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Introduction To Microsoft Access 2016

Learning Outcomes

- Databases
- Structure Of A Database
- First step To Microsoft Access 2016
- Features Of Ms Access
- Component Of Ms Access 2016
- How To Create A Database?
- Views & Creating A Table, Primary key
- Entering Data In A Table
- Adding And Deleting Records
- Sorting Data Values In A Table
- Exiting Access & Opening Existing Database

Have you ever thought, about which software is being used in any company to store your records? Have you ever thought, about which software is used to store the details of the patients and doctors are stored in a hospital? Have you ever thought about which software the details are stored for the tickets sold for any show? The answer to the questions asked above is “**DATABASE**”. Now again a question arises what is a **DATABASE**?

Let's know more about it.

Database



A database is an organized collection of data. A database is an electronic system that allows data to be easily accessed, manipulated, and updated.

Types Of Databases: There are mainly two types of databases:

Flat File Database: When the data is stored in the form of a plain text file and cannot incorporate multiple tables. For example, Microsoft excel.

Relational Database: When the data is stored in a form where the data items are related to one another. It supports multiple tables which organize the text in rows and columns. For example Microsoft Access, Microsoft SQL, and Oracle.

Structure of Access Database:

Databases in Access are composed of four objects: **tables, queries, forms, and reports**. Together, these objects allow you to enter, store, analyze, and compile your data however you want.

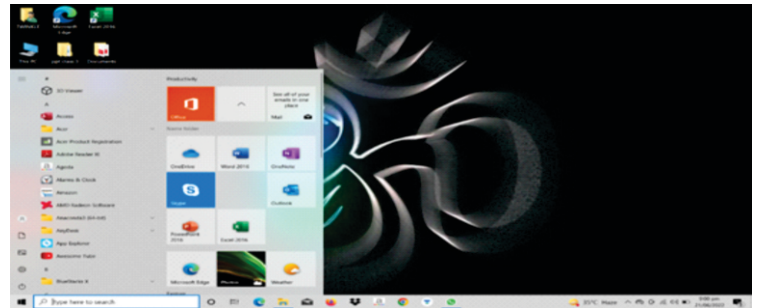
- 🌈 **Tables:** Store your data in your database.
- 🌈 **Queries:** Ask questions about information stored in your tables.
- 🌈 **Forms:** Allow you to view data stored in your tables.
- 🌈 **Reports:** Allow you to print data based on queries/tables that you have created.

First Step To Microsoft Access 2016

Let's start with MS Access

Method 1: Click Start > Scroll down and click on the Access icon.

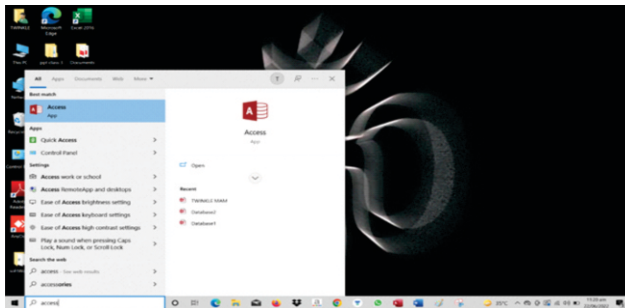
Method 2: Type Access in the Search Box
> Click on the Access icon.



Searching Ms Access

Method 3: Double click the Access shortcut icon on the desktop, if available.

The default MS Access start window appears on the screen. It shows various templates to create a database. We will choose the Blank desktop database to create our database file.



Opening Ms Access

Features Of Microsoft Access

- 🌐 **Startup Screen:** MS Access opens with new startup screen that provides easy access to new database templates, recent databases and their locations in the system.
- 🌐 **Compatible with Windows 10:** MS Access 2016 is fully compatible with Windows10 operating system. It also incorporates the latest touch technologies designed for laptop, tablet and mobile devices.
- 🌐 **Cloud Access:** MS Access also facilitates cloud storage. This way the data can be saved safely and securely online.
- 🌐 **More Database Options:** MS Access 2016 provides a wide range of pre-designed templates suitable for different kinds of work such as creating tables.
- 🌐 **Backup Data Option:** It protects your database in the event of a hardware failure, or other data loss. It keeps backup of access databases so that the information is not lost.

