

WEEK	TOPIC
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3	Definitions of Database Terminologies
4	Spreadsheet Packages : Definition and Examples of Spreadsheet App
5	Spread Sheet Packages : Features and Terminologies
6	Work Sheet : Data Entry, Data Editing and Saving
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8	Graphics: Creating Graphs
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### Terminologies of Database

**1. Data:** It is defined as facts or raw materials used to produce information.

**2. Information:** This is defined as a processed data.

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or study.

**3. Database:** a structured set of data held in a computer, especially one that is accessible in various ways. Database is an organized collection of data, generally stored and accessed electronically from a computer system.

**4. Rational Database:** A database structured to recognize relations between stored items of information.

### **5. Relational Database**

A relational database is one which employs the **relational model**, in which the raw data is organized into sets of topples, and the topples organized into relations.

### **6. Database Management System (DBMS)**

A database management system is a software system which facilitates the organization of housed data into a particular database architecture.

**7. Primary Key:** A primary key is a single attribute, or combination of attributes, which can be used to uniquely identify a row of data in a given table. Common primary keys include vendor ID, user ID, email address, or combination of attributes considered together such as first name, last name, and city of residence, all considered together as a single entity.

### **8. Foreign Key**

Again in the relational model, a foreign key is an attribute or collection of attributes from one relational table whose values must match another relational table's primary key. A common use for such an organizational scheme would be to link a street address in one table to a city in another, and perhaps to a country in a third. This eliminates repetitive data input, and reduces the possibility of error, increasing data accuracy.

### **9. Structured Query Language (SQL)**

SQL is a relational database query and manipulation language. Its power and flexibility allows for the creation of databases and tables, and the manipulation and query of data. More recently, the term has become conflated with relational databases, relational database management systems, and the relational model, at least as a term used in contrast to the term "NoSQL."

## 10. Consistency

A database is consistent when all of its imposed integrity constraints have been satisfied. Consistency can only be ensured if each database transaction, or data access request, begins in a known consistent state; otherwise, guarantees of consistency cannot be made.

## 11. Data Redundancy

Data redundancy is a situation in a database in which copies of a given piece of data are housed in 2 different places. This redundancy can be achieved if data is held in multiple places in the same database, in multiple databases on the same computer, or in multiple databases across multiple computers, perhaps even using different database management server software. This redundancy can be leveraged for both data access and permanence.

### SPTEAD SHEET PACKAGE

#### The TEMINOLOGIES OF SPREAD SHEET

- **Workbook** — The workbook refers to an Excel spreadsheet file. The workbook houses all of the data that you have entered and allows you to sort or calculate the results. A workbook that is available to be viewed and edited by multiple users on a network is known as a Shared Workbook.
- **Worksheet** — Within the workbook is where you'll find documents called worksheets. Also known as spreadsheets, you can have multiple worksheets nestled in a workbook. Tabs at the bottom of the of the screen will indicate which of your worksheets you are currently working on. This is also known as an active worksheet or active sheet.
- **Cell** — A cell is a rectangle or block housed in a worksheet. Any data that you want to enter into your worksheet must be placed in a cell. Cells can be color coded, display text, numbers and the results of calculations, based on what you want to accomplish. An Active Cell is one that is currently opened for editing.
- **Columns and Rows** — Columns and Rows refer to how your cells are aligned. Columns are aligned vertically while rows are aligned horizontally.
- **Column and Row headings** — These headings are the lettered and numbered gray areas found just outside of columns and rows. Clicking on a heading will select the entire row or column. You can also alter the row height or column width using the headings.
- **Workspace** — Much like worksheets in a workbook, a workspace allows you to open numerous files simultaneously.
- **Ribbon** — Above the workbook is a section of command tabs called the Ribbon. A multitude of options are found behind each tab of the ribbon

**Spreadsheet** is a piece of paper or a computer program used for accounting and recording data using rows and columns into which information can be entered.

#### Examples of spreadsheet programs

1. Google Sheets - (online and free).
2. iWork Numbers - Apple Office Suite.
3. LibreOffice -> Calc (free).
4. Lotus 1-2-3 (discontinued).
5. Lotus Symphony - **Spreadsheets**.
6. Microsoft **Excel**.
7. OpenOffice -> Calc (free).
8. VisiCalc (discontinued).

## **DATA ENTRY, DATA EDITING AND SAVING ON A WORKSHEET**

### **DATA ENTRY**

1. Click cell location B3.
2. Type the number **2670** and press the ENTER key. After you press the ENTER key, cell B4 will be activated. Using the ENTER key is an efficient way to enter data vertically down a column.
3. Enter the following numbers in cells B4 through B14: **2160, 515, 590, 1030, 2875, 2700, 900, 775, 1180, 1800, and 3560.**
4. Click cell location C3.
5. Type the number **9.99** and press the ENTER key.
6. Enter the following numbers in cells C4 through C14: **12.49, 14.99, 17.49, 14.99, 12.49, 9.99, 19.99, 19.99, 19.99, 17.49, and 14.99.**
7. Activate cell location D3.
8. Type the number 26685 and press the ENTER key.
9. Enter the following numbers in cells D4 through D14: **26937, 7701, 10269, 15405, 35916, 26937, 17958, 15708, 23562, 31416, and 53370.**
10. When finished, check that the data you entered matches

### **EDITING**

Data that has been entered in a cell can be changed by double clicking the cell location or using the Formula Bar. You may have noticed that as you were typing data into a cell location, the data you typed appeared in the Formula Bar. The Formula Bar can be used for entering data into cells as well as for editing data that already exists in a cell. The following steps provide an example of entering and then editing data that has been entered into a cell location:

1. Click cell A15 in the Sheet1 worksheet.
2. Type the abbreviation **Tot** and press the ENTER key.
3. Click cell A15.
4. Move the mouse pointer up to the Formula Bar. You will see the pointer turn into a cursor. Move the cursor to the end of the abbreviation **Tot** and left click.
5. Type the letters **al** to complete the word Total.
6. Click the checkmark to the left of the Formula Bar (see **Figure 1.17**). This will enter the change into the cell.

