

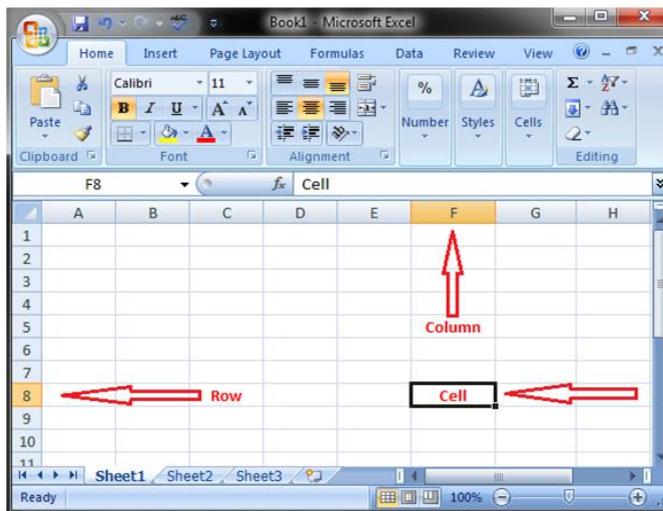
COMPUTER STUDIES

SPREADSHEET

Definition: A spreadsheet is a productivity software in which you can manage personal and business finances, examination results and other alphanumeric database management reports with the help of a spreadsheet program.

You can use a spreadsheet program to perform calculations, analyze data and present information.

A spreadsheet allows you to organize data in rows and columns. These rows and columns are collectively called a **worksheet**.



Note: A letter identifies each column and a number identifies each row.

Advantages of Electronic Spreadsheet.

1. It has an environment that can make number manipulation easy.
2. Experiments can be performed with numbers without having to redo all the calculation.
3. It helps to perform tedious calculations that can be done ordinarily.
4. A spreadsheet is automatically updates if one of the entries is changed.
5. It is highly portable.
6. It has inbuilt manipulation tools.
7. It has large storage and accommodates large entries.
8. Retrieval is very easy.

Disadvantages of Electronic Spreadsheet.

1. It functions only with electricity.
2. It requires technical know-how.
3. It can be relatively expensive to establish.

Uses of Spreadsheet Packages.

1. **Employee Nominal Roll:** Spreadsheet is used in keeping records of all employees working in an organization.
1. **Employee Payroll:** Spreadsheet can also be used in preparation of salaries of employees for easy calculation.
2. **Financial Analysis:** This involves the use of spreadsheet to study the performance of organizations, individuals, corporate bodies or companies. It can also be used to compute their finances weekly, monthly or yearly or as the need arises.
3. **Database Record:** All information concerning the growth and development of the organization can be written in the spreadsheet.
4. **Statistical Analysis:** It can be used to carry out statistical task making use of the available statistical tool.
5. **Examination Result:** Spreadsheet is also used to process students' results.
6. It is used for preparation of budgets.
7. It is also used for preparation of daily sales.
8. It is used in solving equation in mathematics.
9. It is in consolidation of Federal accounting.

Examples of Spreadsheet Packages

Lotus 1 2 3

1. Microsoft Excel
2. Start view
3. Sage
4. Deceasy
5. Lotus smart suite
6. Peachtree

MICROSOFT EXCEL

Microsoft Excel is the most popular window spreadsheet package. It provides facilities to create professional viewing documents using varieties of formatting technics. Excel can also be seen as a spreadsheet used to record series of accounting, arithmetic, pay roll, statistics, budget consolidation, bank statement, etc. It allows you to organize data in rows and columns, complete calculations, take decisions, graph data and develop reports.

It is made up of several workbooks for different job applications. Inside a workbook, there are worksheets.

A worksheet has **65,536** rows and **256** columns. A column letters begin with "A" and end with "XFD". The row numbers begin with "1" and end with "1,048,577"

Loading/Starting of Microsoft Excel

1. On the windows taskbar, click the start menu.
2. Click on all program.
3. Click on Microsoft office.
4. Click on Microsoft Excel and allow the program to open.

