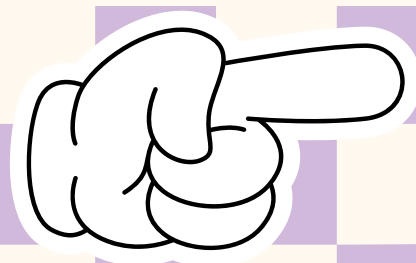


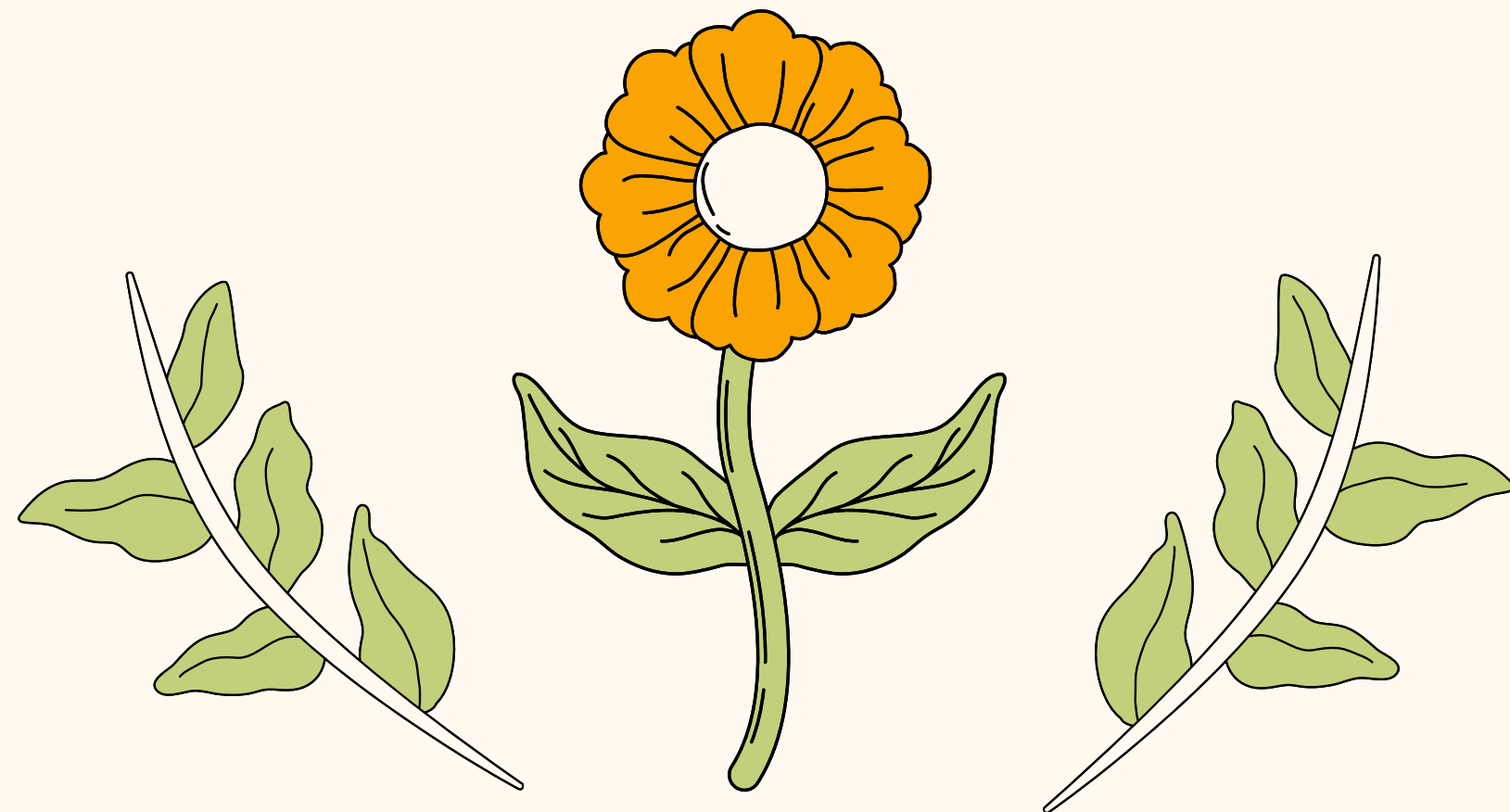
PORTFOLIO #2

# ***Data and Information Systems***

BY CLYDD HARVEY DIOCAMPO



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Information Systems

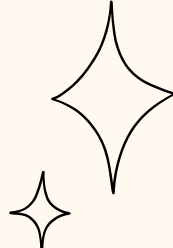
Support Systems in Information  
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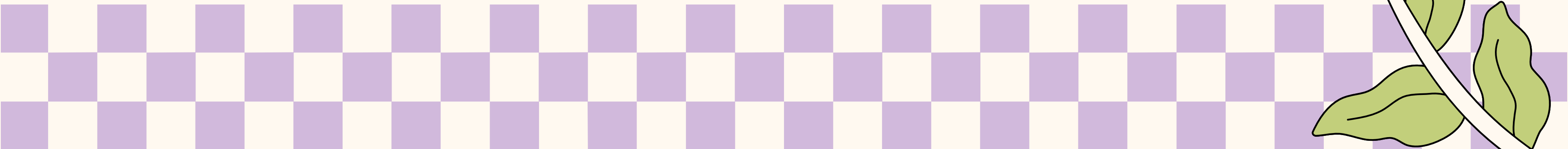
# ***What is data?***



**Data** is the type of information computers can process and understand. It is used to store a variety of variables like numbers, words or measurements, observations or even description of items.

Data is typically stored electronically in the form of files or databases

Data can come from multiple sources which includes user input, sensors or algorithms.



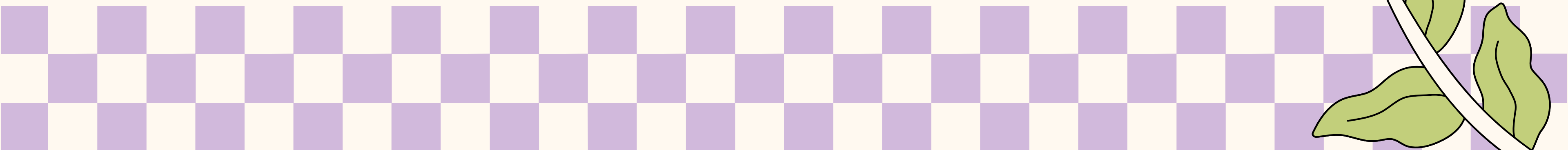


# *How data is stored*



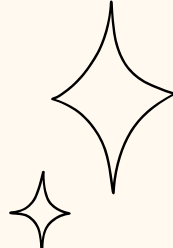
