
ABAO, HERSCHEAY

PORTFOLIO

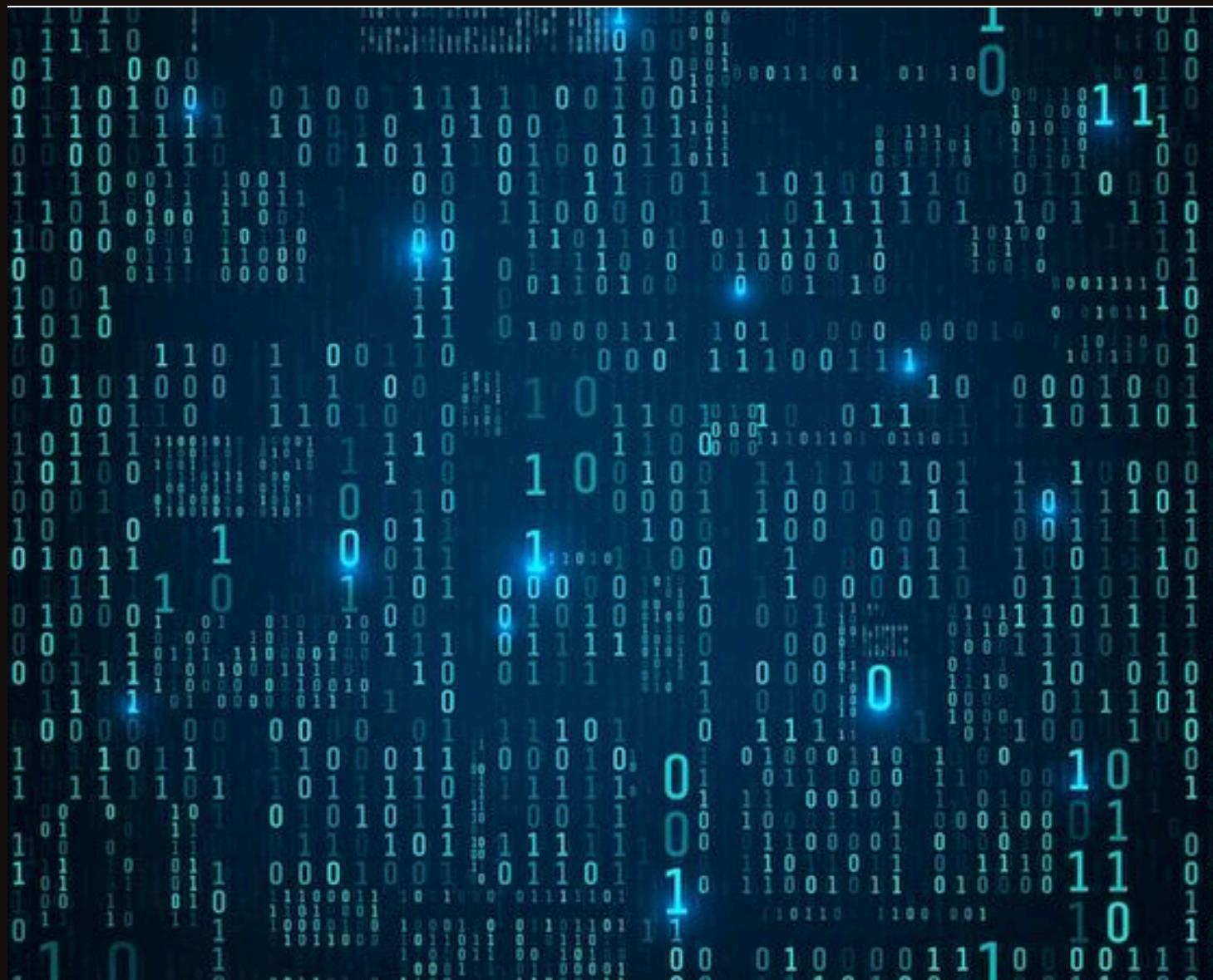
DATA, INFORMATION, AND INFORMATION SYSTEMS





- 1 WHAT IS A DATA?**
- 2 WHAT IS INFORMATION?**
- 3 WHAT IS AN INFORMATION SYSTEM?**
- 4 CONCLUSION**
- 5 REFERENCES**

WHAT IS A DATA?