Do you know?

When was Microsoft office invented?

It was first announced by Bill Gates on August 1, 1988, at COMDEX in

- 🌐 **Linking to Account:** MS Access 2016 provides an option to sign in to Office 365 to access all your databases. It also manages the Office Theme.

Component Of MS Access 2016

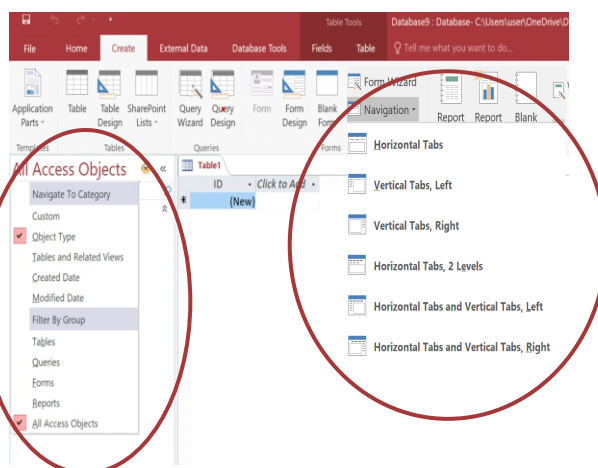
Let us get familiar with various components of the Access 2016

- 🌐 **NAVIGATION PANE:** This pane is present on the left side of the Access window. It displays the name of the objects used in the database, such as Tables, Queries, Forms, Reports, etc.

- 🌐 **NAVIGATION BUTTONS:** As the name suggests, it helps in navigating through the records. The Navigation buttons display the current record number in an object.

- 🌐 **OBJECT TABS:** The objects that you have opened in a database appear right above the work area in a tabbed form. Clicking on any tab displays the contents in the work area. To close the current tab, click on the cross button on the right end of the bar. keyboard, mouse can also be wired or wireless.

- 🌐 **TELL ME WHAT YOU WANT TO DO:** It is a new feature, which can be used to get quick help on topics that you are looking for or the commands that you want to use in your document.



Components of Ms Access

How To Create A Database

Creating a Database:

Step 1: Start Access and Click on **Blank desktop database.**

Step 2: Under **File Name** type a name for the database.

Step 3: To change the location of where to store the database, click the folder icon and select a location.

Step 4: Click **Create.** Access opens in a new table in **Datasheet View.**



Creating a Database



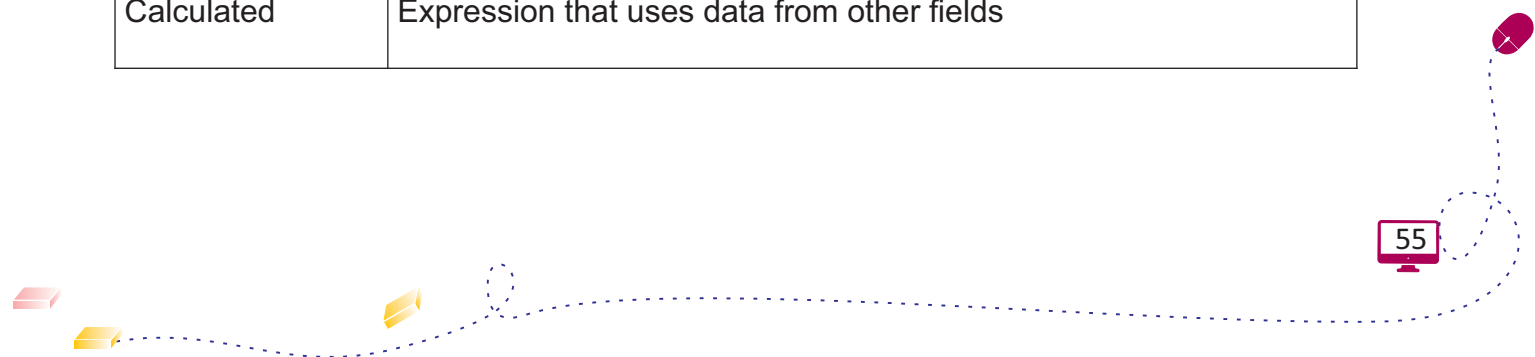
Creating a Table:

A table is a collection of data about a specific topic, such as employee information, products, or customers. The first step in creating a table is entering the fields and data types. This can be done in either Datasheet View or Design View but it is recommended to set up the table in **Design View**.