Computers represent data which encapsulates all kinds of videos, images, sounds and text using binary patterns of just two numbers: 1 and 0.

Data can be stored in file formats as in mainframe systems using Indexed Sequential Access Method (ISAM) and Virtual Storage Access Method (VSAM) Other file formats for data storage, conversion and processing include comma-separated values.



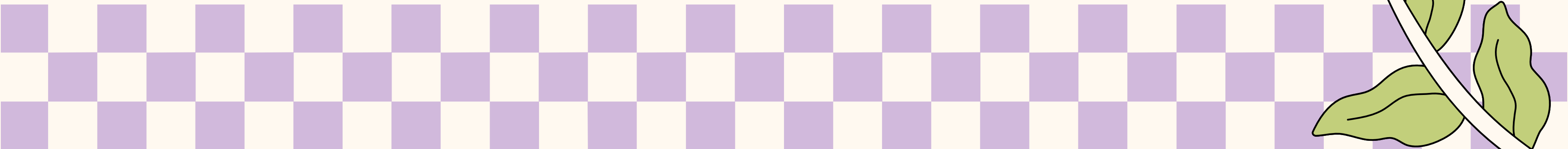
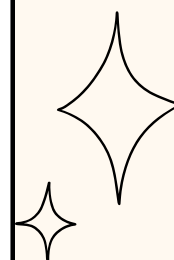


# ***Information***



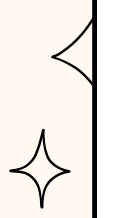
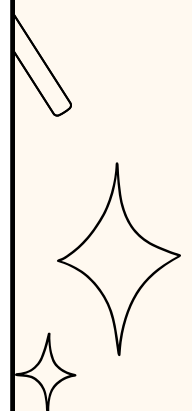
**Information** is the end product of data processing, be it by analysis, contextualization, structure, interpretation, or other methods. Data gains meaning and value from information. It is essential for system designs, strategic planning, problem-solving, and decision-making. It also makes understanding, communication, and learning easier.

