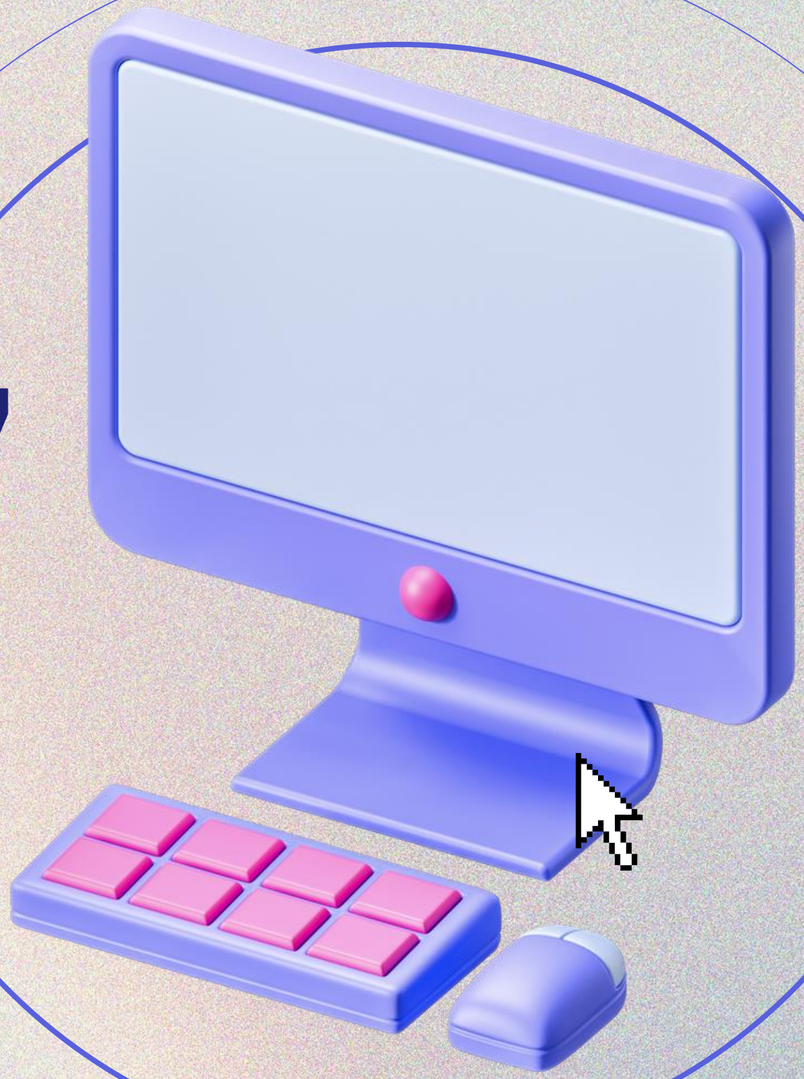
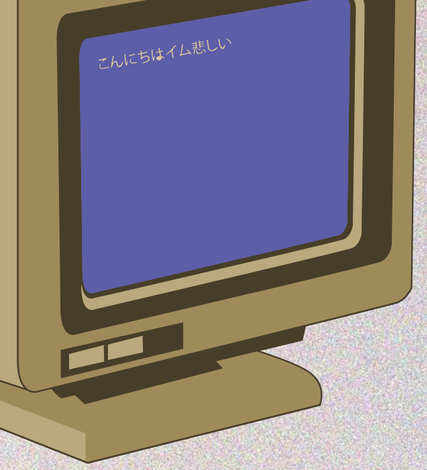
DATA, INFORMATION, AND INFORMATION SYSTEMS

By Gabriel A. Castro

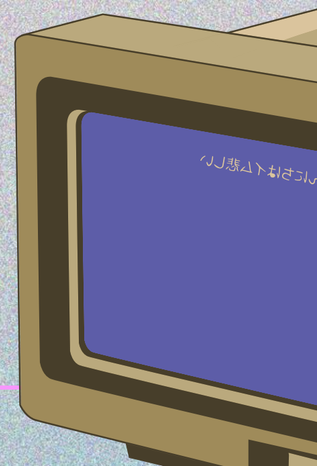


DATA AND INFORMATION



DATA

Data is a collection of raw, unorganized facts and details like text, observations, figures, symbols and descriptions of things etc. In other words, data does not carry any specific purpose and has no significance by itself. Moreover, data is measured in terms of bits and bytes – which are basic units of information in the context of computer storage and processing.

