Computer 12

Chapter 2 (Basic Concepts and Terminology of Databases)

Short Questions

Note: There are No long questions from this chapter in board exam

Q 1. Define field, record and file.

Ans.

Field: A field is a unit of data consisting of one or more character i.e., Employee number or Employee name in a record of the employee.

Record: A collection of related data items treated as a single unit is called a record. It is also called tuple.

File: A collection of related records treated as a single unit is called a file or a data set.

Q 2. What are Fixed Length Fields and variable Length Fields?

Ans. Fixed Length Field contains predefined number of characters (Bytes). Data entered in fixed-length field cannot exceed allocated length of the field. If the data entered in fixed-length field is smaller than length, the remaining space will be empty. Its drawback is Wastage of storage space.

Example: - Suppose a country field is specific fixed length field 20 characters

Variable Length Field does not contain predefined number of characters (Bytes). It Occupies the space according to the data entered by the user.

Example: Suppose user enter "PAKISTAN" in country field. It will occupy only eight characters.

Q 3. Define relation/table.

Ans. In relational database the table in which data is stored is called a relation. Collection of rows and column is called table. Each intersection of a row and column is called cell. Table contains the descriptive information about an entity. Table is also called relation.

Q 3. List two properties of a relation. Ans. Properties of a relation/table.

- No duplicate rows exist
- The order of column is insignificant.
- The order of row is insignificant.
- All the cells should have atomic (single) value.

Q 4. What is an Entity?

Ans. Anything about which we want to store data is called entity. It can be a person, place or event etc. Entity always has a unique name with in a domain.

Q 5. What is the use of views?

Ans. A view is virtual table that displays the data from one or more tables. Same data of database can be viewed in different ways. It is created by using SQL query. Its Purpose is to keep data safe and secure from unauthorized and illegal use. It displays data according to user requirements

Q 6. What is a key?

Ans. Key is an Attribute or set of attributes that uniquely identifies a tuple in relation. It is Defined in relations to access the stored data quickly and efficiently. It is also Used to create relationship between different relations or tables. For example, student registration number can be considered as a key in student table.

Q 7. Define primary key.

Ans. In a relation the attribute or a combination of attributes that uniquely identifies a row or a record. e.g. A social security number, ISBN, student roll number, etc.

A relation/table can have only one primary key. Each value in primary key attribute must be unique. Primary key cannot contain null values.

Q 8. Define composite key.

Ans. Composite key consists of two or more than two attributes/field. It is Used in the situation where a single column is unable to uniquely identify a record in a relation. For example, the combination of house number and street might qualify as a composite key.

Q 9. Define candidate key and alternate key.

Ans. There can be more than one keys or key combinations that qualify to be selected as primary key these are called candidate keys.

In a relation there can be only one primary key at a time. Rest of the keys or key combinations are called **alternate keys**.

For example, In a "Students" table, {StudentID}, {Email}, and {RollNumber} are candidate keys, any of which could be chosen as the primary key, while the unselected keys serve as alternate keys.

Q 10. Define foreign key.

Ans. A foreign key is an attribute or set of attributes in a relation whose values match a primary key in another relation. The relation in which foreign key is created is known as **dependent**

Last Hope Study.com We focus on Exam: Notes that are Important and Easy

relation or child relation. The relation to which the foreign key refers is known as **parent relation**. For example, In the "Orders" table, the CustomerID is a foreign key that(CustomerID) is primary key in the "Customers" table, establishing a relationship where "Orders" depends on "Customers."

Q 11. Define secondary key.

Ans. A secondary key is a non-unique field that is used as a secondary or alternate key. Sometimes records are required to be accessed by a field other than the primary key. In these situations, another key that is used is called secondary key or alternate key. An attribute “City” in Student relation can be used to display all students who live in specific city.

Q 12. Define sort/Control key.

Ans. A field or a set of fields in a record that dictates the sequence of the file according to our requirement. For example, the sort key NAME arrange the table data alphabetically by name NAME is the minor sort key.

Q 13. What is the use of index file?

Ans. Indexes are stored in index file. DBMS uses index files to speed up the sorting and searching operations. In a "Students" table, the registration number, serving as a primary key, can be indexed to enhance the speed of search and retrieval operations.

Q 14. Who is end user?/what is the role of end user in DBMS?

Ans. End users interact directly with a database without technical expertise, using interfaces for tasks like querying data and entering information. They don't write code but need basic software knowledge. For example, a receptionist using a patient management system to schedule appointments and input data through forms without programming is end user.

Q 15. Who is data administrator/ what is the role of data administrator in DBMS?

Ans. The DA department is responsible for the definition, organization, supervision and protection of data in order to provide good quality, shareable and accessible data throughout the enterprise. The Data Administrator manages a staff that is responsible for establishing and implementing the Data Administration Program.

Q 16. Who is database administrator? / what is the role of database administrator in DBMS?

Ans. A database administrator (DBA) is a person who is responsible for the environmental aspects of a database. In general, these include:

•Recoverability: Creating and testing backups.

•Integrity: Verifying or helping to verify data integrity.

•Security: Defining and/or implementing access controls to the data.

•Availability: Ensuring maximum up time.

•Performance: Ensuring maximum performance given budgetary constraints.

•Development and testing support: Helping programmers and engineers to efficiently utilize the database.

Q 17. Discuss the data manipulation in DBMS system?

Ans. Data manipulation of database management system refers to Stores and manipulates data in tables or relations

- Tables or relations may be connected with each other
- Used index to search data quickly
- Used SQL to perform different operations
- Provides facility to insert new data in database
- Provides facility to modify existing data in database
- Provides facility to retrieve existing data from database