musn't

9. The data administrator is responsible for the physical realization of the database, including physical database design and implementation. F Database Administrator

10. In the relational database the order of attributes has no significance. T

11. Aggregate functions can be used only in the SELECT and the DELETE clause. F Having

12. A domain can be defined as the set of allowable values for one or more tuples. F Attribute

13. The HAVING clause Acts like a WHERE clause but is used for columns rather than groups. F Tuples

14. Foreign key is the candidate key that is selected to identify tuples in a relation. F Primary Key

15. To remove duplicate rows from the results or to list all different values only of SQL SELECT statement; UNIQUE clause must be included. F Distinct

16. In the relational model; any relation can have many Primary keys Depends on DBA. F Cant Have

17. Specialization is the process of maximizing the differences between members of an entity by identifying their distinguishing characteristics. T

18. Null represents a value for an attribute that is currently unknown or is not applicable for this tuple. T

19. Conceptual schemas correspond to different views of the data. F External

20. If a relation R has no transitive dependency; then R is at least in the 3NF. T

21. A subclass can be a subclass in only one class F One or More

22. In order to design database; the normalization model is used in the top down approach, but ER can be used as a bottom up standalone database design technique. F العكس

23. Database Designers is responsible for data resource management that plans, organizes, describes and controls data resources. F Data Administrator

24. The cardinality of a relation is the number of tuples it contains. T

25. Metadata is a complete definition or description of the database structure and constraints stored in the catalog. T

26. A simple attribute value is derivable from the value of a related attribute(s), not necessarily in the same entity. F Derived

27. Functional depenclency describes the relationship between tuples in a relation. F Attribute

28. In a relation R; Super key is an attribute(s) that matches the candidate key of some other relation S. F Foreign Key

29. The select operation's function in relational algebra is identical to the SELECT clause in SQL T

30. Tuple is a characteristic or trait of an entity type that describes the entity. F Attribute

31. If a relation R has repeating group; then R is at least in the 3nf. F UNF

32. The FK attributes as PK attributes are allowed to be NULL. F Not NULL

33. To apply the intersection operation, the involved relations do not have to be union compatible. F Must be

34. Integrity constraints are specified and enforced only at the run time. F At Different Times

35. In the FD A -> B; B is the determinant of A, and A is the dependent. F العكس

36. Properties of an entity are stored as attributes in a table. T

37. The DELETE statement deletes both the table's structure and data while the DROP TABLE statement deletes only the data. F العكس

38. A subclass with more than one superclass is called a Shared Subclass. T مهم

39. SQL include DDL and DCL statements. F DML

40. Referential Integrity Constraint: If a foreign key exists in a relation, either the foreign key value must match a primary key value of some tuple in its home relation or the primary key value must be wholly null. F Candidate Key , Foreign Key

41. The HAVING clause is designed for use with the GROUP BY clause to restrict the groups that appear in the result table. T

42. Records in file systems are represented as tuples in the relational model. T

1. In the ER model; the Entity, relationship, and attribute are the basic concepts.

2. Metadata is a complete description of the database structure stored in the catalog.

3. Null represents a value for an attribute that is currently unknown or is not applicable for this tuple.

4. The Data Adminstrator is responsible for data resources management; he plans, organizes, and controls data resources, while Logical database designer identifies the entities, attributes, and the relationships between the data, that is to be stored in the database.

5. The same data may be stored in multiple files; this causes the data Redundancy problem.

6. In relational database the PK must has two properties UNIQUE., Minimal .

7. In the relational model; External schemas correspond to different views of the data.

8. In the ERD the ovals represent Attribute, while rectangles represent Entity.

9. The Cardinality of a relation is the number of tuples it contains, while Degree of a relation is the number of attributes it contains.

10. In SQL; the ORDER BY clause is used to order the Rows (Tuples) of the resulted table.

11. SQL has many aggregate functions such as Min, Max ,AVG

12. DDL includes Create and Drop SQL statements.

13. The Join clause in SQL is used to combine rows from two or more tables based on a related column between them.

14. If there are multiple values at the intersection of certain rows and columns in a relation; this relation is in the Unormalized Form normal form.

15. In the Natural JOIN on two relations R and S; the common attributes have the same names in R and S.

16. Multiple Inheritance means that the shared subclass directly inherits attributes and relationships from multiple classes.

17. For a relation R; degree is the number of Attribute, while cardinality is the number of Tuples

18. Domain is the set of allowable values for one or more attributes.

19. If a relation has a single-attribute primary key; it is automatically in at least 2NF normal form.

20. A row in a database relation can also be called a Tuple.

21. the Foreign Key is used to represent relationships between two tables.

22. DBMS is the software that manages and controls access to the database.

23. Speicialization is the process of maximizing the differences between members of an entity by identifying their distinguishing characteristics.

