

DATABASE MANAGEMENT SYSTEM

1) Define the term data and information with suitable examples.

Ans: Data is the collection of raw facts, symbol or unprocessed mean of information which does not give the proper meaning. Example: Ram, 15, 10, student.

Information is the meaningful result obtained after processing data which gives proper meaning. Example: Ram is a 15 years boy, study in grade 10.

2) Define database? Write some examples of database.

Ans: Database can be defined as the organized collection of data which can be easily accessed, managed and updated.

Some examples of database are student's record, mark ledger, flight schedule, telephone directory, dictionary etc

3) Write the advantages of electronic/ computerized database.

And: The advantages of computerized database are as follows:

- a) Computerized database allows storing large volume of data in a small device.
- b) Computerized database allows searching specific data quickly.
- c) Computerized database reduces data redundancy.
- d) Computerized database allows advanced filtering of data.

4) What is Database management system (DBMS)? Give some examples.

Ans: DBMS is software which is used to manage data, manipulate them and provide the desirable information from the database. Some examples of database management system are Dbase, FoxPro, Sybase, Ms-Access, Oracle, My Sql etc

5) Write the advantages of DBMS.

Ans: The advantages of DBMS are:-

- a) Easy for editing, adding and removing of data.
- b) Large volume of data can be store in small device.
- c) It allows sharing data among different users and programs.
- d) It reduces data redundancy.

6) Write the disadvantages of DBMS.

Ans: The disadvantages of DBMS are:-

- a) Data security problem may be occurred.
- b) Qualified persons are required to operate.
- c) Initial setup cost is high.
- d) Complexity of backup and recovery.

7) Write the differences between Database and DBMS.

Ans: The difference between database and DBMS are:-

Database	DBMS
a) It is a collection of data.	a) It is software which manages data which are in database.
b) It is a part of DBMS.	b)It is software system which contains database.
c)Examples: salary sheet, student's record etc	c)Examples: Ms-Access, FoxPro, Oracle etc

8) List the different types of DBMS?

And: The different types of database are as follows. They are

- a) RDBMS(Relational Database Management System)
- b) OODBMS(Object oriented database management system)
- c) Centralized database management system
- d) Distributed Database Management System

9) What is Relational Database Management System? Give some examples.

Ans: Relational Database Management System is the most widely used software or programs that stores data in multiple linked tables on the basis of a key field. Some examples of RDBMS are MS-Access, Oracle, My SQL etc.

10) Write the features of RDBMS?

Ans: The features of RDBMS are as follows:

- a) It supports multiple tables to store data.
- b) It allows creating and setting relationship among multiple tables.
- c) Analyse and modify the data easily with queries.
- d) Allows sharing data among different users and programs.
- e) Make customized data entry forms.

11) What is MS-Access?

Ans: MS-Access is a Relational Database Management System developed by Microsoft Corporation which is used to store and manipulate large amount of data in the form of tables.

12) List the different types of object in MS-Access.

Ans: The different types of object in MS-Access are:-

- a) Table
- b) Query
- c) Form
- d) Report
- e) Macro
- f) Module

13) What is table? List the different ways to create table.

Ans: Table is the object of MS-Access which stores data in the form of rows and column.

We can create table in following ways:

- a) Design view
- b) Using wizard
- c) By entering data

14) List the different data types used in MS-Access.

Ans: The different data types used in MS-Access are:-

- a) **Text** – Text data type is the **default data type** of MS-Access which stores alphanumeric characters. The maximum storage size of text data type is 255 characters and default size is 50.
- b) **Memo** – Memo data type also stores alphanumeric characters up to 65,535 characters. It is used for long text such as remarks, comment etc.
- c) **Number** – It stores the numeric value. Long integer is the default number data type. It has different subparts:-
 - i) **Byte**- use for integer range from 0 to 255. Storage is 1 byte.
 - ii) **Integer** – use for integer that range from -32768 to 32767. Storage is 2 Bytes.
 - iii) **Long integer** – use for integer value from -2,147,483,648 to 2,147,483,647. Storage is 4 Bytes.
 - iv) **Single** – use for floating point value up to 7 significant digits. Storage is 4 Bytes
 - v) **Double** – use for numeric floating point values up to 15 significant digits. It stores 8 Bytes.
- d) **Date/Time** – It stores only date and time value. Its storage size is 8 bytes.
- e) **Currency** – It stores only monetary value which is related to money. Its storage is 8 bytes.
- f) **Auto number** - It generates unique sequential numbers automatically. Its storage size is 4 bytes (in 2003 version) and 16 bytes (in 2007 version).
- g) **Yes/No** – It stores Boolean values that are 0 or 1. Its storage size is 1 bit.
- h) **OLE object** – It stores pictures, graphs, sound, video etc. Its storage size is 1 GB.
- i) **Hyperlink** – It stores web/ email and other hyperlink object of documents. It stores up to 2048 characters (in 2003 version) and 1GB (in 2007 version).
- j) **Attachment** – It is used to attach any documents or any other file. It stores up to 2GB compressed.
- k) **Lookup Wizard** – It creates a list box that allow us to select a value. It stores up to 4 bytes or 255 characters per value.

15) What is field property? List the different types of field properties of MS – Access.

Ans: The additional features provided to each field data type is called field property. The different types of field property are:

- a) **Field size**- It allows a user to set the maximum number of characters that can be stored in a field.
- b) **Format** – It allows a user to specify the appearance of the value when displayed.
- c) **Input mask** – It is the way or patterned of data to be entered.
- d) **Caption** – It allows a user to set an alternative name for the field. IT can contain up to 2048 characters.
- e) **Default value** – It is the value which automatically entered when the new record is added.
- f) **Validation rule** – It is the condition or expression which limits the data entry value.
- g) **Validation text** – It is the error message to be displayed when the data enter in the field is not matched to the validation rule.
- h) **Required** – It specifies whether data must be entered in a field or not.
- i) **Indexed** – It speed up searching and sorting of data based on a field.

