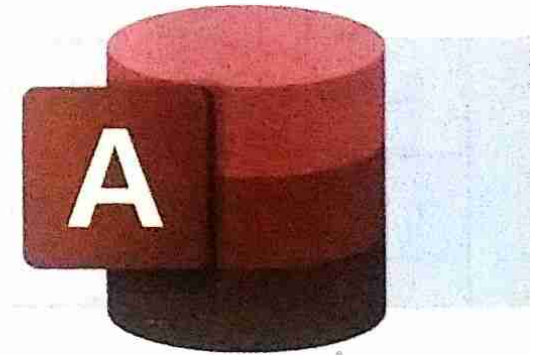


Introduction

A database is an organised collection of data and information. In a database, the data is organised in the form of rows and columns. MS Access allows us to manage the information in one database file. For example, our teacher always keeps record of marks of each student by maintaining a database. Within the file, one can use:

- > Tables to store the data.
- > Queries to find and retrieve specific data of interest.
- > Forms to view, add and update data of interest.
- > Reports to analyse or print data in a specified layout.



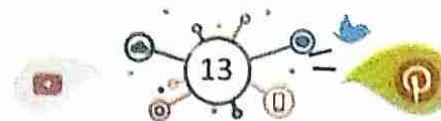
Database Management System

Database Management System (DBMS) is a system software for creating and managing database. The DBMS provides users and programmers with a systematic way to create, retrieve, update and manage data. Some examples of DBMS are MYSQL, Microsoft Access, SQL Sever, Oracle and FoxPro.

Advantages of DBMS

DBMS is preferred due to the following advantages:

- > **Sharing of data:** Different users can use the same database to access the data according to their need.
- > **Data redundancy:** Data redundancy means duplication of data. It avoids duplication of data and ensures that there is only one instance.



- > **Data Inconsistency:** It helps to avoid data inconsistency. It means if a single database is used by multiple users then it also ensures the same data is for all the users. For example, if the two departments (HR and IT) access the data simultaneously, then only one department will see the updates by the other department. DBMS solves this issue.
- > **Confidentiality:** The DBMS can ensure different views for the different users of the database. This keeps the confidentiality of the data.
- > **Highly securable:** Database can be secured by assigning a lock to it by using keys.)

Database Concepts

A database is a collection of information that is related to a particular subject or purpose. The data in a databases is organised so that it can easily be accessed, managed and updated.

Database is usually organised into tables. Tables are the data storage facilities in MS Access. Each table contains rows called records and columns called fields.

A column defines one piece of data stored in all rows of the table. The value of a column within a record is called a field.

A row contains one item for each column in the table. Each row is called a record. Every record in a given table has the same fields, in the same order. A file is a collection of related records.

For each data item in the database, its type has to be specified. The data type of a field determines the type of data the field can hold. A field can have only one data type.

Fields

Field 1 S. No.	Field 2 Name	Field 3 Address	Filed 4 Phone Number
1.	Puneet Gupta	31/2, Chander Nagar	011-24581180
2.	Amit Tyagi	2/50, Ashok Vihar	011-22575124
3.	Richa Kapoor	3/31, Gandhi Nagar	011-26635874

Database Objects

^{ES} An Access database can contain six types of objects which are tables, queries, forms, reports, macros, and modules. These objects are called database objects. Database objects are created to input, edit, retrieve, display or print data. The names of all the database objects are displayed in the Navigation pane.

Object Type	Object Purpose
Table	This is used to store data about a particular subject in rows and columns.

Query	A query is a question asked about the data stored in the database.
Form	This is used to view, enter and edit data.
Report	This is used to format, summarise and present data in the tables.
Macro	It enables us to automate tasks and add functionality to your database without writing codes.
Module	It enables us to add automation and other functionality to your database by writing code in the Visual Basic for Applications (VBA) program.

Starting MS Access

E2
To start MS Access, follow these steps:

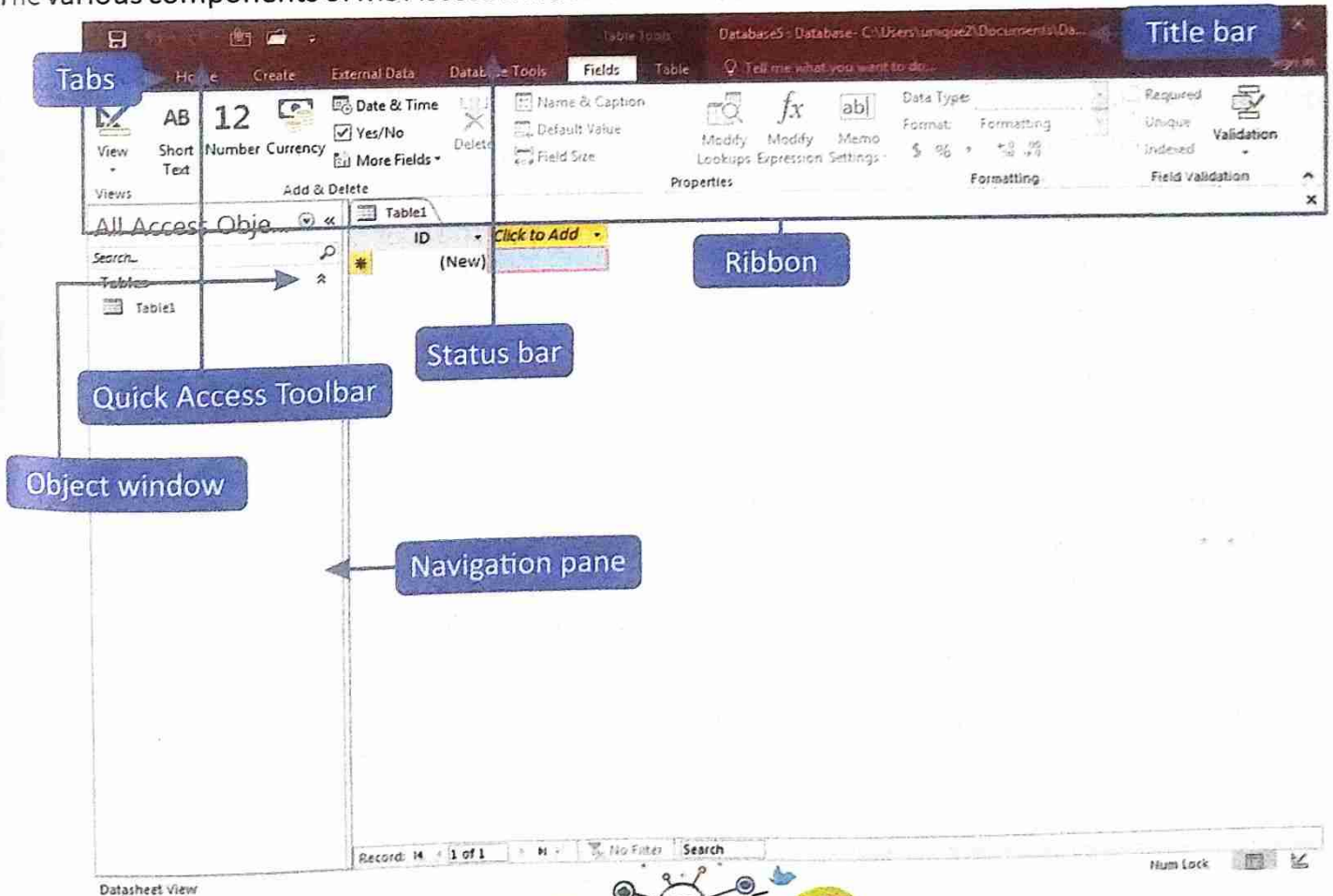
Step 1: Click on the Start button.

Step 2: Click on the All Programs.

Step 3: Select Microsoft Office and then Microsoft Office Access 2016. The MS Access 2016 window will appear. Now, we can create a new database or open an existing one.)

Components of MS Access

The various components of MS Access window are as follows:



Components	
Title bar	It appears at the top of the MS Access window. It displays the name of the database and the program. The buttons on the right side of the Title bar are used to minimize, maximize, restore and close the program window.
Quick Access Toolbar	It appears on the left side of the Title bar and contains frequently used commands that are independent of the display on the Ribbon.
Tabs	They are located below the Title bar. They contains a set of commands.
Ribbon	It extends across the top of the program window, directly below the Title bar and consists of a set of tabs, each of which contains groups of related commands.
Navigation pane	It appears on the left side of the program window and displays a list of all the objects in a database.
Object window	It appears below the Ribbon and displays open database objects.
Status bar	It appears at the bottom of the program window and displays information about the database and provides access to certain program functions.

Creating An Access Database

Before we create a database in MS Access 2016, we must remember the following things:

- > purpose of the database
- > user of database
- > tables (data) of the database
- > queries that the user needs
- > forms and reports

MS Access 2016 provides the following ways to create a database:

- > Creating a blank database
- > Creating a database by using a template
- > Creating a database by downloading a template from MS Office online.

