MICROSOFT ACCESS (MS-ACCESS)

INTRODUCTION

Microsoft access is a database tool that is used to store and maintain a collection of information that is organized to serve a specific purpose e.g. employee personal information, customers addresses and details, students information etc.

Microsoft Access is a windows based application. It helps in storing information about different subjects in separate tables. It allows for creation of forms, which automate tasks queries and reports that help analyze data.

ADVANTAGES OF USING DATABASE

- It makes it easy to maintain accurate and to update data.
- It makes it fast to retrieve information because data is easier to find.
- It makes if easy to analyze and make summary reports from store information.
- It makes it easy to protect your data from unauthorized personnel.

APPLICATION OF DATABASE

- Budget analysis
- Cash flow forecasting
- Bank account management
- Personnel record maintenance
- Address of books and diary maintenance.

EXAMPLE OF DATABASE MANAGEMENT PROGRAMS

I. Data base
II. Clarion
III. FoxPro
IV. Ms. Access

COMPONENTS OF MICROSOFT ACCESS DATABASE

1. Tables
2. Queries
3. Forms
4. Reports
5. Macros
6. Modules

DATABASE TERMINOLOGY

DATA: This is the material that Access stores organize and manages for you.
FIELDS: This is the place where data is placed within the …….. field holds one place of data. If the are storing student details. Possible fields …… name, admission number, age, fees etc.
RECORDS: All the fields for one student constitute a record Records ensure which name relates to which admission number, age etc.
TABLE: A table is a collection of records that describe similar data. A database for student details could have tables for admission information fees, exams etc.

DESIGNING DATABASE

A database is a collection of related data. When creating a database it is determined by the following:-

1. Determine the purpose of the database. This helps in deciding the facts to be stored.
2. Determine the table. Divide the information into separate subjects, such as employees or orders. Each subject will be a table will be a table in the database.
3. Determine the fields. Decide what information to store in each table. Each field is displayed as a column in the table.

NB: When you create the Microsoft Access database you create one file that contains the data and table structures as well as the queries, forms reports macros and modules.

CREATING A NEW DATABASE

Once Ms. Access application is on, a dialog box appears with three options:

a) Blank database

This allows for creation of a self – designed database

b) Database wizard

This provides a predefined set of databases where the user is free to customize them according to the needs at hand.

c) Existing Database

This allows Access to open previously created databases.

CREATING A NEW TABALE

1. USING THE DESING VIEW

Procedure

a) Select the table option and click on the new button.
b) Select design view
c) Click o.k.
d) Enter the field name, data type & description
e) Set the primary key by right clicking the field you want to set as the primary key and then clicking the primary key icon (optional).
f) Click file.
g) Click save
h) Type the table name and click o.k.
i) Click save
j) Type the table name and click o.k.
k) Enter the records as required
l) Click file
m) Click save.

2. CREATING A TABLE USING THE BLANK DATABASE OPTION

Procedure

a) In the database window click table
b) Click next
c) Click datasheet view
d) Click o.k.
e) Remain the fields by clicking format then rename column e.g. name, registration number, fees etc.

f) Enter the records
g) Click file
h) Click save
i) Click yes if you want to set a primary key or no if you don‟t

3. CREATING A TABLE USING THE TABLE WIZARD

Procedure

a) In the database windows click table
b) Click new
c) Click table wizard
d) Click o.k.
e) From the sample tables select the kind of table you want e.g. Employees, custom suppliers, students etc.
f) Select the fields you want for your table
g) Click next
h) Type the name of the table
i) Click finish.

Steps in designing a database

a) List and group your fields
b) Decide on the data type
c) Give relevant names to the various groups of fields.

The following are available fields (data types)
Data type – This is an attribute of a field that determines what kind of data the field with store. The following is a summary of all the field data types available in Ms. Access, the uses and their storage sizes.

a) Text – Stores a combination of text and numbers such as addresses, numbers that do not require calculations, such as phone numbers, postal codes of size up to 25 characters.
b) Fieldname – These are column headings for the fields in the table that you are creating.
c) Memo – This stores lengthy text and numbers such as general notes or detailed descriptions. Memo fields hold up to 64000 characters of information.
d) Description – This column is optional but it can be used to give a detailed description of the field name.
e) Number – Numeric data to be used for mathematical calculations, except calculations involving money.
f) Date/ Time – This stores dates and time.
g) Currency – This is used to store monetary values e.g. Ksh. $ etc.
h) Auto number – This is a unique sequential (incrementing by 1) or random number automatically inserted when a record is added.
i) Yes/No – This is for fields that will contain only one of two vaues such as yes/no. true/false
j) Ole object – (object linking and embedding) this is for inserting objects and other graphics in the database.
k) Hyperlink – This connects the current objects to other data source:

PRIMARY KEY

What is a primary key? It is a field that is used to uniquely identify each record stored in a table. It is useful when you want to avoid entering duplicate records e.g. in a college it is the student ID that uniquely identifies a particular student and his details.

ADVANTAGES OF A PRIMARY KEY.

- ❖ Creates relationship between tables for automatic association of data in separate tables correctly.
- ❖ Its faster to find and retrieve data from table with a primary key.
- ❖ Its flexible to make changes or update data from tables with primary keys than with tables without primary keys.

