



CSCA0102

IT and Business Applications

Chapter 4

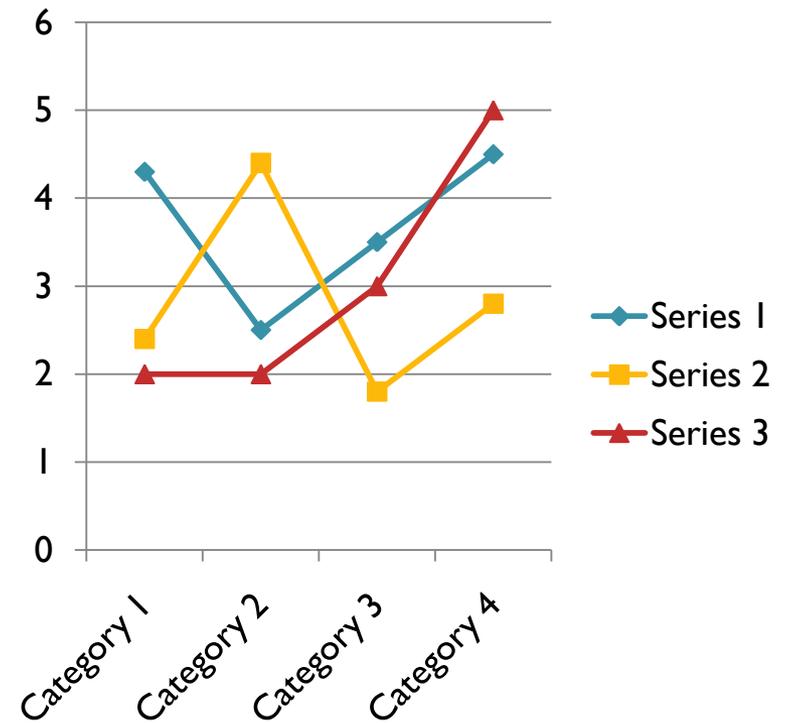
Data and Information

Data and Information

Data	Information
<p>Data is raw, unorganized facts that need to be processed. Data can be something simple and seemingly random and useless until it is organized.</p>	<p>When data is processed, organized, structured or presented in a given context so as to make it useful, it is called Information.</p>

Data and Information

	Series 1	Series 2	Series 3
Category 1	4.3	2.4	2
Category 2	2.5	4.4	2
Category 3	3.5	1.8	3
Category 4	4.5	2.8	5



Data and Information

The characteristics of Valuable Information

- **Accurate:** Accurate information is error free.
- **Complete:** Complete information contains all the important facts to make clear decisions.
- **Economical:** Information should also be relatively economical.
- **Flexible:** Flexible information can be used for a variety of purposes.
- **Reliable:** Reliability of information describes the correctness of the information.

Data and Information

The characteristics of Valuable Information

- **Relevant:** The relevance of information is determined based on the usefulness of information with respect to the decision making process.
- **Simple:** Simplicity in the representation of information is also a very useful feature utilized to improve the usability of information in the decision making process.
- **Timeliness:** Decisions should be made at the right time to achieve effectiveness.
- **Verifiable:** If it is possible to confirm the reliability of the information about its correctness (validate), it becomes verifiable Information.

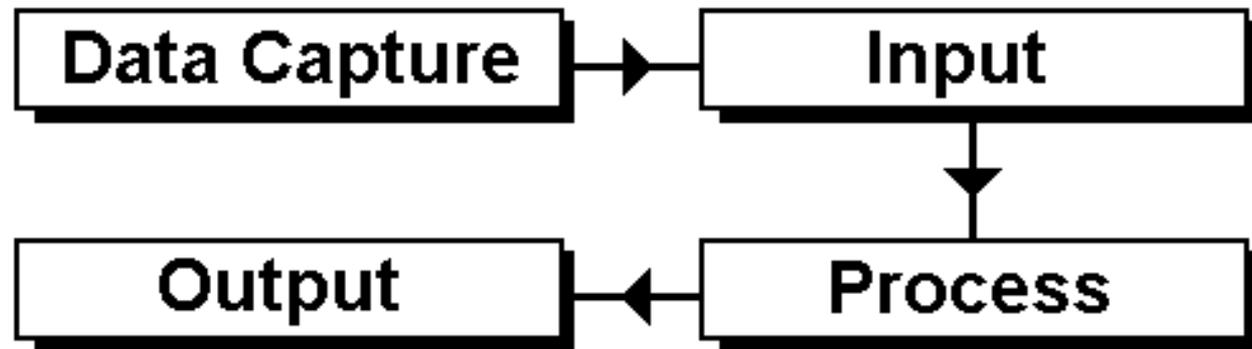
Data and Information

The characteristics of Valuable Information

- **Accessible:** Accurate information plays a major roll in the decision making process of any organization.
- **Secure:** the value of information could be lost due to issues such as unauthorized user access or intentionally damaging its existence.

