Module 4

Unit 1   Retrieval from the Internet
Unit 2   Evaluation of an Information Systems and Services: Part I
Unit 3   Evaluation of an Information Systems and Services: Part II

Units 1 to 5 of module 1 address the crucial requirements of understanding the characteristics of information and systematic organisation

Units 1 to 4 of module 2 take up the requirements for information processing and storage; while modules 3 and 4 are devoted to the principles of retrieval and evaluation of retrieval performance.

SELF-ASSESSMENT EXERCISES

These are embedded in the text of the study units. You should be able to answer the questions if you study the sections of the units very well.

TUTOR-MARKED ASSIGNMENTS

The tutor-marked assignments will be supplied to you with the units. It is absolutely necessary that you do the assignments and submit your work to your tutor.

ASSESSMENT

There are two aspects of the assessment of this course. The first aspect is the continuous assessment through the tutor-marked assignment. The second aspect is the final examination. The tutor-marked assignments will constitute 30% of the total marks of the examination in this course. The final examination will come at the end of the course. It will be a written examination that reflects the exact content of the course. The questions will not be different from the types you would have already been familiar with in the self-assessment exercises and tutor-marked assignment. The written examination will carry 70% marks.

HOW TO GET THE MOST FROM THIS COURSE

In this programme, you will not be sitting before any lecturer to receive lectures. The study units will replace the lecturer; you will be reading the study units instead of listening to a lecturer. You have the flexibility of being able to work through specially designed course materials at your own pace. You can also choose your time and place of study. The

contents of the units will give you all the information and direction you need.

The units follow the same format. Each unit begins with a table of contents, which tells you at a glance what is covered in the unit. This is followed by an introduction to the subject matter of the unit and the relationship of the unit to the previous unit. Then follows the objectives in which you are told what you should be able to do by the time you complete the unit. It is advised that you use these objectives to guide your study. After the objectives, you come to the main body of the study unit. The text of the reading is presented in a simple direct style to engage your attention and assist your concentration. You are to go through the unit, section after section. Make sure you fully understand a section and that you have done the self-assessment exercise there before going to the next one. The conclusion that follows the main body of the unit gives you an overview of what you would have achieved in the unit. You should also refer to the objectives of the unit to assure yourself that they have been met. If you are not satisfied that you have achieved all that you were expected to achieve, just go through the unit again. The summary of the unit relates what you have learnt in the unit to the subject matter of the next unit, thus building a "bridge" between the two units. In this way you can see a logical connection between all the units.

You will find this course quite interesting and the study units quite readable. The only problem that you need to worry about is your ability to create a conducive environment for your study. You have to work out your timetable, time and place of study; and demonstrate a serious commitment to your study.

SUMMARY

This course should equip you with basic skills in information storage and retrieval. It is neither abstract nor highly theoretical. Both the course aims and objectives have been set out at the beginning of the guide.

They are all realisable and you should not have any problem realising them. It is hoped that you will find the course interesting and challenging and that you will enjoy reading the course material. We wish you brilliant success.

MAIN COURSE

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MODULE 1

UNIT 1   DATA AND INFORMATION

CONTENTS

1.0   INTRODUCTION

You will find out that many people use the terms "data" and "information" in such a way that you would think they mean the same thing. In this unit, you will learn to use the terms correctly; and also to appreciate the value of data and information.

2.0   OBJECTIVES

At the end of this unit, you should be able to:

-      explain the meaning of data
-      explain the concept of data processing
-      explain the meaning of information.

3.0   MAIN CONTENT

3.1   Data

The word "data" is the plural form of the word "datum". Data may be regarded as symbols or figures that have potential value or to which meaning can be given. Now, let us consider how people record events. Think of the old man in the village who made nine strokes of chalk on the lintel of his front door to remind him that it was exactly nine hundred naira that he borrowed. Each time he paid back one hundred naira, he wiped away one stroke, when he was able to pay back a multiple of one hundred naira, he cleaned off the corresponding number of strokes. Would you not consider such a man as well organised? He kept accurate data. He could always tell how much of his debt was outstanding by counting the number of strokes left. Those strokes might not mean anything to someone else but they mean a lot for the old man. Look at the table below and try and make some meaning out of it.