Sorting a database

Procedure

a. click the column heading that you want to sort
b. click records
c. click sort
d. choose either ascending or descending

Retrieving a database

Procedure

a) click file
b) click open
c) choose and click the file to be retrieved
d) click open
e) Select the table and click open.

Closing a database

Procedure

a) Click file.
b) Click close.

Increasing the column width

Procedure

a) Place the cursor to the column to increased or decreased.
b) Click column width
c) Type the width desired width
d) Click ok

NB: You can also increase or decrease by dragging with the mouse.

Finding and replacing text

Procedure

a) Click the column that contains the word you want to replace.
b) Click edit
c) Click replace
d) In the find what box what box type the to replace it with
e) Click replace or replace all
f) Click yes
g) Click close.

To change the text into Bold, Underline, Italics, Colour etc

Procedure

a. Select your database
b. Select bold, underline, italics, etc from the formatting toolbar.

Renaming columns

Procedure

a. Click the column that contains the field you want to rename.
b. Click format
c. Click rename
d. Type the fieldname desired.

QUERIES

A query help us to ask a question about the data stored in the tables. Queries are used to view, change and analyze data in different ways. They can also be used as the source of records for forms and reports.

Why We Use Queries

We need queries when we want to ask questions about data stored in our tables.

How do Queries help us?

- In choosing fields
- Choosing fields that meet a certain criteria
- In sorting records
- Performing calculations – can create calculated fields and add data to them.

CREATING QUERIES

In the database window click queries.

There are two options you can use to create a query.

a**) Design view** – This is used when you want to create a query yourself from scratch.

b) **Query wizard** – This is used when you want to create a query using the wizard

a) **Creating by designing it yourself**

Procedure

a. In the database window click on query
b. Double click the design view option or click new then click design view then click ok
c. Ms. Access opens a select query window and display the add table dialog box, which lists all the tables in your database.
d. In the add table dialogue box double click the table that has the data you want.
e. Click close.
d. Double click the fields you want in the tables‟ field list. The field appears in the grid. You can also add a field by dragging it from the tables‟ field list to the cell in the fieldname row.
g. Type the criteria you want in the criteria box
h. Click query then run or click the query button from the tools bar.

b). **Creating a Query using a simple query wizard.**

Procedure

a. Click on query in the database window
b. Choose the new button and click

c. Choose simple query wizard and click on it.
d. select the table that you want to base your query on and click
e. select the fields you want to show and click next.
f. Answer the questions the computer is asking you and click finish.

NB: The query is going to be displayed showing only the selected fields.

CALCULATED FIELDS
Ms Access allows the inclusion on new field that holds data from other fields.
Using Wild cards to Set Criteria
Ms Access allows the use of criteria of wild cards in setting criteria for viewing records.
E.g. To view students details whose surname begin with letter M.
a. select the surname field
b. Type M* or Like M* at the criteria option
c. Run the query
    i. To view all those students whose surname has letter M type M*
    ii. To view all those students whose balance is more than 5000 (type >5000)
    iii. To view all those born before 1970, type (<31/12/1969)
    iv. To view all those doing other subjects apart from Biology type (not biology)

FORMS
A form is a collection of data chosen and written in specific way. One can use a form to add and edit the information. Basing your output on either the table or queries you can create the form.

CREATING FORMS
In the database window click form
There are two options that you can use to create a form:
a. Design view – This is used when you want to design the form yourself and then add controls and other design features you require.
b. Form wizard – Ms. Access has a form wizard which asks you questions about the form you want to create, then creates a form based your responses.

a. Creating a form using design view
Procedure
a. In database window, click form button, and then choose the new button.
b. Click design view
c. In the select a table/ query box, select the table or query of the form‟s source table or query.
d. click o.k.
e. Ms. Access displays the form window in design view where you can create a custom layout by dragging the fields inside your form.
f. save your form
g. To view the records, close the form in design view and then double click it in the database window.

b. To create a form using a form wizard
a. In the database window, click form button
b. click new
c. choose form wizard

d. In the select a table/query list, select underlying table or query and click ok.
e. Follow the direction in the form wizard dialogue boxes by answering the questions the computer is asking you.
f. click next
g. Type the name of the form and then click finish, you will be displayed.

REPORTS

A report is information that is organized and formatted to meet your specifications. It gives a way to retrieve and present data as meaning information for use distribution.

PURPOSE OF A REPORT

- Reports are an effective way of presenting information to be distributed in printed format e.g. font style and font size.
- Data can be organized and grouped into categories with sub-totals making it easier to read.
- Graphs can be incorporated into the report to make the report more meaningful.

Creating a Report using Report wizard

Procedure

a. In the database window, click the report button
b. choose the new button then click report wizard
c. From the select a table/query list, select underlying tables or query and click ok.
d. Select the fields to appear on your report from the list of available fields.
e. Click next.
f. Select the fields for grouping if required.
g. Select the fields to sort by.
h. Choose the layout for your report, you can also change the page orientation for the report to landscape if you have many fields.
i. Select the look and style you would like for the report.
j. Click next.
k. Type the title for the report and click finish

NB: Your report is going to be displayed.