**Information** can simply be said to be processed data that has been given meaning. The data has been assigned with a context to make it meaningful.

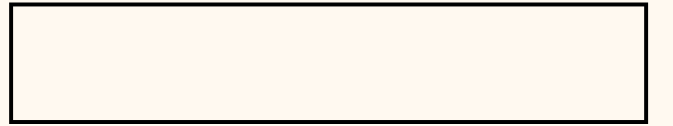




# ***Types of Information***

- 
- **Conceptual.** Information that is based on ideas, concepts, theories, hypotheses and other abstract notions or beliefs.
  - **Empirical.** Information that is obtained through observation, experimentation and other verifiable methodologies.
  - **Procedural.** Information that describes how to carry out a procedure or that someone already possesses through knowing how to perform a task.
  - **Policy.** Information that is related to laws, regulations, rules, guidelines, policies and other types of oversights whose purpose is to inform and enable more effective decision-making.
  - **Directive.** Information that provides directions or descriptions to individuals or groups so they can better understand concepts or circumstances.
  - **Stimulatory.** Information that is intended to provoke a response, stimulate a reaction or in other ways motivate individuals or groups to take action.
- 

# ***Data Vs. Information***



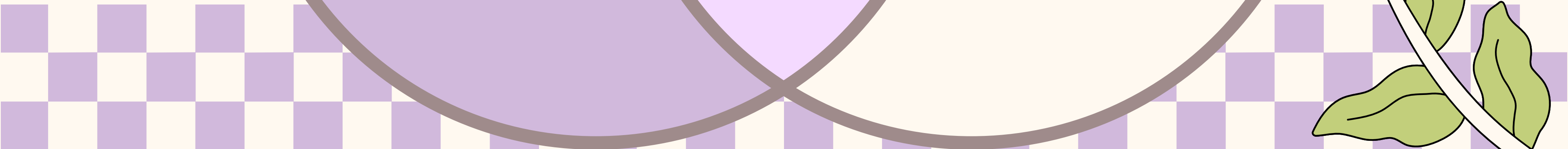
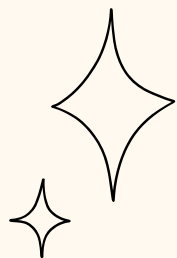
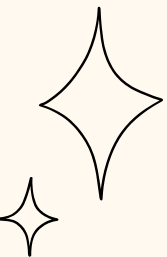
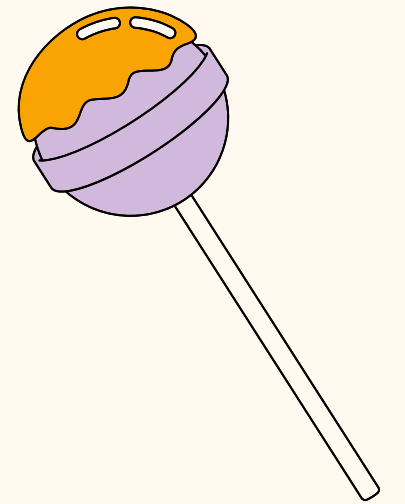
## ***Data***

- Represents raw data and unprocessed facts
- Abundant and readily available but may be overwhelming without interpretation
- May be quantitative (numerical) or qualitative (descriptive)

- Used to support decision-making
- Can be conveyed in various formats

## ***Information***

- Organized and interpreted
- Easily comprehensible, providing context and insight
- Is curated and actionable



# ***Information Systems (IS)***

An **information system (IS)** is an interconnected system comprising components that collect, store, process, and transmit both digital and analog information. It integrates technology, software, data, personnel, and procedures to convert raw data into actionable insights. This collaborative framework supports various business goals, including enhanced customer service and heightened productivity.

Effective information systems are critical in the modern business landscape, enabling organizations to stay competitive and responsive to market changes. Through the use of advanced analytics and real-time data processing, these systems can identify trends, predict outcomes, and support strategic decision-making.



# *How does an IS work?*

An IS is a potent instrument that can combine a wide range of tasks. IT departments can efficiently gather, store, process, and distribute information for a range of uses by linking system components.