Exiting/Closing of Microsoft Excel

1. On the opened Excel environment, Click on the file menu or office button in the menu bar.  on the sizing bar at the topmost right. This opens a sub menu.



2. Click on close or exit. Or click on the close button side of the windows.

Features of Microsoft Excel.

1. **Workbook:** A workbook is a file in which data is processed and stored. Each workbook can contain three sheets. Users can organize various kinds of related information in a single file. A workbook contains several worksheets.
2. **Worksheet:** A worksheet is the primary document that is used in Microsoft Excel to store and work with data. A worksheet consists of cells organized into columns and rows and is always part of a workbook. A worksheet is also known as a spreadsheet.
3. **Chart sheet:** A chart sheet is a sheet in a workbook that contains only a chart. Chart sheets are linked to worksheets data and can be updated when the worksheet data changes.
4. **Active sheet:** The active sheet is the sheet that is being worked on in a workbook. The name of the active sheet is bolder than other non-active sheets.
5. **Toolbars:** This contains the tools that are used in Excel to organize data.
6. **Menu bar:** This is a special bar at the top of the screen that contains menu items which contains submenu such as **file, home, Insert, design, layout, references, mailing, review, view**
7. **Status bar:** This is the bar at the bottom of the document window that shows information such as the active workbook, active sheet, status mode and vertical and horizontal positions of the insertion point. It also describes the selected commands.
8. **Formula bar:** This bar is located near the top of the window. It displays the constant, value or formula used in the active cell. It is also used to enter values or edit values of formula.
9. **Rows:** A row is defined as the horizontal space that goes across the window. Numbers are used to designate each row's location e.g. 1, 2, 3, 4, etc. there are 65,536 rows in a worksheet.
10. **Column:** This is defined as the vertical space that runs from the top to the bottom of the window or worksheet. **A letter** identifies each column e.g Column A, B, C, D, etc.
11. **Cell:** This is defined as the intersection of the rows and columns. Each cell is assigned a name according to its column letter and row number. When referencing a cell, the column is written first by the row e.g. Cell D8, A1, etc.

	A	B	C	D
1	Cell A1	Cell B1	Cell C1	Cell D1
2	Cell A2	Cell B2	Cell C2	Cell D2
3	Cell A3	Cell B3	Cell C3	Cell D3

12. **Cell Pointer:** This is a cross like space  that the mouse pointer changes to when it is within the worksheet. The cell pointer can be moved to the cell in which you want to work or enter data, make calculation or begin a command. The cell that the pointer is clicked on is called the **current or active cell**.

13. **Range:** A range is a group of cells in a worksheet. E.g. cell A1, R2, A2 etc.

How to Move Round the Worksheet

1. **Using the keyboard or arrow keys** (←, ↑, →, ↓).
 - a. Right arrow key →: This moves the cell pointer one cell to the right.
 - b. Left arrow key ←: This moves the cell pointer one cell to the left.
 - c. Up arrow key ↑: This moves the cell pointer one cell upward.
 - d. Down arrow key ↓: This moves the arrow cell pointer one cell downward.
1. **Use of the tab key:** The tab key moves the cursor one cell to the right.
2. **Enter key:** This moves the cursor one cell down.
3. To move round the worksheet using the **mouse**: move the mouse pointer to the cell of interest and click. It becomes the active cell.
 - To return to the beginning of the windows, press **ctrl + home** on the keyboard.
 - To move one window page up, press **page up** on the keyboard.
 - To move

DATA TYPES

There are three common data types, they are:

1. Label
 2. Value
 3. Formula
-
- a. **Labels:** Labels are letter (A-Z). All alphabetic notations such as full stop (.), colon (:), semicolon (;), parenthesis ([]), quotation mark (" "), etc are labels. A combination of values and labels is also regarded as labels e.g. 3A, B8, No14, etc.
 - b. **Value:** This is a piece of data that can be used in calculations. Values include numbers 0-9, arithmetic notation like +, -, x, =, or their combination e.g. +29, -96, =13 etc. Values are by default right aligned. Values are also regarded as numbers.
 - c. **Formula:** This is an instruction that tells the computer to work the answer for a given mathematical problem. A formula is like a mathematical equation. In Excel, a formula is a combination of **function** and **argument**. Examples of formula are =sum (A3:A5), = AVG (B1:B5), =sum(D1:D3). "SUM" in the above examples is the function while (A3:A5) is the argument.

HOW TO ENTER DATA IN AN EXCEL WORKSHEET.

1. Click on the cell of interest e.g. A5
2. Type the letter or words from the keyboard.
3. Press enter on the keyboard and it will align left.

FORMATTING A WORKSHEET

Formatting simply means organization of digital data in a form desired by the user for storing, printing or displaying.

- i. Justifying entries: This simply means to align entries to the left, centre or right.

Steps to Justify Entries

1. Select the cell or range of cells.
2. Pull down the format menu and select alignment.
 1. Select the required alignment (left, centre or right).
 2. Click ok.

Sheet Saving a Work

Saving simply means keeping the worksheet for later use.

To save a worksheet, do the following:

- i. Click on the file menu.
 1. Select “save as”
 2. Select the location (drive or folder) where you want to save the worksheet into.
 3. Type the file name in the file name box.
 4. Click save or ok or press enter key on the keyboard.

Opening an Existing Worksheet

This simply means retrieving a saved file from the computer.

To open a worksheet, do the following:

- i. Click on the file menu.
 1. Select “open”
 2. Select the file location (drive or folder) and the name of the file from the file list.
 3. Click ok or press enter key on the keyboard.

To Print a Worksheet

Printing means to produce the hard copy of a document. To print a worksheet. i. Highlight the area to be printed

1. Click on file menu.
2. Click on print, set the printer option from the print dialogue box (make sure that the printer software is install in your system).
3. Click ok or press enter key on the keyboard.

Note: We have two types of data, namely: i. Portrait ii. Landscape

Editing Cell Entries.

Editing simply means correction of the mistakes already made in a worksheet. It can also be done if there is need for updating of data or information. This can be done using three procedures, namely:

1. Use of space bar key on the keyboard.
2. Use of F2 key on the keyboard.
3. Changing column width – pull down the format menu and select column then in the column submenu, type in the desired width in the space provided.

- **Changing row height** – click on the cell you want to change the row height. Click on the format menu and row and then height, type in the desired height in the space provided.

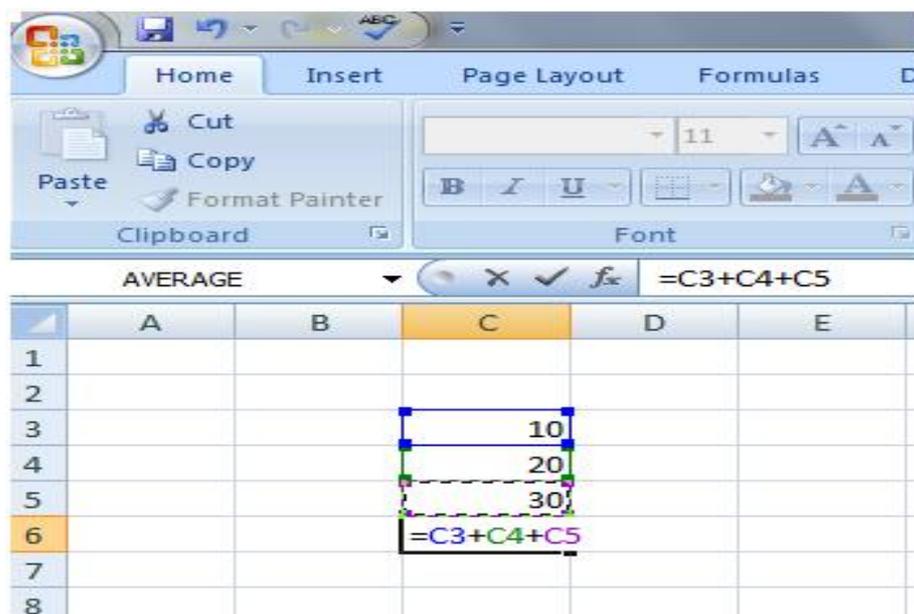
Changing the text colour.