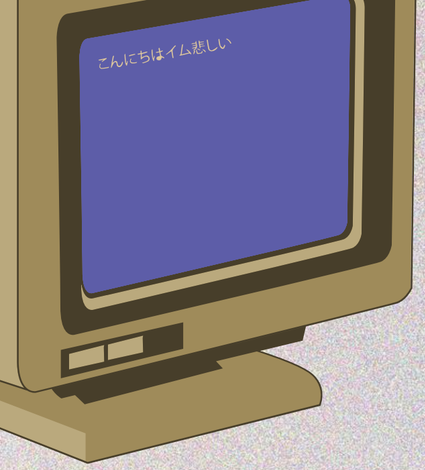


https://byjus.com/biology/difference-between-data-and-information/

DATA

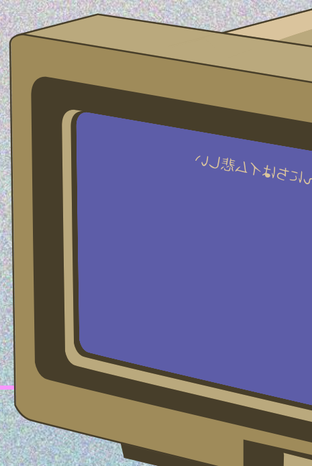
- Data is a singular unit of knowledge. It has no intrinsic value on its own. We can't extract meaning out of it, without knowing more about it.
- Data comes in various forms:
  - **Quantitative data**, like an item's weight, volume, or cost, is provided numerically.
  - **Qualitative data** is descriptive but non-numerical, such as a person's name and sex.
- Data is often abundant and readily available but can be overwhelming without interpretation.
- **Databases** hold the information that the user regularly retrieves to complete essential operations, like saving a file's contents and accessing them. Data warehouses, on the other hand, store data collected from multiple sources over time to be analyzed and used to inform decisions.

https://bloomfire.com/blog/data-vs-information/ *https://zapier.com/blog/what-is-information-systems/*
https://flaviocopes.com/data-information/



INFORMATION

Information is processed, organised and structured data. It provides context for data and enables decision making. For example, a single customer's sale at a restaurant is data – this becomes information when the business is able to identify the most popular or least popular dish.



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INFORMATION

- **Information** is something that we can link to data, to be able to attach a meaning to it.
- Information provides context and insights, like a trend analysis that shows increasing customer satisfaction or sales figures over time.
- Data is often abundant and readily available but can be overwhelming without interpretation.

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INFORMATION SYSTEMS

INFORMATION SYSTEMS

information system, an integrated set of components for collecting, storing, and processing data and for providing information, knowledge, and digital products. Business firms and other organizations rely on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace. Information systems are used to run interorganizational supply chains and electronic markets.

https://www.britannica.com/topic/information-system

INFORMATION SYSTEMS

- An **information system** is the group of procedures and resources we use to gather, store, process and communicate the information needed in an organization.
- For (Howarth, 2005), **formal information systems** consist of rules and procedures.
- While **informal information systems** rely on common practice and common sense of the organization's employees.
- Informal information systems usually arise from restraints or inadequacies of the formal system.
- **Telecommunications** is how computers share information with each other. Telecommunications makes it possible to access data via the cloud—without these systems in place, all data would have to be stored on one device.