1. **Input.** The system gathers information and data from a variety of sources, including databases, scanners, keyboards, and sensors.
2. **Processing.** Sorting, categorizing, calculating, analyzing, and synthesizing are some of the processes the system uses to transform the raw data into information that makes sense.
3. **Storage.** The system uses a file system, database, or cloud storage to store the processed data in an organized and safe manner.

# *How does an IS work?*

4. **Output.** The information is displayed to users by the system in a format that is easy to use, such as reports, graphs, charts, or dashboards.

5. **Feedback.** Users' and other stakeholders' feedback is gathered by the system to assess its effectiveness and make design and functional improvements.

# *Components of IS*

## **Hardware**

The physical components of an information system make up the hardware component. Hardware is made available for people to touch and feel. The operation of systems like computers, cellphones, and tablets is made possible by these gear, mechanisms, and wiring.

The fundamental technological components that enable communication between people and computers and other information systems are input and output devices. Input devices include things like keyboards, mouse, microphones, and scanners, among others. Additionally, output devices could be sound and video cards, speakers, printers, monitors, and monitors.

# *Components of IS*

## **Software**

The intangible programs known as software are responsible for controlling input, output, processing, and storage in an information system. Applications designed for specific information system uses are operated by application software. For instance, text documents are created and edited using word processing software. One of the most widely used types of application software is the graphical user interface (GUI), which shows the data stored in computers and enables users to interact with them using digital graphics instead of text-based commands.

# *Components of IS*

## **Telecommunications**

Computer networks are connected by telecommunications systems, which also enable data transmission through them. Computers and storage services can also access information from the cloud over telecommunications networks.

Telecommunications networks transmit information in a variety of ways. Telephone, internet, and cable companies use coaxial and fiber optic connections to send voice, video, and data information.

# ***Roles of IS***

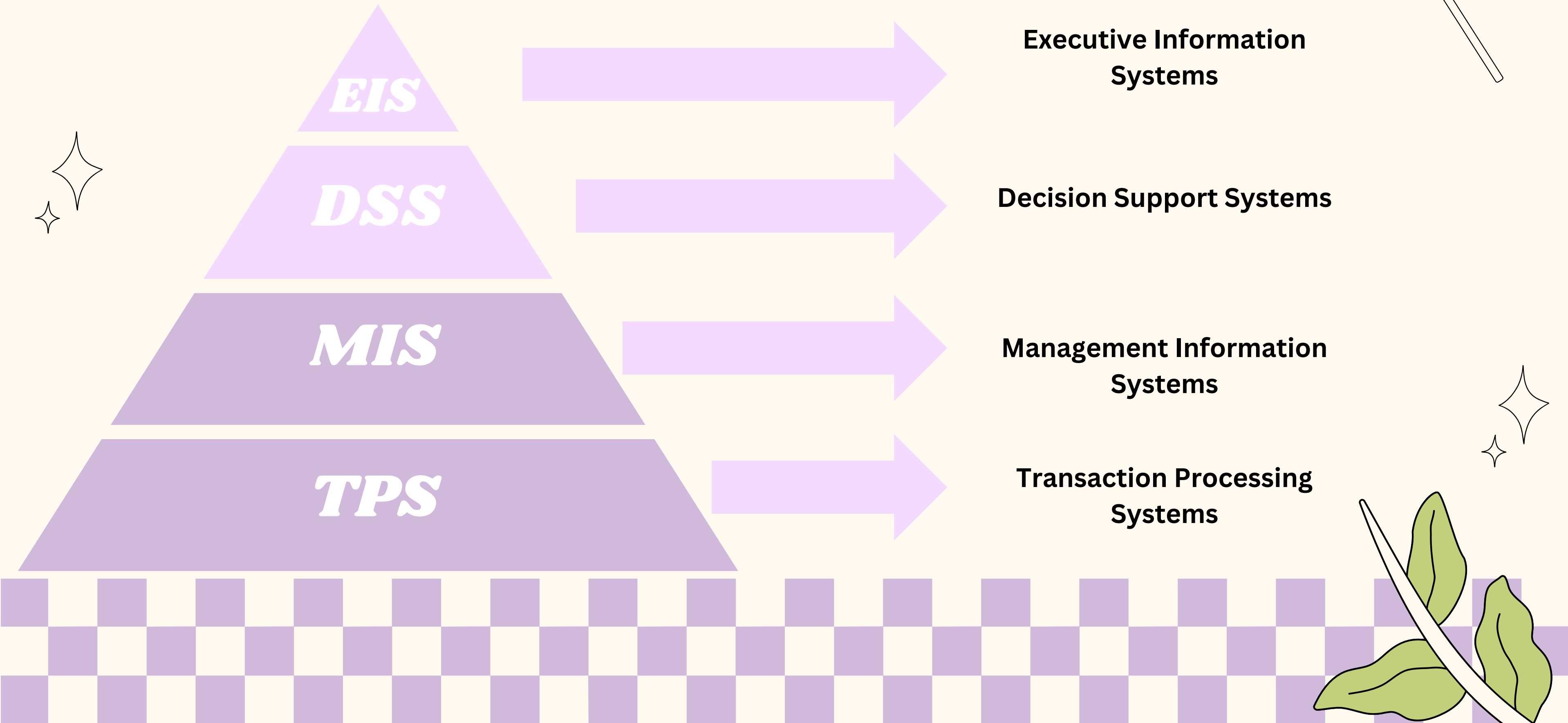
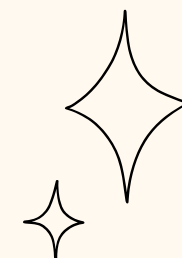
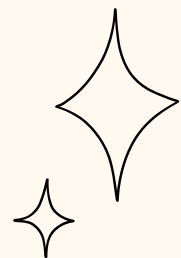
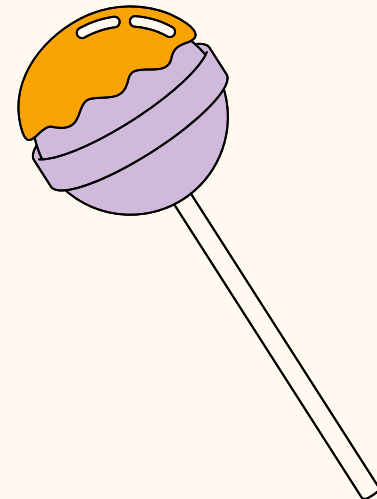
An information system's objective is to convert data into information so that knowledge that can be used to decision-making can be produced. Information needs qualities to guarantee quality in order to be valuable to a business and decision maker. The following qualities must be present in order to add value.:

- **Accessible:** Must be easily accessible by users to meet their needs in the right format at the right time. Access should be secure and prevent unauthorized access.
- **Consistent:** Contains no discrepancies, and the same measurements or structure are used regardless of the data source.
- **Complete:** Contains all information and is not missing anything.

# ***Roles of IS***

- **Timely:** Delivered when needed.
- **Accurate:** Free of errors and bias, and can be verified or validated.
- **Cost:** Balance the value of information to the cost of producing it.
- **Relevant:** Important to decision makers.
- **Clear:** Not overly complex, easy to understand.

# ***Support Systems***





# ***Decision Support System***

A **Decision Support System**, sometimes known as a **DSS**, is a type of specialized information technology made to help businesses make decisions. It offers a structure for obtaining data from both internal and external sources to aid in decision-making. Although decision support systems come in a wide variety, they are typically employed to solve less structured situations.

# ***Management Information System***

Managers benefit from the **Management Information System's (MIS)** assistance in automating several manual tasks. Business-related tasks include measuring and analyzing business performance, defining workflow, making business choices, and creating business plans. It also analyzes the roles and duties and gives the management feedback.

# ***Transaction Processing System***

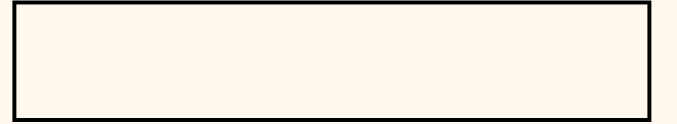
The process of collecting, altering, and retrieving transactions is automated by the **Transaction Processing System (TPS)**. This kind of information system is unique in that it improves the efficiency, uniformity, and dependability of commercial transactions. It facilitates hassle-free daily operations for enterprises.

# ***Executive Information System***

Similar to the MIS, but for executive-level decision-making, is the **Executive Information System (EIS)**. The judgments require greater knowledge and judgment because they involve issues that affect the entire firm.

Compared to the DSS, the ESS offers more computer power, more efficient display options, and increased communication. With the usage of ESS, executives can effectively make judgments based on condensed internal data from MIS, DSS, and outside sources.