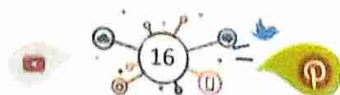
Creating a Database by using a Template

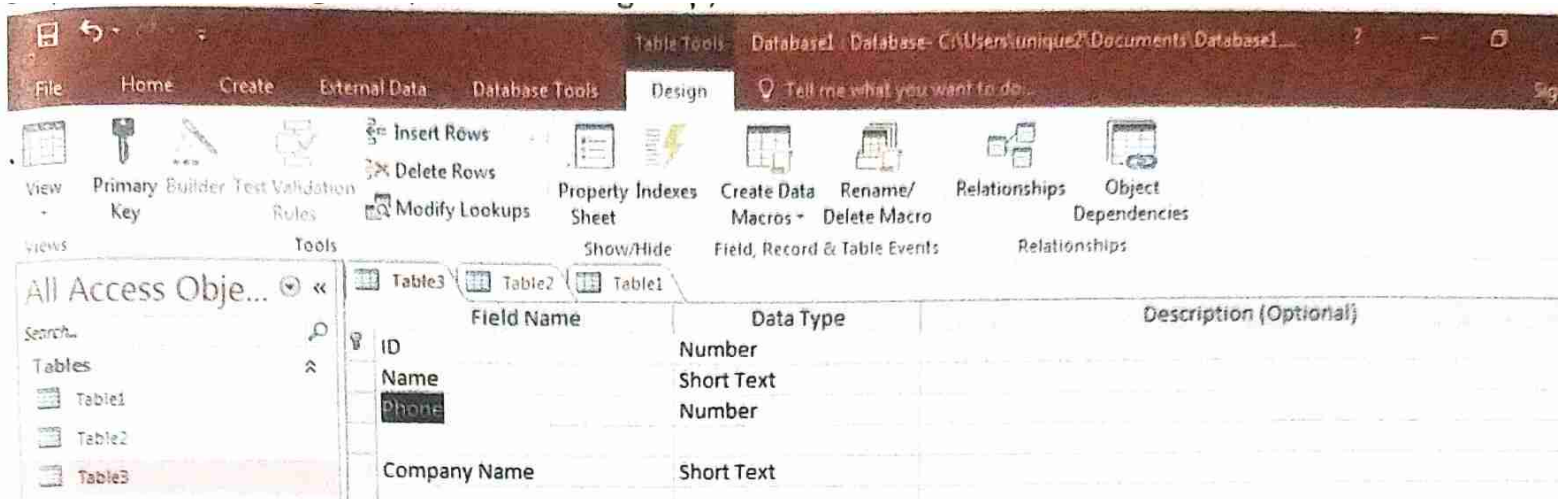
A template is a ready to use database that contains tables, queries, forms and reports needed for performing a specific task.

Several templates are displayed on the Getting Started with Microsoft Office Access page. We can also download templates from the Microsoft Office website.

To create a database using by a template, follow these steps:

- Step 1: Click the Local Templates option from the Template Categories on the left pane.
- Step 2: From the middle pane, choose the type of database you want.
- Step 3: Specify the name for the database in the File Name box.





Reordering Fields

While the order of the fields does not affect how the table functions within the database, but it is a good practice to group fields together in some reasonable order so that they are easy to find and to place the Primary key fields at the top of the list.

To move a field, follow these steps:

Step1: In the Design view select the fields you want to move.

Step2: Press the left mouse button and drag the field to the desired location. You will find a line appearing between the fields as you drag over them.

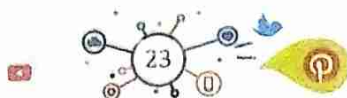
Step3: Release the mouse button when the selected field will be placed at the new location.



- MS Access is a database management system software that can be used to store data, add, modify or delete, find data, solve queries about the data and produce reports.
- Database usually are organised into tables.
- A column in the table, called a field, defines one piece of data stored in all rows of the table. A row in the table, called a record, contains one item for each column in the table.
- Objects that can be a part of the database are tables, queries, forms, reports, macros and modules.



- E3
- (Database : A collection of information that is related to a particular subject or purpose
 - Table : A collection of data about a specific topic
 - Record : It contains one item for each column in the table
 - Field : It defines one piece of data stored in all rows of the table



12/7/2021



A. Tick (✓) the correct answer.

- 1. is a software used to create and manage a database.
 - a. DCBS
 - b. DBMS
 - c. DDM
- 2. Data redundancy means duplication of
 - a. facts
 - b. data
 - c. software
- 3. The value of a column within a record is called a
 - a. record
 - b. value
 - c. field
- 4. appears at the bottom of the program window and displays information about the database.
 - a. Quick Access Toolbar
 - b. Title Bar
 - c. Status Bar

Write 'T' for true and 'F' for false statements.

- 1. All MS Access database files have the extension mdb.
- 2. All fields are of Text data type in a table.
- 3. Each row in the database table represents a field.
- 4. DBMS does not avoid duplication of data.
- 5. Databases are usually organised into tables.

F
T
F
F
T

Fill in the blanks with the help of the words given in the box.

reports navigation pane data type actions tables

- 1. A of a field determines the types of data the field can hold.
- 2. are used to store data in rows and columns.
- 3. are used to summarise data.
- 4. display a list of all the objects in database.
- 5. A macro is a set of created to automate common tasks.



D. Answer is one word.

1. It is a set of rows and columns.
2. It is used to attach files.
3. It is used for numeric values.
4. It is located below the Title Bar.
5. It contains a set of commands.

Tables.....
Attachment.....
Number.....
Tab.....
Tabs.....

E. Answer the following questions.

1. What are the advantages of using a DBMS?
2. Write steps to start MS Access 2016.
3. What is the relationship between a database, table, record and field?
4. Explain any three components of MS Access window.
5. List the various types of objects that a database can have.