Understanding Fields and Their Data Types

Field- an element of a table that contains a specific item of information, such as the last name.
Field's Data Type- determines what kind of data the field can store.

| Format | Use to Display |
|-------------|--|
| Short Text | Alphanumeric Data (names, titles etc) upto 255 Characters |
| Long Text | Large amounts of Alphanumeric Data : Sentences & Paragraphs 64,000 Characters |
| number | Numeric Data |
| Date/Time | dates & Times |
| Currency | Monetary Values |
| Auto Number | The unique value generated by access to reach a new record |
| Yes/No | YES & NO Fields that contains only 1 of 2 values |
| OLE Object | Pictures & Graphs or other Active X Objects from another windows based application |
| Hyperlink | A link to a document or file on the Internet |
| Attachment | Attached files such as pics, docs etc |
| Calculated | Expression that uses data from other fields |



Understanding Views

There are multiple ways to view a database object.

The two views for tables are **Design View** and **Datasheet View**.

Design View is used to set the data types, insert or delete fields, and set the Primary Key.

Datasheet View is used to enter and view the data for the records.

Switching Between Design View and Datasheet View: Click the **View** arrow on the **Home** tab and click on either **Datasheet View** or **Design View**.

To Create a Table in Design View

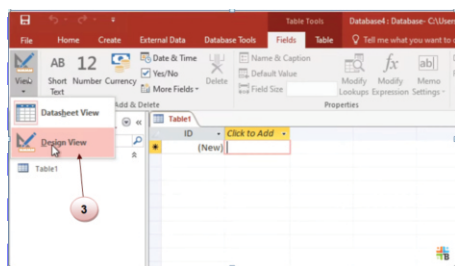
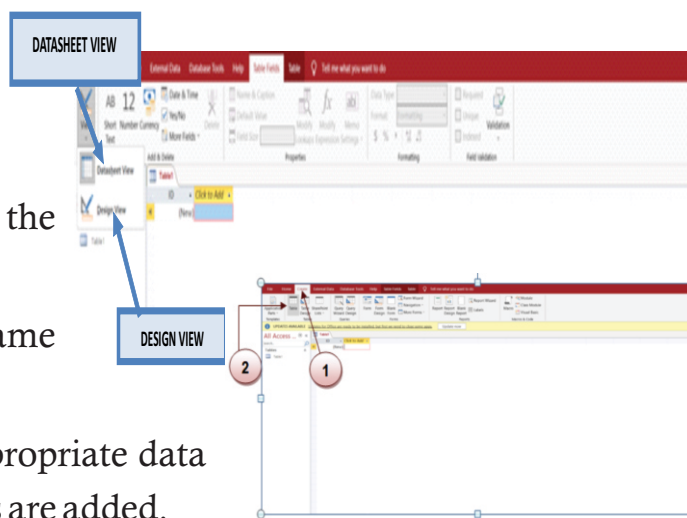
Step 1: Click on the **Create** tab.

Step 2: Click on **Table**.

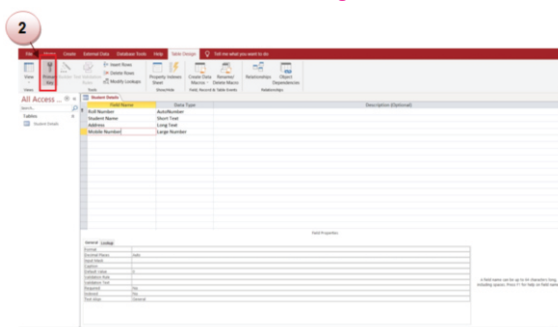
Step 3: Switch over to **Design View** on the **DESIGN** tab

Step 4: Prompted to save the table, enter your name and click on **OK**.

Step 5: Type the field names and select the appropriate data type for each field continue until all fields are added.



Note: The order in which you enter the field names is the order the fields will appear in the table.