Table 1: Three Ways of Recording Data

	Column 1	Column 2	Column 3
Sunday	∴∴	IIII	12
Monday	∴∴∴	IIII IIII	3
Tuesday	∴∴∴	IIII III	3
Wednesday	∴∴∴∴	IIII I	3
Thursday	∴∴∴	IIII	5
Friday	∴∴	IIII	6
Saturday	∴∴∴	III	7

You may not know the events that were recorded but you can see the frequency of occurrence for each day of the week. Column 1 shows how a little boy recorded the number of cars that came to his father's house during a particular week. Column 2 shows the number of cows a dealer sold in a space of one week. The record was kept by his son. Column 3 illustrates the number of phone calls a young lady received during a particular week.

If you ask all the pupils in a class in a primary school to write their names on a sheet of paper and against their names write their ages, you will have another set of data, namely age distribution of the pupils in the class. The statistical data of the last local government election in 12 wards of a local government is captured in Table 2.

Table 2: Data from a Local Government Election

Ward	Number of Registered Voter	Number of Votes
1	1,567	1,323
2	893	892
3	1,083	995
3	1,002	857
5	1,803	1,635
6	1,337	999
7	1,291	1,295
9	2,002	1,328
10	1,066	993
11	1,153	1,039
12	977	936

Now consider the votes on four motions in a state house of assembly.

The following data were generated.

Table 3:   Data from the Votes on Four Motions in a State House of Assembly

	YES	NO	ABSTENTION
Motion 1	18	7	2
Motion 2	11	12	3
Motion 3	13	8	6
Motion 4	9	17	1

SELF-ASSESSMENT EXERCISE

What do you understand by the term "data"?

3.1.1 Data Processing

To put it simply, data processing is what we do to data in order to make some sense out of them. There are many ways of processing data. We may just inspect data and be able to see a pattern in them. From such a pattern we can make a statement about what has happened and even take a decision. This is visual inspection. Let us apply it to the sets of data in Table 1. The data in column I show that more cars came to the house on Wednesday. Column 2 not only tells us that more cows were sold on Monday, but that sales declined during the rest of the week. From column 3 we can say that the young lady received the highest number of phone calls on Sunday. We can add that she is more likely to receive more calls during the weekend.

We can build much story on the data in Table 2. In each ward, we can compare the number of registered voters with the number of those that voted. Naturally, not everyone who registered could have, voted. We can compute the voting rate for each ward as the percentage of the registered voters who voted. We can find the ward with the highest voting rate and the one that comes next. We can also rank the wards according to the number of registered voters and on the basis of the ranking predict in which wards to expert the highest number of voters. Now, here is a sticky point: what do you say when the number of voters is higher than the number who registered? A big mistake somewhere or what?

Now let us turn to Table 3. Can you say something about the popularity of the four motions? Obviously, motion 1 was the most popular. Motion 2 must have been highly controversial. Motion 4 was highly unpopular.

Besides visual inspection, rearrangement or sorting, data processing could take the form of arithmetic processes such as computing the sum or mean. Statistical techniques may also be used to show how much the data deviate from some reference value or the relationships within the data. Then we are able to make statements about the data as well as generalise our observations to other similar situations. Suppose we found that out of 420 boys that sat for mathematics in   SSSE, 303 passed with credit and above; whereas out 392 girls who sat for it the number who passed with credit and above was 121. Then we can at least say that boys do much better than girls in mathematics in that school. If we collected our data from a number of schools across the country and got the same pattern, then we can say that in Nigeria, boys are better in mathematics than girls provided   that the data were generated properly.

It is difficult to estimate the volume of information a person handles everyday. Unless a person is sleeping, his or her brain is always busy processing data and handling information. The brain receives both data and information through the eyes, for instance from what the person reads or sees; through the ears, for instance from what the person hears or listens to; through the nose, for instance from what the person smells, and through the senses of touch, exposure, physical contact and taste.

SELF-ASSESSMENT EXERCISE

Name four ways of processing data.