24. Foreign Key is an attribute, or set of attributes, within one relation that matches the candidate key of some other relation.

25. Aggregate functions can be used only in the SELECT list and in the Having clause.

26. End Users is unaware of the DBMS. He accesses the database through specially written applicationprograms that attempt to make the operations as simple as possible.

27. DML includes Select and Update SQL statements.

28. We use the naturel join only when the two relations have Same Attribute Name

29. an entity that is a member of a Subclass inherits all the attributes and relationships of the entity as a member of the Superclass

30. Security system prevents unauthorized users accessing the database.

31. The GROUP BY is use with the SELECT statement only.

32. Subclass is an entity type that is a distinct subgrouping of occurrences of an entity type, which require to be represented in a data model.

33. Generalization is the process of minimizing the differences between entities by identifying their common characteristics.

34. Superclass is an entity type that includes one or more distinct subgroupings of its occurrences, which require to be represented in a data model.

35. A Derived attribute represents a value that is computed or derivable from the value of a related attribute or set of attributes, not necessarily in the same entity.

36. A leaf node is a class that has no subclasses of its own.

37. A file is simply a collection of records, which contains logically related data.

38. A concurrency control system allows shared access of the database.

39. DELETE is used to remove tuples from a database table

40. Primary key is the candidate key that is selected to identify tuples uniquely within the relation.

41. Weak entity type an entity type that is existence-dependent on some other entity type.
42. View is a virtual relation representing the dynamic result of one or more relational operations operating on the base relations to produce another relation.

43.The result of a SQL SELECT statement is a(n) Relation.

44. A common approach to remove repeating groups from unnormalized tables is Flattening.

45. DROP TABLE CUSTOMER to eliminate the customer table from the database.

46. The SELECT operation is a filter that keeps only those tuples that satisfy a qualifying condition.

47. If every nonprime attribute in R is Fully functionally dependent on the primary key of R; then the relation R is in 2NF.

48. Internal schemas Contains the definitions of stored records.

49. In a table, a column contains duplicate value, if you want to list all different values only, then DISTINCT is used

50. A subclass can be a subclass in more than one class/subclass relationship; this is referred to as Specialization lattice.

51. No primary key value can be NULL; this is a Entity Integrity constraint.

52. Referential integrity constraints are Specified between two Relations.

53. Entity is a group of objects with the same properties, which are identified by the enterprise as having an independent existence.

54. In the Inner join on two relations R and S; a tuple is included in the result only if a matching tuple exists in the other relation.

55. A recovery system restores the database to a previous consistent state following a hardware or software failure.

56. If you were collecting and storing information about your online ordering company, customers would be considered a(n) Entity

57. Increased redundancy is not an advantages of the database approach:

58. Super key is an attribute, or set of attributes, that uniquely identifies a tuple within a relation. It may contain additional attributes that are not necessary for unique Identification.

1. What are the relationship degrees between any two entities in the relational model?
Or List and explain by example the three types of relationships in the relational database model.

one to one (1 to 1) : one manger manges one department
one to many (1 to n) : one manger manges many employees
many to many (n to m) : many students study many subjects

2. What is the difference between entity integrity and referential integrity constraints?

Entity integrity no attrubute primary key value can be null
Referential integrity is that foreign key value should match a key value of some tuple or be wholly null.
Another answer: entity integrity is concerned with the integrity of the primary key while referential integrity is concerned with the foreign key.

3. What is the difference between Subclass and superclass entities in the relational model?

Subclass: is an entity type that is a distinct subgrouping
Superclass: is an entity type that includes one or more distinct subgroupings

4. List and explain three functions of the DBMS.

Security system, which prevents unauthorized users accessing the database
Integrity system, which maintains the consistency of stored data
Concurrency control system, which allows shared access of the database
Recovery system, which restores the database

5. Discuss the limitations of the file based approach.

Redundancy and inconsistency : data can be repeated
Data isolation : data has multiple forms
Security problems : unauthorized users can access data

6. What is the difference between 1NF and UNF relations?

1NF has no repeating group
UNF does has repeating groups

7. What is the difference between Data Administrator and Database Administrator?

Data Administrator (DA): responsible for data resource management.
Database Administrator (DBA):responsible for the physical realization of the Database.

8. Define relational database.

Relational Database: is a collection of relations with distinct relation names / the database relationships are treated in the form of a table.

9. Define Database , DBMS and SQL .

Database:Is a collection of related data and a description of the data.
DBMS: Is a software used for define, manage, create and control the database.
SQL: Is structured query language, a language used for defining and designing and manipulating database.

10. What is meant by primary key and foreign key ?

Primary key The candidate key that is selected to identify tuples uniquely within the relation.
Foreign key An attribute, or set of attributes, within one relation that matches the candidate key of some other (possibly the same) relation.