Setting a Primary key

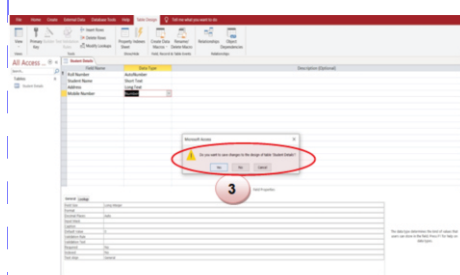
The **Primary Key** is the unique identifier for each record in a table. Access will not allow duplicate entries in a primary key field. When creating a new table, Access automatically creates a field “ID” with the auto number data type and assigns this as the Primary Key.

To Set a Primary Key:

Step 1: In **Design View**, position your cursor in the field you wish to set as the Primary Key.

Step 2: Click the **Primary Key** button on the toolbar.

Step 3: Save the table.



Primary Key

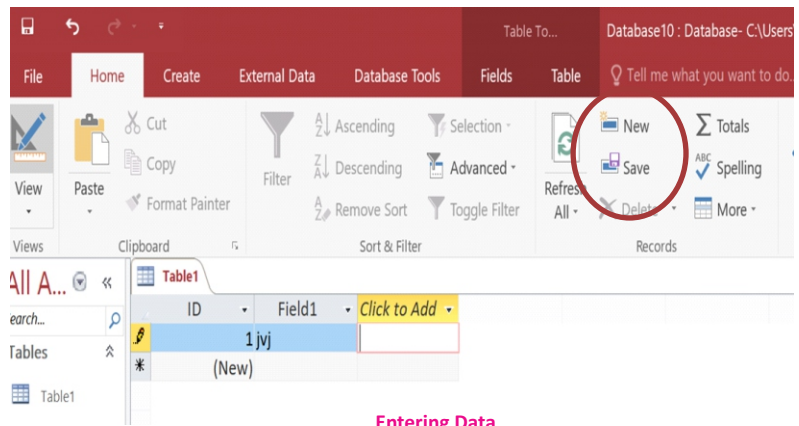
Entering Data in a Table

To enter in a table follow these steps:

Step 1: In **Data sheet View**, start typing the data in to the table by pressing the tab key to move to the next cell.

Step 2: When you have completed the record(row) , press **Enter**.

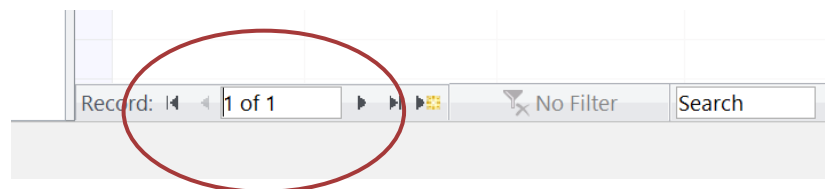
Step 3: You can also click on the **New record** icon on the **Home** tab in the **Records** group.



Entering Data

Navigation in a Table

NAVIGATION BUTTONS: These buttons are like media player button which helps in navigating through various records of Access objects. It also displays the current record number.



Navigation Table

Use the arrows at the bottom of the table to navigate among records.

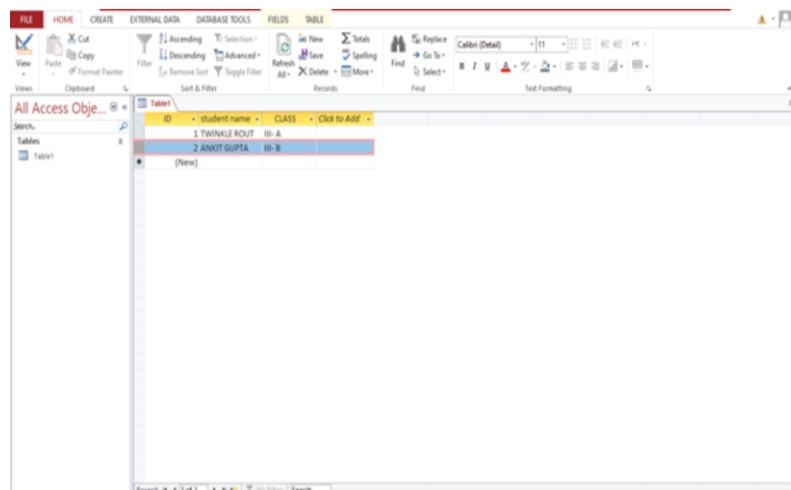
Adding A Record

To add record in a database, follow these steps:

Step 1: Open the table in Datasheet view.