1. Select the cell that contains the font colour on font colour in the drawing toolbar.
2. Click on font colour in the drawing toolbar.
3. Select the colour of choice.

Performing Calculations in the Worksheet

Operators used in calculation in spreadsheet include:

1. Arithmetic operator
2. Comparison operator



Arithmetic Operator: This is used to perform mathematical operations.

	Arithmetic Operator	Meaning	Example
1	+ (plus)	addition	10 + 2
2	- (minus)	subtraction	50 – 10
3	* (asterisks)	multiplication	60 * 5
4	/ (forward slash)	Division	20 / 5
5	% (percentage)	Percent	80%
6	^ (Caret)	Exponential (raise to power)	8^3 = 8 x 3

In spreadsheet, a formula is started with a particular sign. Excel uses the equality sign (=); another popular package, lotus 1 2 3 uses @ or – sign. one window page down, press **page down** on the keyboard.

Comparison Operator: This is used to compare two values or more, when two values are compared by using these operators, the result is a logical value, either true or false.

	Comparison operators	Meaning	Example
1.	=	Equal to	A1=D1
2.	>	Greater than	B7>A2
3.	≥	Greater than or equal to	D5≥E1
4.	<	Less than	C5<A1
5.	≤	Less than or equal to	B2≤A4
6.	≠	Not equal to	B4≠C5

BASIC COMPUTATIONS

Computations or calculation in spreadsheet can be carried out using four methods;

1. Manual method
2. Longhand formula method (LHF)
3. Shorthand formula method (SHF)
4. Automatic method (Auto sum)

1. **Manual Method** – This involves computing the figures manually.

In a test, a student scored 40% in mathematics, 30% in Igbo Language and 40% in social studies; calculate the total score.

In manual method, the scores are entered in worksheet and calculated manually. That is 40 + 30 + 40 press the enter key on the keyboard.

2. **Longhand Formula Method (LHF):** This involves using the cell address to compute the figures. Example +A4 + C4 + D4 press enter key on the keyboard.

1. **Shorthand Formula Method (SHF):** This involves using a formula to compute the figures. The function and the argument (that is the formula will work on to be used e.g. = sum (A1:E1) then press enter key on the keyboard.

2. **Automatic Method:** This involves using the auto sum icon on the standard toolbar to compute the figure e.g. select the auto (Σ) in the standard toolbar.

Printing of Worksheets

To print a worksheet, the following are the steps to follow:

1. Select the worksheet you want to print or open the documents to be printed.
2. Click on windows button.

3. Select print, a dialogue box will come out which allows you to set how many pages to be printed or the kind of paper orientation (portrait or landscape) to be used, you also set copies of document to be printed.
1. Click print or press enter on the keyboard.

GRAPHS (CHARTS) IN WORKSHEETS)

A graph is a diagram showing the qualities. It can also be defined as a diagram used to indicate the relationship between two or more variables. This is measured a long two axes set at right angle to each other. A graph may be in different forms, for example, a line joining points plotted between coordinates, or a series of parallels bars. Graphs can also be called **charts**.