### **To save an Excel file.**

- a. From the menu bar, File → Save As
- b. Next to “Format:,” click the drop-down menu and select “Comma Separated Values (CSV)”
- c. Click “Save”
- d. Excel will say something like, “This workbook contains features that will not work...”. Ignore that and click “Continue.”
- e. Quit Excel. It will ask you, “Do you want to save the changes you made?” Click “Don’t Save,” because you just saved them. (Excel really does not want you to use a format other than its own.)

Note that there is also an option to save as “Tab Delimited Text.” Many people prefer that, especially those who work in countries where commas are used a decimal separators.

## WORK SHEET CALCULATION

### How to enter formula in Excel

In Excel, each cell can contain a calculation. In Excel jargon we call this a **formula**. Each cell can contain one formula. When you enter a formula in a cell, Excel calculates the result of that formula and displays the result of that calculation to you. In fact, when you enter a formula into *any* cell, Excel will recalculate the result of *all* the cells in the worksheet. This normally happens in the blink of an eye so you won't normally notice it, although you may find that large and complex spreadsheets can take longer to recalculate.

When entering a formula, you have to make sure Excel knows that's what you want to do. You start by typing the = (equals) sign, then the rest of your formula. If you don't type the equals sign first, then Excel will assume you are typing either a number or a text. You can also start a formula with either a plus (+) or minus (-) symbol. Excel will assume you're typing a formula and insert the equals sign for you.

Here are some examples of some simple Excel formulas and their results:

In this example, there are four basic formulas:

1. Addition (+)
2. Subtraction (-)
3. Multiplication (\*)
4. Division (/)

In each case, you would type the equals sign (=), then the formula, then press Enter to tell Excel you've finished.

- Sometimes Excel will show you a warning rather than just entering your formula. This will happen if the formula you've typed is invalid, i.e. is not in a format that Excel recognizes. It will usually also give you some indication of what you did wrong.

### **Creating formulas that refer to other cells in the same worksheet**

Excel's power comes from allowing you to create formulas that refer to the values in other cells. In the example above, you'll notice the headings across the top (A, B) and down the left (1,2,3,4,5). By combining these values, we have a unique reference each cell in a worksheet (A1, A2, A3, B1, B2, B3, and so on).

When you create a formula, you can refer to other cells using these cell references to incorporate the values in other cells into a formula. The value in another cell might be a simple number, or another cell containing a formula. When you create a formula that refers to another cell that also contains a formula, your formula will use the result of the formula in that other cell. Then, if the result of the formula in that other cell changes, so too does the result in your formula.

Here are some examples of some Excel formulas that refer to other cells:

In this example, rows 6-8 build on the earlier examples to link cells together:

- B6 adds the values in B2 and B3 together. If you change either of the values in B2 or B3 the result in B6 will change too.
- B7 and B8 subtract and multiply the values in other cells.
- B9 goes a step further and divides B8 by B3. Note that B8 in turn multiplied B5 and B2 together. So changing the values in either B5 or B2 will have a domino effect, where the value in B8 will change, and so the value in B9 will change too. Note that Excel handles all of this the moment you finish entering a change in either B5 or B2.

3. Highlight your data and 'Insert' your desired graph.

The data I'm working with will look best in a bar graph, so let's make that one. To make a bar graph, highlight the data and include the titles of the X and Y axis. Then, go to the '**Insert**' tab, and in the charts section, click the **column icon**. Choose the graph you wish from the dropdown window that appears. Change the Y axis measurement options, if desired.

To change the type of measurement shown on the Y axis, click on the Y axis percentages in your chart to reveal the '**Format Axis**' window. Here, you can decide if you want to display units located on the **Axis Options** tab, or if you want to change whether the Y axis shows percentages to 2 decimal places or to 0 decimal places.

## **GRAPHICS PACKAGE**

A **graphic package** is an application that can be used to create and manipulate images on a computer.

There are two main types of graphics package:

1. painting packages
2. drawing packages

### **Painting packages**

1. A painting package produces images by changing the color of pixels on the screen.
2. These are coded as a pattern of bits to create a bitmapped graphics file.
3. Bitmapped graphics are used for images such as scanned photographs or pictures taken with a digital camera.

### **Drawing packages**

1. A drawing package produces images that are made up from colored lines and shapes such as circles, squares and rectangles.
2. When an image is saved it is stored in a vector graphics file as a series of instructions, which can be used to recreate it.

## **BECE/ JSCE EXAM AREAS OF CONCENTRATION 2020.**

1. Computer generations
2. Definition and types of computer professionals
3. Definition of computer hardware and types under input and output devices.
4. Components of a system unit
5. Definition of software and types as programs and applications
6. Types of computer programs
7. Types of computer applications.
8. Keyboard short cut keys
9. Digital divide-the old and digital(new)economy.
10. Computer maintenance