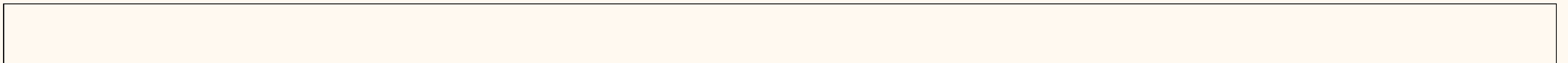
# ***Reflection/Analysis***



In the ever-evolving landscape of computer science, data and information are the foundations for innovation and progress. Data is an unprocessed collection of facts and figures, often overwhelming due to its sheer volume and complexity. However, when this data is organized, analyzed, and contextualized, it transforms into information, which is a powerful tool that aids in decision-making. This transformation is the heart of what makes information systems essential to organizations. The ability to turn raw data into actionable information is what empowers businesses to adapt, innovate, and thrive in an increasingly complex world.

Information systems serve as the critical infrastructure that manages this flow and acts as a bridge between data and information. These systems are dynamic ecosystems that connect data, processes, and people, enabling organizations to operate efficiently and make informed decisions. Information systems encompass a wide range of technologies and methodologies, all working together to ensure that the right information reaches the right people at the right time. This is important for supporting everything from routine operations to high-level strategic planning. When I eventually enter the business world and act side by side among other organizations and companies, this knowledge can act as a supporting guide for future endeavors.

Central to any information system are its support systems, which are designed to enhance decision-making and problem-solving across various levels of an organization. These support systems come in different forms, each tailored to specific needs. firstly is the transaction processing systems (TPS) handles the day-to-day operations, managing tasks such as payroll, order processing, and inventory management. secondly, management information systems (MIS) build upon the data gathered by TPS, offering managers the insights they need to monitor performance and make informed decisions. thirdly decision support systems (DSS) go a step further, aiding in complex decision-making processes. DSS uses data, analytical models, and simulation tools to explore different scenarios and predict outcomes, allowing managers to make strategic decisions with greater confidence. And lastly, Executive Information Systems (EIS) cater to senior executives, providing them with high-level summaries and trend analyses to guide long-term planning and organizational vision.



# ***Reflection/Analysis***

Together, these support systems form the backbone of modern information systems, enabling organizations to leverage data and information effectively. As technology continues to evolve, the capacity to manage and utilize data through complex information systems will remain crucial. The true power of these systems lies not just in the technology itself but in the human ingenuity that designs and applies them. By embracing this potential, we can drive meaningful progress and shape a future where technology serves as a force for good, enriching lives and empowering communities.