16) What is primary key? Write its uses/ importance.

Ans: Primary key is a special field in the table that uniquely identifies each record from the database. The primary key does not accept duplicate value for the field and it does not allow a user to leave the field blank or null.

The importance of primary key are:-

- a) To identify each record of a table uniquely within very short time.
- b) To set the relationship between tables.
- c) To reduce data redundancy.

17) What is data redundancy? How can it be reduced?

Ans: Data redundancy is the repetition of same data in the particular field again which is undesirable. It can be reduced by using primary key. It can be reduced by using primary key or by normalization of database.

18) What is foreign key?

Ans: Foreign key is a field in a relational table that matches the primary key column of another table.

19) What is Relationship? List different types of relationship with examples.

Ans: A relationship is a link between two or more table.

The different types of relationship with examples are:-

- a) One to one (example Driver and car)
- b) One to many (example Teacher and students)
- c) Many to many (Books and readers)
- d) Many to one (Students and school)

20) What is Query? Write the importance and use of Query?

Ans: Query is an object of MS-Access that is used to view, retrieve, change and analyse records from a table or multiple linked tables based on specified condition.

The uses of Query are as follows:-

- a) It allows sorting and filtering the data.
- b) To perform mathematical calculations among numeric value.
- c) It display the records from different tables based on the criteria.
- d) It allows viewing, changing and analysing the data.
- e) Mass update can be done in just one operation.

21) Explain the different types of Query?

Ans: The different types of query are as follows:

- a) Select query – This query allows retrieving and displaying the selected records from one or more linked table according to the specified criteria.
- b) Advance sort/ filter query – This query allows performing advance sorting and filtering data from the database with multiple criteria.
- c) Cross tab query – This query allows to perform calculations as well analyse the data on database.

- d) Action query – An action query is a type of query that allows updating, adding and removing mass records in just one operation. The different types of Action query are:-
- i. Delete query – It is used to delete the group of records from the table.
 - ii. Update query – It is used to change the group of records in one or more table. Eg Increase 5 marks of all students using update query.
 - iii. Append query – It is use to add the group of records.
 - iv. Make-Table query – It is use to create a new table from the existing one or more tables.

22) List the different ways to create a query.

Ans: The different ways to create query are:-

- a) Using wizard
- b) Using design view

23) What is form? Write the advantages/ uses of form.

Ans: Form is an object of MS-Access which is design to enter, edit, modify and display the data in one of more tables.

The advantages of form are as follows:-

- a) Forms are easier to enter data and perform calculations.
- b) It allows the easy modification of particular data.
- c) It is used to display complete data at once.
- d) It is used to perform extensive editing of data using macros and VB procedure.

24) Write the advantages of form over table.

Ans: The importance of form over table are as follows:-

- a) Forms are easier to enter data and perform calculations.
- b) It allows the easy modification of particular data.
- c) It is used to display complete data at once.
- d) It is used to perform extensive editing of data using macros and VB procedure.

25) What is report? Write the importance/advantages of report.

Ans: Report is the object of MS-Access that is used to present the data of processing from a table or query in order to print them.

The advantages of report are as follows:-

- a) To prepare complete output of the processing a database.
- b) To preview the database on screen before printing finally.
- c) To create and produce attractive invoices, purchase order, mailing and labels.

26) What is filtering and data sorting?

Ans: Filtering is the process of extracting the data from one or more table according to the given criteria.

Data sorting is the process of arranging the data either in ascending or in descending order based on the particular key field.

27) Write the differences between text and memo.

Ans: The differences between text and memo are:-

Text	Memo
a) It allows storing alphanumeric characters up to 255 characters long.	a) It allows storing long and descriptive data up to 65,535 characters long.
b) It can be set as primary key.	b)It cannot be set as primary key.

28) Write the differences between design view and wizard.

Ans: The differences between design view and wizard are:-

Design view	Wizard
a) It takes more time to create.	a) It saves our time to create.
b) We can make our own design.	b)We can choose formats from pre-mode one.

29) Write the appropriate data type for the following fields.

- | | | |
|----------------------------|---|-------------|
| a) Price | - | Currency |
| b) Employees description | - | Memo |
| c) Gender | - | Yes/No |
| d) Serial Number | - | Auto number |
| e) Salary | - | Currency |
| f) Images | - | OLE object |
| g) Date of birth | - | Date/Time |
| h) Email Id | - | Hyperlink |
| i) Phone number | - | Number/Text |
| j) Joining date | - | Date/Time |
| k) Amount | - | Currency |
| l) Sex | - | Yes/No |
| m) Marital status(married) | - | Yes/No |
| n) Book id | - | Number |
| o) Age | - | number |
| p) Mark in English | - | Number |
| q) Word document | - | Attachment |
| r) Name | - | Text |
| s) Address | - | Text |

30) Explain the different elements of database.

Roll	Name	Address
1	Aayusha Gyawali	Nayamill
2	Ashwini Pandey	Butwal
3	Janak Panthi	Palpa

The different elements of database are as follows:-

- Field – Field is the topic name or heading under which records are stored. It is the smallest unit of database. It is also known as attribute/ column. Field name can be up to **64 characters** long. Examples are Roll, Name, and Address.
- Record – A record is a piece of information under the related field about any person, place, organization or anything. It is also the collection of multiple related fields in a row. Examples are 1, Ashwini Pandey, Janak etc.
- Tuple – The row wise collection of records is called tuple. Examples are 1, Aayusha Gyawali and Nayamill.
- Table – A table is the collection of rows and column which stores data.