DIFFERENTIATE BETWEEN DATA AND INFORMATION:

Introduction

We live in the information age. In the same way that the development of industry created the industrial age, the development of information technology systems, and especially the internet, has created the information age. It has been a long-held belief by many philosophers that knowledge is power and that knowledge stems from understanding of **information**; information, in turn, is the assigning of meaning to **data**. To develop learners' understanding of information technology, we start by defining these two related concepts. The topics are hierarchical in that:

Data

What is data?

The concept of data is commonly referred to as 'raw' data – a collectionof text, numbers and symbols with no meaning. Data therefore has to be processed, or provided with a context, before it can have meaning.

Example

- 3, 6, 9, 12
- cat, dog, gerbil, rabbit, cockatoo
- 161.2, 175.3, 166.4, 164.7, 169.3

These are meaningless sets of data. They could be the first four answers in the 3 x table, a list of household pets and the heights of 15-year-old students but without a context we don't know.

Information

What is information?

Information is the result of processing data, usually by computer. This results in facts, which enables the processed data to be used in context and have meaning. Information is data that has meaning.

When does data become information?

Data on its own has no meaning. It only takes on meaning and becomes information when it is interpreted. Data consists of raw facts and figures. When that data is processed into sets according to context, it provides information.

Data refers to raw input that when processed or arranged makes meaningful output. Information is usually the processed outcome of data. When data is processed into information, it becomes interpretable and gains significance.

In IT, symbols, characters, images, or numbers are data. These are the inputs an IT system needs to process in order to produce a meaningful interpretation. In other words, data in a meaningful form becomes information. Information can be about facts, things, concepts, or anything relevant to the topic concerned. It may provide answers to questions like who, which, when, why, what, and how.

If we put Information into an equation it would look like this:

Data + Meaning = Information

Example

Looking at the examples given for data:

- 3, 6, 9, 12
- cat, dog, gerbil, rabbit, cockatoo
- 161.2, 175.3, 166.4, 164.7, 169.3

Only when we assign a context or meaning does the data become **information**. It all becomes meaningful when we are told:

- 3, 6, 9 and 12 are the first four answers in the 3 x table
- cat, dog, gerbil, rabbit, cockatoo is a list of household pets
- 161.2, 175.3, 166.4, 164.7, 169.3 are the heights of 15-year-old students.

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