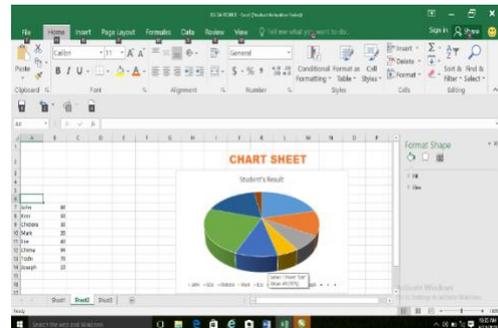
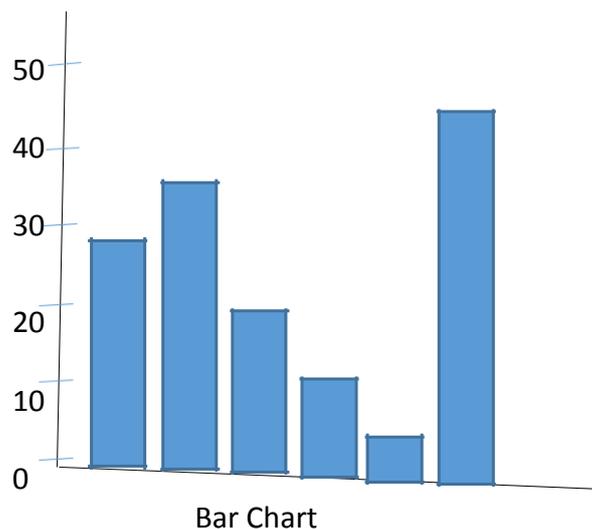
USES OF GRAPHS

Graphs are used for the following

4. To display results of computer mathematical solution using a diagram.
5. To show relationship between two variables.
6. To measure qualities along two axes at right angle to each other.
7. To compare variables in a table.
8. To present report.

How to Construct a Graph or Chart.

1. Select the cells that contain the data you want to represent graphically.
2. Click insert menu.
3. Select your desired, chart type.
4. Click next to make some modifications if desired.
5. Click finish.



Printing of a Graph

1. Select or highlight the graph to be printed.
2. Click on window office button.
3. Click on print in the file menu
4. The print dialogue box appears
5. Specify the print options (number of copies, the page range etc)
6. Click on print, ok or press enter on the keyboard.

SAVE YOUR TIME WITH KEYBOARD SHORT CUTS

Short cut	Function
Ctrl + A	Select All
Ctrl + B	Bold
Ctrl + C	Copy
Ctrl + D	Fill
Ctrl + F	Find
Ctrl + G	Find next instance of text
Ctrl + H	Replace
Ctrl + I	Italic
Ctrl + K	Insert a hyperlink
Ctrl + N	New workbook
Ctrl + O	Open
Ctrl + P	Print
Ctrl + R	Nothing right
Ctrl + S	Save
Ctrl + U	Underline
Ctrl + V	Paste
Ctrl + W	Close
Ctrl + X	Cut
Ctrl + Y	Repeat/redo
Ctrl + Z	Cancel/undo
F1	Help
F2	Edition
F3	Paste the name
F4	Repeat the last action
F4	When entering a formula, switch between absolute / relative references
F5	Go to
F6	Next page
F7	Spell Check
F8	Extension of the mode
F9	Recalculate all workbooks
F10	Activate Menu bar
F11	New graph
F12	Save As
Ctrl + :	Insert the current time
Ctrl + ;	Insert the current date
Ctrl + "	Copy the value of the cell above
Ctrl + '	Copy the formula from the cell above

Shift	Offset Adjustment for Additional Functions in the Excel Menu
Shift + F1	What is it?
Shift + F2	Edit cell comment
Shift + F3	Paste the function into the formula
Shift + F4	Search Next
Shift + F5	Find
Shift + F6	Previous Panel
Shift + F8	Add to the selection
Shift + F9	Calculate the active worksheet
Shift + F10	Popup menu display
Shift + F11	New spreadsheet
Shift + F12	Save