

204320 - Database Management

Microsoft Access

What is Microsoft Access

- Microsoft Access is a Database Management System offered by Microsoft.
- Microsoft Access offers the functionality of a database and the programming capabilities to create easy to navigate screens (forms).
- Important Terms and Basic Objects
 - Database File
 - Table
 - Data Types
 - Query
 - Form
 - Report
 - Macro
 - Module

Important Terms and Basic Objects

- **Database File:**
 - It is a file which stores the entire database. The database file is saved to your hard drive or other storage devices.
- **Datatypes:**
 - Datatypes are the properties of each field. Every field has one datatype like text, number, date, etc.
- **Table**
 - A Table is an object which stores data in Row & Column format to store data.
 - A Table is usually related to other tables in the database file.
 - Each column must have Unique name
 - We can also define Primary Key in a table.
- **Query**
 - Queries answer a question by selecting and sorting and filtering data based on search criteria.
 - Queries show a selection of data based on criteria (limitations) you provide.
 - Queries can pull from one or more related Tables and other Queries.
 - Types of Query can be SELECT, INSERT, UPDATE, DELETE.

Important Terms and Basic Objects

- **Report**
 - A report is an object in desktop databases primarily used for formatting, calculating, printing, and summarizing selected data.
 - You can even customize the report's look and feel.
- **Macros**
 - Macros are mini computer programming constructs. They allow you to set up commands and processes in your forms, like, searching, moving to another record, or running a formula.
- **Modules:**
 - Modules are procedures(functions) which you can write using Visual Basic for Applications (VBA).

Type of Data	Description	Size
Short Text	Text, including numbers which does not need calculation. (e.g., Mobile numbers).	Up to 255 characters.
Long Text	This data type is used for lengthy text or alphanumeric data.	Maximum 63, 999 characters.
Number	Numeric data type used for storing mathematical calculations.	1, 2, 4, 8, and 16 bytes.
Date/Time	Store Date/time for the years 100 through 9999.	8 bytes.
Currency	It allows you to store currency values and numeric data with one to four decimal places.	8 bytes.
Auto Number	Assign a unique number or assigned by Microsoft Access when any new record is created. Usually used as the primary key	Four bytes (16 bytes if it is set as a Replication ID).
Yes/No	It only stores logical values Yes and No.	1 bit
Attachment	It stores files, such as digital photos. Multiple files can be attached per record.	Up to 2 GB Data can be stored.
OLE objects	OLE objects can store audio, video, other Binary Large Objects.	Up to 2 GB data can be stored.
Hyperlink	Text or combinations of text and numbers stored. That text is used as hyperlink address.	Each part of a Hyperlink data type allows you to store a maximum 2048 characters.
Calculated	Helps you to create an expression that uses data from one or more fields.	You can create an expression which uses data from one or more fields.

Differences between Access and Excel

- Microsoft Access and Excel are very similar yet very different. Here, are some important difference points between both of them-

Access	Excel
Deals with text, numbers, files and all kinds of data	Microsoft Excel generally deals with numerical data
All the data is stored one time, in one place.	Lots of worksheets or documents are a store with similar, repeated data.
Helps you to build highly functional data entry forms and report templates.	Only the primary data entry screen is available.
Users will be able to enter the data more efficiently and accurately.	Data accuracy and speed is not much because of the format.

Advantages of MS ACCESS

- Here, are the pros/benefits for using MS Access application:
- Access offers a fully functional, relational database management system in minutes.
- Easy to import data from multiple sources into Access
- You can easily customize Access according to personal and company needs
- Access works well with many of the development languages that work on Windows OS
- It is robust and flexible, and it can perform any challenging office or industrial database tasks.
- MS-Access allows you to link to data in its existing location and use it for viewing, updating, querying, and reporting.
- Allows you to create tables, queries, forms, and reports, and connect with the help of Macros
- Macros in Access is a simple programming construct with which you can use to add functionality to your database.
- It can perform heterogeneous joins between various data sets stored across different platforms

Disadvantages of MS-ACCESS

- Microsoft Access is useful for small-to-medium business sectors. However, it is not useful for large-sized organizations
- Lacks robustness compared to DBMS systems like MS SQL Server or Oracle
- All the information from your database is saved into one file. This can slow down reports, queries, and forms
- Technical limit is 255 concurrent users. However, the real-world limit is only 10 to 80 (depending on the type of application which you are using) → Microsoft Office 365
- It requires a lot more learning and training compares with other Microsoft programs