Data Processing Cycle

- Data processing is the re-structuring or re-ordering of data to increase their usefulness & add values for particular purpose.

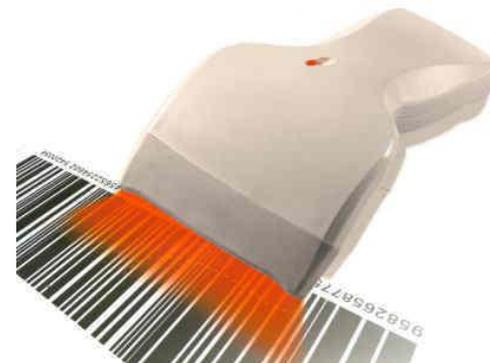


Data Processing Cycle

Data Capture

- There are several different ways that a computer can obtain its data for processing, examples:
 - from a source document such as a questionnaire.
 - from an input device such as a heat sensor or scanner.

Morphology			
Second person plural			
(1) <i>What are youse up to?</i>		(plural form for <i>you</i> , 1)	
no problem	a bit strange	unacceptable	something else, short comment:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) <i>What were yez up to?</i>		(plural form for <i>you</i> , 2)	
no problem	a bit strange	unacceptable	something else, short comment:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) <i>Are ye going out tonight?</i>		(plural form for <i>you</i> , 3)	
no problem	a bit strange	unacceptable	something else, short comment:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Negation of auxiliaries			
(4) <i>Ain't I leaving soon anyway?</i>		(negative of 1 p sg of <i>be</i> , 1)	
no problem	a bit strange	unacceptable	something else, short comment:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) <i>Aren't I right after all?</i>		(negative of 1 p sg of <i>be</i> , 2)	
no problem	a bit strange	unacceptable	something else, short comment:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrative pronouns			
(6) <i>Them shoes are too small for me.</i> (<i>them</i> as demonstrative pronoun)			
no problem	a bit strange	unacceptable	something else, short comment:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Data Processing Cycle

Data Capture

- **Verification** is the process of checking that the data has been correctly entered into the computer.
- **Validation** takes place before the **processing stage** and its purpose is to check that data is of the correct type.

Data Processing Cycle

Input

- The process of feeding data into a computer for processing, examples:
 - Entry from a keyboard.
 - Direct entry from other input devices such as floppy disk drives or hard disk drives.



Data Processing Cycle

Process

- This can involve calculation, analysis, comparison, data manipulation, sorting, searching, transformation of data (for example presenting numerical data as graphs), etc.
- Three types of processing:
 - Batch
 - Interactive
 - Real Time

Data Processing Cycle

Process

- This can involve calculation, analysis, comparison, data manipulation, sorting, searching, transformation of data (for example presenting numerical data as graphs), etc.
- Three types of processing:
 - Batch
 - Interactive
 - Real Time

Data Processing Cycle

Batch Processing

- Executing a series of non-interactive jobs all at one time.
- Examples:
 - A stock control programme may store records of every item sold in a shop that day.
 - Electricity, gas and telephone bills are usually calculated on a monthly basis.
 - Producing monthly bank statements to send out to customers.

Data Processing Cycle

Interactive Processing

- Interactive processing means that the person needs to provide the computer with instructions whilst it is doing the processing.
- Interactive processing takes place one transaction at a time.
- Examples:
 - Booking pop concert tickets
 - Ordering books online
 - Handling bank accounts
 - Booking a holiday

Data Processing Cycle

Real-time Processing

- Real time processing is usually found in systems that use computer control.
- Examples:
 - Traffic lights
 - Heart rate monitoring
 - Aircraft control
 - Computer games
 - Controlling robots

Data Processing Cycle

Real-time Processing

- Real time processing is usually found in systems that use computer control.
- Examples:
 - Traffic lights
 - Heart rate monitoring
 - Aircraft control
 - Computer games
 - Controlling robots

Data Processing Cycle

Processing Stages

- Summarizing
- Computing Averages
- Graphing
- Creating Charts
- Visualizing Data

Data Processing Cycle

Output

- Output is what we call the results that are produced by processing data.
- Output can take many forms such as text, sound, tables of data, graphs, commands to a device such as a robot, etc.

Data Processing Cycle

Output

- Depending on the form of output required, the data can be transmitted by a range of devices for presentation. For example:
 - **Screen** - it can be displayed on a monitor screen. Many companies offer their customers the chance to have electronic bills delivered over the Internet, either by email or on a web page.
 - **Paper** – Information for customers, like bills or statements, is normally outputted in printer form.
 - **File** – Instead of outputting data to a printer or displaying it on the screen, it can be saved in digital form on disk or tape.
 - **Other** - displayed via a data projector, transmitted via an interface to another machine, exported to another software application, etc.