https://www.scitepress.org/PublishedPapers/2013/44010/44010.pdf *https://zapier.com/blog/what-is-information-systems/*
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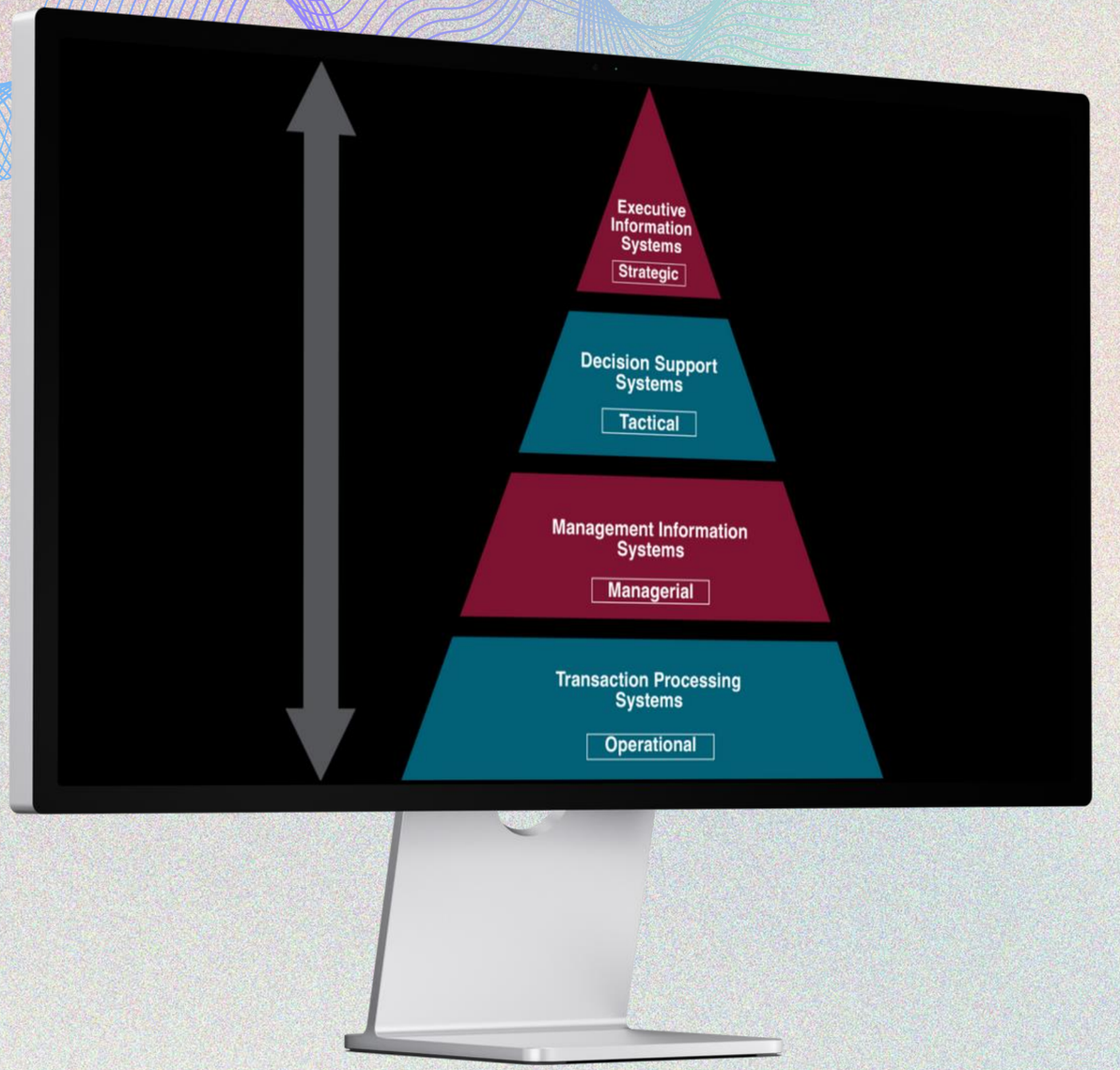
DIFFERENT TYPES OF SUPPORT SYSTEMS IN INFORMATION SYSTEMS



TYPES OF SUPPORT SYSTEMS

A decision support system (DSS) is a computer program application used to improve a company's decision-making capabilities. It analyzes large amounts of data and presents an organization with the best possible options available.

