

**Class: 8<sup>th</sup>****Subject: Computer Science****Lesson No 3. [ Tables in Microsoft Access]*****Points at a glance:***

- i. A database is an organised collection of related data so that it can be easily accessed, managed and updated.
- ii. A DBMS based on the relational data model stores data in the form of tables and is called Relational Database Management System (RDBMS).
- iii. The duplication of data is referred to as data redundancy.
- iv. A Primary key is a field or combination of fields that uniquely identifies the records in a table.
- v. A table can have only one primary key.
- vi. By default, Access sets the first field in the table as the primary key field.
- vii. We can work on a table in two views – Design view and Datasheet view.
- viii. In the design view of the table, we can enter the field names, their data types and description. We can also set the field properties.
- ix. The design view window is divided into two panes: Field grid pane and Field Properties pane.
- x. Field grid pane is used for entering field names and their data types. We can also give an optional description about each field in this pane.
- xi. Field properties pane is used to set properties for the fields in the table.
- xii. Datasheet view is the default view of MS Access. In this view we can enter the data in the table.
- xiii. Functions of DBMS:
  1. It reduces data redundancy.
  2. It helps in providing consistent data. The data appearing more than once is updated automatically in the datasheet.
  3. It gives access to the data to authorised users only. Thus, it protects the data from unauthorised users.
  4. Multiple users are given the access to the data. Thus, it can be shared depending upon their requirement.
  5. It provides backup and helps in data recovery in case of system failure.

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## Exercises [ Formative and Summative ]

### Solved Textual Questions

1. Tick (✓) the correct answer:
  - a. Value
  - b. Record
  - c. 65,535
  - d. Memo
  - e. F6
2. Fill in the blanks
  - a. Database
  - b. Record
  - c. Tables, Rows, Columns
  - d. Specific piece of information
  - e. .accdb
  - f. Unique
  - g. Primary Key
  - h. General
3. Answer the following questions
  - a. **DBMS:** A Database Management System (DBMS) is a software program that enables us to create, modify and extract data from a database.  
A DBMS is useful in the following ways:
    1. Since data retrieval and modification is faster with a DBMS, its use saves programmer's time in developing and maintaining databases.
    2. It facilitates the sharing of data.
    3. Reduced data redundancy
    4. Reduced update on errors and increased consistency
    5. Improved data access to users
    6. Improved data security
  - b. Microsoft Access is the most popular and powerful RDBMS (Relational Database Management System) that serves as an integral part of the Microsoft Office Suite application. Microsoft Access is a powerful database software that allows us to create, manage and process data in the form of a table.
  - c. **Record:** A row in a table is called a record.  
**Field:** A column in a table is called a field.

**Value:** Each specific piece of information in a table is known as value.

- d. **Primary Key:** The Primary Key is the column or attribute in a table which identifies a record uniquely. A primary key is required for every table to identify records uniquely.
- e. Data types are used to declare the fields of a table. A data type specifies the type of data that the field can contain. The various data types in MS Access are as follows:
  1. **Short Text:** The fields with Short Text data type can store text or a combination of text and numbers such as names, addresses and postal codes. It can store up to 255 alphanumeric characters.
  2. **Long Text:** The fields with Long Text data type can store lengthy texts, that is, up to 65,535 characters.
  3. **Number:** The fields with this data type can store numbers (integers and decimal values)
  4. **Data/Time:** The fields with this data type can store date and time values.
  5. **Currency:** The fields with this data type can store currency values (Monetary values) and then display them in different formats.
  6. **Autonumber:** The Autonumber data type generates a sequential number whenever a new record is added to a table. In other words, the fields with this data type store integer that are incremented automatically when a new row or record is added to a table.
  7. **Yes/No:** The fields with this data type can store only one of the two possible values such as Yes/No, True/False, or On/OFF.
  8. **Hyperlink:** The fields with this data type can store links to websites or email addresses.
- f. The field properties let us have more control on data that can be entered in a particular field. Some of the field size properties are listed below:
  1. **Field size:** This property can be set for fields with Short Text or Number data types.

For Text data types, we can use this property to set the maximum number of characters for a text field.

For Number data types, the user can choose from one of the following options – Byte, Integer, Long Integer, Single, Double and Decimal. These options determine the range of values and size of the field.
  2. **Format:** This property controls the manner in which data gets displayed.

3. **Decimal Places:** This property is valid for Number and currency data types. It is used to specify the number of digits to be displayed to the right of the decimal point. Its value may vary from 1 to 15.
4. **Default value:** This property is used to specify a value that gets displayed automatically when the records are created.
5. **Validation Rule:** This property is used to put conditions on the data that can be entered in a field. A validation rule is used to force a field entry to meet a logical test of its validity . By validation rules, we can ensure that the correct value is entered in the field.
6. **Validation Text:** This property is used to display an error message when the validation rule gets violated.
7. **Required:** This property can have only two values - Yes or No. It should be set to Yes if you want that a particular field should always get a value during data entry.