- The concept of data in computing originated from Claude Shannon, known as the father of information theory.
- Data became significant in business computing with the rise of terms like "data processing" and "electronic data processing", which later evolved into information technology.
- In computing, data refers to information translated into a form efficient for movement or processing.

WHAT IS A DATA?



- Data is stored as binary values (1s and 0s), representing information like video, images, sounds, and text.
- A bit is the smallest unit of data, and a byte is made up of eight bits.
- Storage and memory are typically measured in units like megabytes (MB) and gigabytes (GB), with larger units such as the brontobyte (10^{27} bytes) for massive data storage.

HOW IS IT STORED?



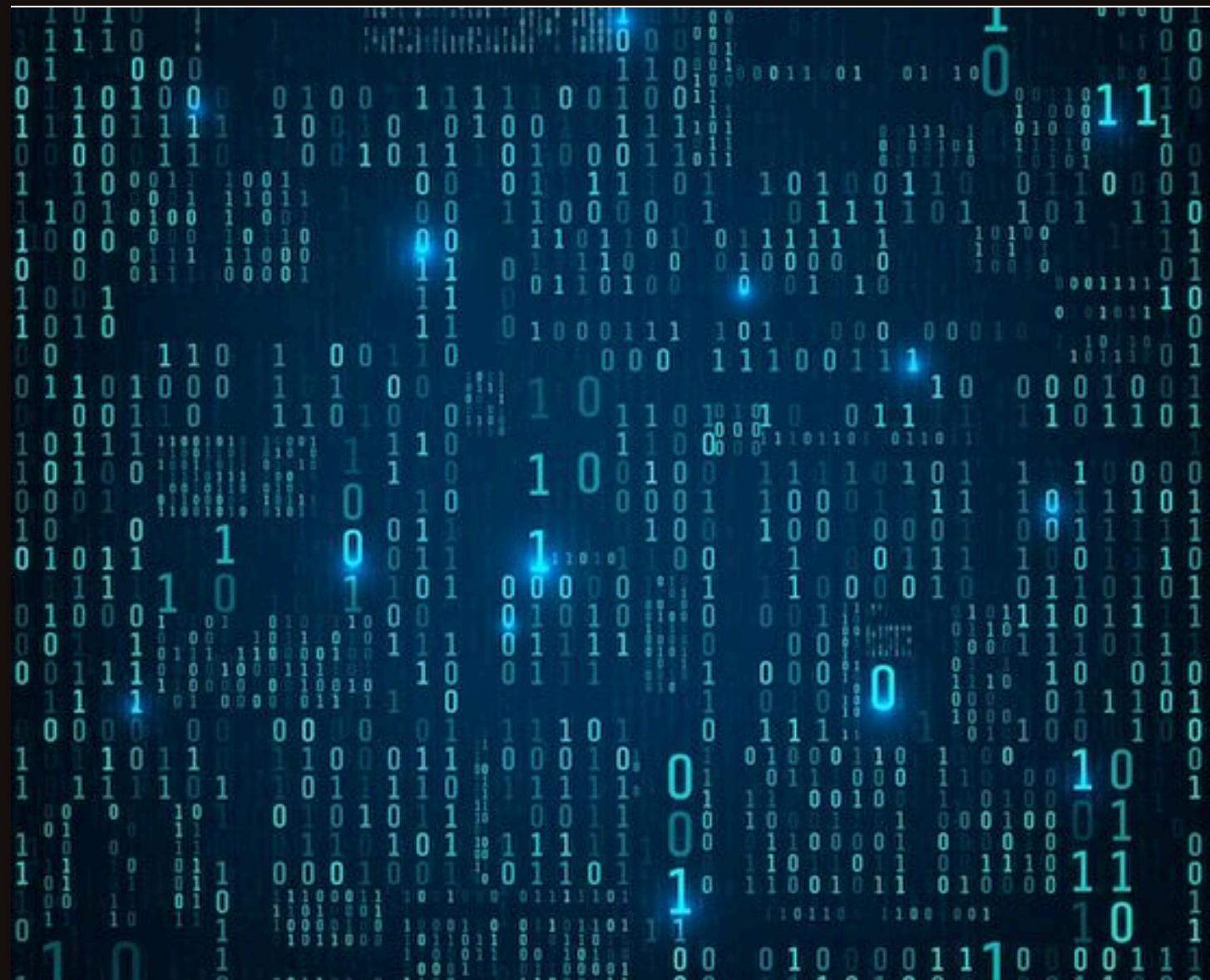
- Data is stored in various file formats, such as ISAM and VSAM on mainframe systems.
- Other file formats include comma-separated values (CSV), used across different machines.
- As computing evolved, more structured approaches, such as databases and relational database technology, were developed to organize and store information efficiently.