Decision support systems bring together data and knowledge from different areas and sources to provide users with information beyond the usual reports and summaries. This is intended to help people make informed decisions.

https://www.techtarget.com/searchcio/definition/decision-support-system

EXECUTIVE INFORMATION SYSTEM

An Executive Information System (EIS), also recognized as an Executive Support System (ESS), functions as a management support tool designed to aid and bolster the informational and decision-making requirements of senior executives. It ensures streamlined access to both internal and external data pertinent to the objectives of the organization.

https://collegehive.in/docs/4th_sem/site/ISEB/Unit-1%20Foundation%20of%20Information%20Systems/1.d%20Types%20of%20Information%20System.html

DECISION SUPPORT SYSTEM

A Decision Support System (DSS) is a crucial information system designed to aid the decision-making processes within a business or organization. It caters to the needs of management, operations, and planning across various organizational levels, primarily targeting mid to upper management. DSS is instrumental in facilitating decision-making for issues that are complex, evolving, and not predefined—covering both unstructured and semi-structured problem areas.

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MANAGEMENT INFORMATION SYSTEM

A Management Information System (MIS) integrates computer hardware and software serving as the cornerstone for an organization's operational framework. It aggregates data from diverse online sources, aiding in managerial decision-making by analyzing and reporting the information systematically. The primary objective of an MIS is to furnish executives with insights into their performance, enabling higher management to oversee the organization's operations comprehensively.

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OFFICE AUTOMATION SYSTEM

Office Automation Systems (OAS) also known as office information systems, are built upon computer-based information systems and designed to improve the productivity of data workers by automating the management of documents, scheduling meetings, and communication. These systems comprise a suite of tools designed to collect, process, store, retrieve, and share information among individuals, teams, and between the organization and external parties.

https://collegehive.in/docs/4th_sem/site/ISEB/Unit-1%20Foundation%20of%20Information%20Systems/1.d%20Types%20of%20Information%20System.html

TRANSACTION PROCESSING SYSTEM

The term Transaction Processing System (TPS) denotes an information processing system designed for managing all business transactions. This includes altering, gathering, and fetching transaction-related data. Known for its remarkable consistency, efficiency, and reliability, TPS is the go-to system for online businesses engaging in e-commerce activities. It treats every transaction uniformly, disregarding variations in timing, users, or customers involved, thereby ensuring peak operational efficiency.

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ANALYSIS/ REACTION

In today’s technological society, data, information, and information systems have played important roles in the operation and productivity of organizations worldwide. The more I have delved into these topics, the more I have been able to appreciate the link between data, information, and support systems that are common in most modern information systems. Thus, data provision may be viewed as the somewhat aggregation that lays the foundation for information as a substance. Based on the way all notions were defined, knowledge is obtained from information after it has been processed or analyzed and given context, so as to make it relevant for decision-making. Information systems on the other hand give the structural aspect in the acquisition, processing, and storage of such information. In information systems, decision support systems such as Decision Support Systems (DSS), Management Information Systems (MIS), and Executive Information Systems (EIS) help to support decision-making at different levels in the organization of many workplaces or corporations around the world. DSSs offer the users the process of data analyzing tools to assist in problem-solving, MISs are centered around the enhancement of operations through reporting while providing summaries, and EISs are designed for executives by giving them an overall impression of KPIs. Such support systems help guarantee that decisions made are informed and as such are with the organizational strategy. As society becomes more dependent on technology and all things digital, the need for knowledge in data, information, and information systems will rise. This knowledge is important to the current and future technological society and development as more responsibilities are placed on the laps of individuals and organizations. In moving into the next generation, all these ideas again have not lost their importance and therefore, it becomes vital that individuals and business organizations are able to develop sufficient knowledge in these areas.

THANK YOU!