Step 2: Place the pointer where you want to add new records (say, just after the last record of the table).

Step 3: Enter the new record in the table.



Adding a Record

NOTE: If you want to insert a record in between a table, perform the following steps:

- Select the record before which you want to insert a new record.
- Right-click and select 'New Record' option from the drop-down list. A blank row will be created.
- Insert the record.

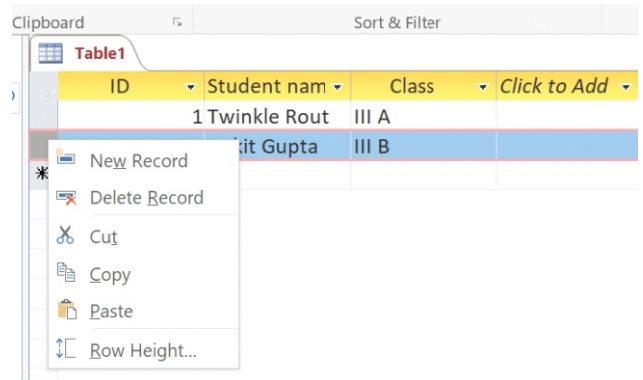
Deleting a Record

To delete a record, perform these steps:

Step 1: Open the table in Datasheet view.

Step 2: Place the mouse pointer at the extreme left of the row.

Step 3: Right-click the selected record and click 'Delete Record'.

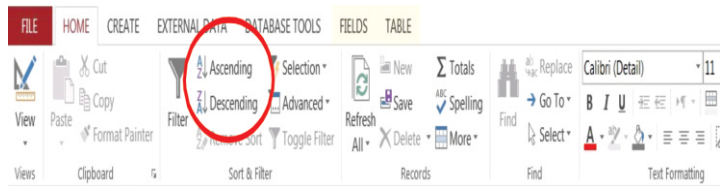


Deleting Record

The system asks for confirmation from the user before deleting it permanently from the table.

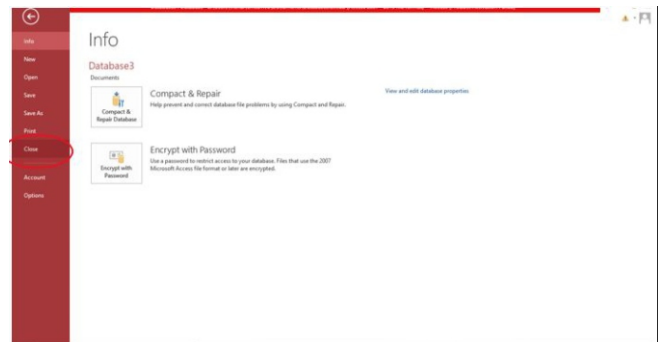
Sorting Records in Table

Step 1: Position your cursor in the field that you wish to sort by clicking on any record in the table.



Sorting Record

Step 2: Click either the **Sort Ascending** or **Sort Descending** icon on the **Home** tab in the **Sort & Filter** group.



Closing Access

Exiting Access

To close a database:

Step 1: Select the File tab to go to Backstage view.

Step 2: Select Close.

Step 3: If you have any unsaved objects, a dialogue box will appear for each one asking if you would like to save them.

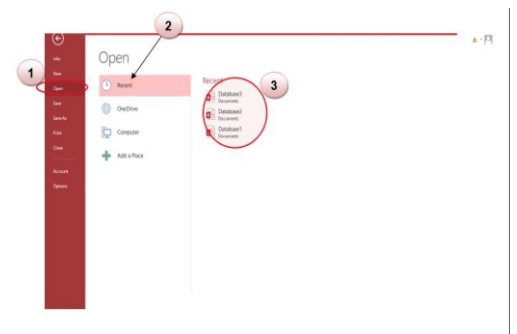
Step 4: Select Yes to save the object, Note close it without saving, or cancel to leave your database open.

Opening an Existing Database

Different methods you can use to open existing Access databases.

