SNS COLLEGE OF TECHNOLOGY, COIMBATORE-35
(AN AUTONOMOUS INSTITUTION)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
19CST202-DATABASE MANAGEMENT SYSTEM

UNIT-I

Introduction

2 Mark Question

1. Who is a DBA? What are the responsibilities of a DBA?

A database administrator (short form DBA) is a person responsible for the design, implementation, maintenance and repair of an organization's database. They are also known by the titles Database Coordinator or Database Programmer, and is closely related to the Database Analyst, Database Modeller, Programmer Analyst, and Systems Manager.
The role includes the development and design of database strategies, monitoring and improving database performance and capacity, and planning for future expansion requirements. They may also plan, co-ordinate and implement security measures to safeguard the database

2. What is a data model? List the types of data model used.

A database model is the theoretical foundation of a database and fundamentally determines in which manner data can be stored, organized, and manipulated in a database system. It thereby defines the infrastructure offered by a particular database system. The most popular example of a database model is the relational model.
types of data model used x Hierarchical model x Network model
- Relational model
- Entity-relationship
- Object-relational model
- Object model

3.Define database management system.

Database management system (DBMS) is a collection of interrelated data and a set of programs to access those data.

4.What is data base management system?

- A database management system (DBMS) is a software package with computer programs that control the creation, maintenance, and the use of a database.
- It allows organizations to conveniently develop databases for various applications by database administrators (DBAs) and other specialists.
- A database is an integrated collection of data records, files, and other database objects.
- A DBMS allows different user application programs to concurrently access the same database. DBMSs may use a variety of database models, such as the relational model or object model, to conveniently describe and support applications.
- It typically supports query languages, which are in fact high-level programming languages, dedicated database languages that considerably simplify writing database application programs.
- Database languages also simplify the database organization as well as retrieving and presenting information from it.

x A DBMS provides facilities for controlling data access, enforcing data integrity, managing concurrency control, recovering the database after failures and restoring it from backup files, as well as maintaining database security.

5.List any eight applications of DBMS.

a) Banking
b) Airlines
c) Universities
d) Credit card transactions
e) Tele communication
f) Finance
g) Sales
h) Manufacturing
i) Human resources

6.What are the disadvantages of file processing system?

The disadvantages of file processing systems are
a) Data redundancy and inconsistency b) Difficulty in accessing data
c) Data isolation
d) Integrity problems
e) Atomicity problems
f) Concurrent access anomalies

7.What are the advantages of using a DBMS?

The advantages of using a DBMS are
a) Controlling redundancy
b) Restricting unauthorized access
c) Providing multiple user interfaces
d) Enforcing integrity constraints.
e) Providing back up and recovery

8.Give the levels of data abstraction.

a) Physical level
b) Logical level
c) View level

9.Define instance and schema.

Instance: Collection of data stored in the data base at a particular moment is called an Instance of the database.
Schema: The overall design of the data base is called the data base schema.

10.Define the terms of Data base schemas.

1) Physical schema
2) logical schema.

Physical schema: The physical schema describes the database design at the physical level, which is the lowest level of abstraction describing how the data are actually stored.
Logical schema: The logical schema describes the database design at the logical level, which describes what data are stored in the database and what relationship exists among the data.

11.What is conceptual schema?

The schemas at the view level are called subschema's that describe different views of the database.

12.Define data model.

A data model is a collection of conceptual tools for describing data, data relationships,

data semantics and consistency constraints.

13.What is storage manager?
A storage manager is a program module that provides the interface between the low level data stored in a database and the application programs and queries submitted to the system.

14.What are the components of storage manager?
The storage manager components include
a) Authorization and integrity manager
b) Transaction manager
c) File manager
d) Buffer manager

15.What is the purpose of storage manager?
The storage manager is responsible for the following
a) Interaction with the file manager
b) Translation of DML commands in to low level file system commands
c) Storing, retrieving and updating data in the database

16.List the data structures implemented by the storage manager. . The storage manager implements the following data structure
a) Data files
b) Data dictionary
c) Indices

17.What is a data dictionary?
A data dictionary is a data structure which stores meta data about the structure of the database ie. The schema of the database.

18.What is an entity relationship model?
The entity relationship model is a collection of basic objects called entities and relationship among those objects. An entity is a thing or object in the real world that is distinguishable from other objects.

19.What are attributes? Give examples.
An entity is represented by a set of attributes. Attributes are descriptive properties possessed by each member of an entity set.
Example: possible attributes of customer entity are customer name, customer id, Customer Street, customer city.

20.What is relationship? Give examples
A relationship is an association among several entities.
Example: A depositor relationship associates a customer with each account that he/she has.

21.Define the terms i) Entity set ii) Relationship set
Entity set: The set of all entities of the same type is termed as an entity set.
Relationship set : The set of all relationships of the same type is termed as a relationship set.

22.Define single valued and multi valued attributes.

Single valued attributes: attributes with a single value for a particular entity are called single valued attributes.

Multi valued attributes : Attributes with a set of value for a particular entity are called multivalued attributes.

23.What are stored and derived attributes?

Stored attributes: The attributes stored in a data base are called stored attributes.

Derived attributes: The attributes that are derived from the stored attributes are called derived attributes.

24. What are composite attributes?

Composite attributes can be divided in to sub parts.

25. Define null values.

In some cases a particular entity may not have an applicable value for an attribute or if we do not know the value of an attribute for a particular entity. In these cases null value is used.

26. Define the terms i) Entity type ii) Entity set

Entity type: An entity type defines a collection of entities that have the same attributes.

Entity set: The set of all entities of the same type is termed as an entity set.

27. What is meant by the degree of relationship set?

The degree of relationship type is the number of participating entity types.

28. Define the terms.

i) Key attribute ii) Value set

Key attribute : An entity type usually has an attribute whose values are distinct from each individual entity in the collection. Such an attribute is called a key attribute.

Value set: Each simple attribute of an entity type is associated with a value set that specifies the set of values that may be assigned to that attribute for each individual entity.

29.What does the cardinality ratio specify?

Mapping cardinalities or cardinality ratios express the number of entities to which another entity can be associated. Mapping cardinalities must be one of the following:

- One to one
- One to many
- Many to one
- Many to many

30. Define weak and strong entity sets.

Weak entity set: entity set that do not have key attribute of their own are called weak entity sets. Strong entity set: Entity set that has a primary key is termed a strong entity set.

31.What are the two types of participation constraint.

x Total: The participation of an entity set E in a relationship set R is said to be total if every entity in E participates in at least one relationship in R.

x Partial: if only some entities in E participate in relationships in R, the participation of entity set E in relationship R is said to be partial.

32. Define the terms i) DDL ii) DML

DDL: Data base schema is specified by a set of definitions expressed by a special language called a data definition language.

DML: A data manipulation language is a language that enables users to access or manipulate data as organized by the appropriate data model