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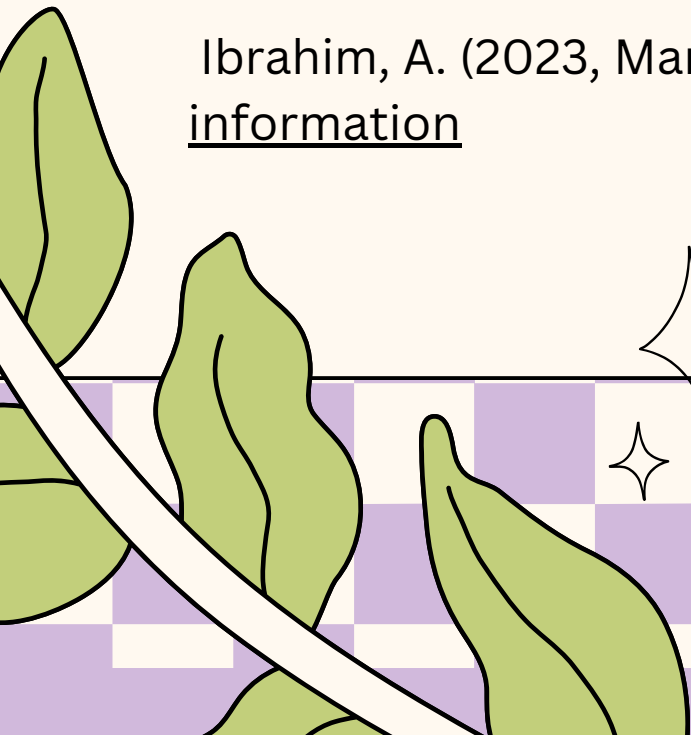
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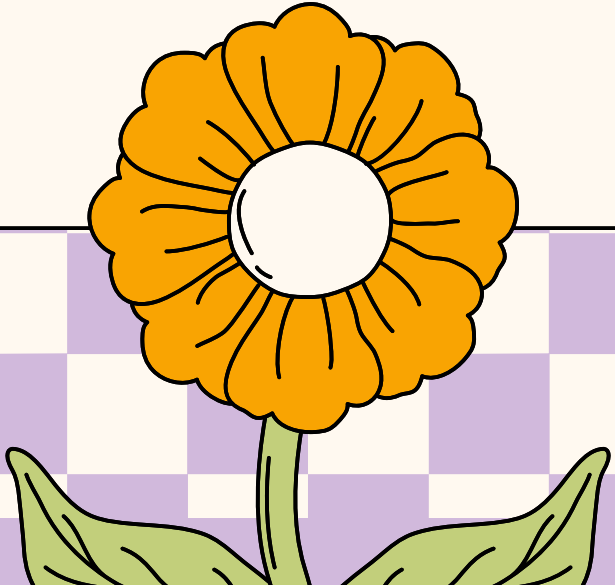
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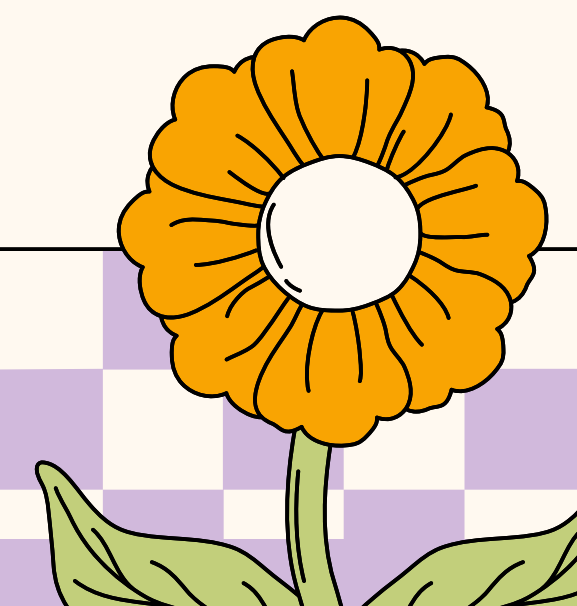
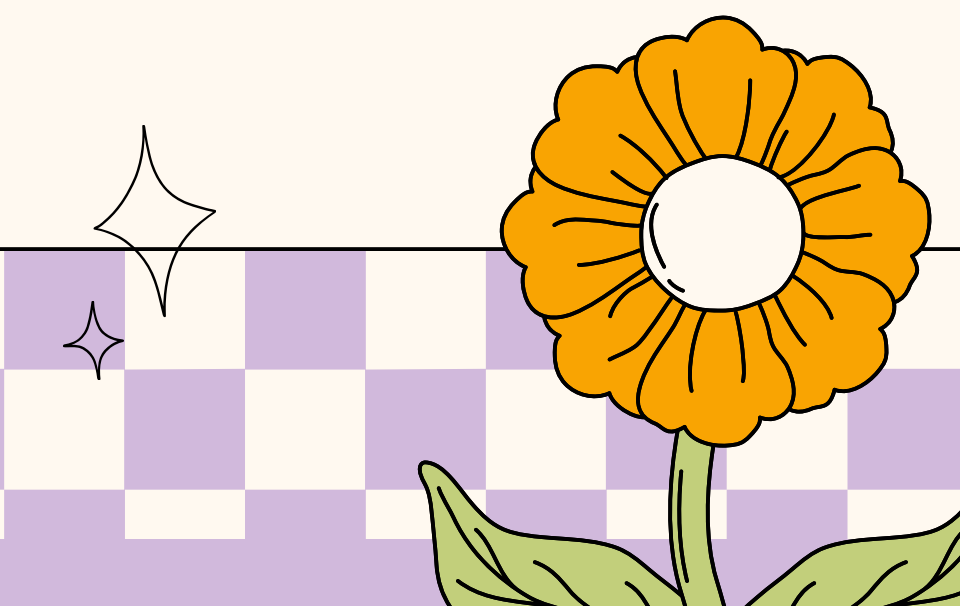
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