You can open databases from Windows Explorer or from within access itself.

You can open multiple databases at once, you can also create desktop shortcuts that open database objects directly.



Opening Existing Database

Note: To open existing databases, we use "Ctrl + O" as the shortcut key.

Quick Look



- 💡 **Forms** allow you to view data stored in your tables.
- 💡 The **Primary Key** is the unique identifier for each record in a table. Access will not allow duplicate entries in a primary key field. When creating a new table, Access automatically creates a field “ID” with the auto number data type, and assigns this as the Primary Key.
- 💡 **Relational Database:** When the data is stored in a form that the data items are related to one another. It supports multiple tables which organize the text in rows and columns, For example, Microsoft Access, Microsoft SQL, and Oracle.
- 💡 **Tell Me What You Want To Do:** It is a new feature, which can be used to get quick help on topics that you are looking for or the commands that you want to use in your document.



Section - I

► Objective Type Questions

A. Fill in the blanks with the correct option:

CTRL+O

Boolean

Database

Action

Delete

Tables

1. Organized collection of related data is called _____.
2. To open existing databases, we use _____ as the short cut key.
3. True or False values are stored by using _____ data type in Microsoft Access.
4. In Access, the data is stored in the form of _____.
5. To remove a field from a table: In the _____ column for the field, click the _____ icon.

B. Write T for the true statement and F for the false one:

1. A form is used to make both input and output on a table. ☐
2. NAVIGATION BUTTONS, helps in navigating through the records. ☐
3. We can work on more than one document at the same time. ☐
4. Design View is used to set the data types, insert, delete fields, and set the Primary Key. ☐
5. The **Primary Key** is the unique identifier for each record in a report. ☐

C. Choose the right option::

- Which of the following database object produces the final result to present
(A) Forms (B) Reports (C) Queries (D) Tables
- Which leads you through the process of creating a table?
(A) Wizard (B) Assistant (C) Relation (D) Coach
- A database object in MS Access that stores a question about the data in the database?
(A) Table (B) Form (C) Query (D) Report
- Which is NOT a method of creating a table?
(A) Datasheet View (B) Design View (C) Layout View (D) Template
- A database can be best described as.
(A) Organized collection (B) Useful presentation (C) Graphical representation (D) All of above

D. Application Based Question:

- While creating a table of a database, Adwitiya is not able to see the table is designed. Help her in getting the design view of the table.

- While making a query, Rig is not able to set criteria condition to see all records where city is Delhi. Help him in setting the criteria for the field.

Section - II

► Descriptive Type Questions:

E. Answer the following:

- Explain the different data types in Access?



2. How to add and delete a field?

3. How to create a table and primary key?

4. What are the main components of MS Access?

5. How to create a database?



Activity TIME

LAB ACTIVITY

Practice Makes Perfect



Create a database library with the following two tables. Enter ten records in both the tables.

Table : Books

- Modify the table and insert the field name Price before Quantity and set the type as number.
- Insert a new field Date_of_Purchase at the end of the list of Date/Time type .
- Move the Date_of_Purchase before Price field by Drag and Drop method .
- Similarly move Author field before Price field.
- Select the six record and delete it .
- Insert a new record
- Go to record 1 and modify the Price and Author data values .
- Short the table Books according to Book_Name field in descending order .
- Change the view from Datasheet to Design and then again change to Datasheet view .
- Save and close the table by pressing Ctrl+W keys.

Table : Students

- Create the Table Students and add 10 records .
- Rename Stu field at Stu_name .
- Add two new fields at the end of as issued and Date_of_Issue .
- Move Issue field after Class field.
- Delete record 7 .
- Modify the value of record number 6 in Stu_ID (and observe).
- Modify the value of Issued to No in records 7 to 10 .
- Short the table in ascending order of Date_of_Issue .
- Delete all records from 8 to 10 .
- Save the table and exit Access .

GROUP DISCUSSION

For Better Clarity



Divide the class into groups to discuss on:

- Why database? It's importance, Features and Microsoft Access as DBMS .
- Data type using Microsoft Access and their usages.

ONLINE LINKS

For Searching More



<https://microsoft-access.en.softonic.com/>

https://en.wikipedia.org/wiki/Microsoft_Access