TYPES OF DATA:



- Nominal data.
- Ordinal data.
- Discrete data.
- Continuous data.

TYPES OF DATA:



- **Nominal data.**
 - This type of data represents categories or labels with no specific order or ranking.
- **Ordinal data.**
 - Ordinal data involves categories with a specific order, but the intervals between values are not equal or meaningful.

TYPES OF DATA:



- **Discrete data.**
 - Discrete data includes countable values, often whole numbers, with no possible values between them.

- **Continuous data.**
 - Continuous data can take any value within a given range and is measured, not counted. It can have infinite possibilities within that range.

WHAT IS INFORMATION?



You get information when data is processed, organized, interpreted, and structured. The comprehensible output derived from raw data helps inform decisions, strategies, and actions. Information is essentially data made valuable and accessible—an integral component of decision-making.

WHAT IS AN INFORMATION SYSTEM?

- It is an integrated set of components for collecting, storing, and processing data and for providing information, knowledge, and digital products.
- Information systems are used to run interorganizational supply chains and electronic markets.



COMPONENTS OF INFORMATION SYSTEMS:

- **hardware**

-Physical devices and equipment used in an information system, such as computers.

- **software**

-Applications and operating systems that run on hardware and enable the processing of data.

- **data**

-The raw facts and figures that are processed by the system to produce meaningful information.

- **people**

-Users who interact with the information system, including IT professionals, end-users, and stakeholders.

- **processes**

-Procedures and rules that govern how data is collected, processed, and used within the system.



ITS IMPACT IN OUR DAILY LIVES:

HISTORICAL IMPACT:

- Printing Press (15th century): Revolutionized information recording and dissemination
- Mechanical Calculator (17th century): Advanced information processing
- Census Tabulator (1890): Early large-scale mechanical information system
- UNIVAC I (1950s): Early computer for information processing
- Personal Computers (late 1970s): Brought information systems to individuals and small businesses
- World Wide Web (1991): Expanded global access to information and online services



ITS IMPACT IN OUR DAILY LIVES:

CURRENT IMPACT:

- Enhanced mobility through smartphones, tablets, and laptops
- Influenced daily activities, relationships, organization structures, product types, and work nature
- Created new opportunities and threats with continuous industry innovation and academic research



USES IN AN ORGANIZATION:

- Manage operations
- Interact with customers and suppliers
- Compete in the marketplace
- Run supply chains and electronic markets



ANALYSIS



It can be simple to lose sight of the different components responsible in helping us live our modern lives with so many digital processes occurring. Today, having studied Data and information systems, i can see how these components serve as the foundation of everything we perform related to business or daily life.

All of this resides at raw, unorganized facts that have little to no meaning. This could be numbers, text or images but this is all just data until processed. Information makes use of that information. Data reviewed and turned into workable advice. Raw sales figures, for instance, do not tell a story until they are divided in ways that provide insight into how those trends themselves have been moving over time.

But it has to have some sort of system that manages and turns it into useful information. It is here that information systems come in: sets of hardware, software, data, people, and procedures assembled to gather, process, and distribute information. Without information systems, data would be raw and unorganized; businesses, governments, and individuals would find it very difficult to make informed decisions and even carry out daily tasks efficiently. Automation provided by information systems, on the other hand, is also very important in the present world where speed and accuracy are of great essence.

There is a clear relationship between data, information and information systems. Data is the foundation, information lends context and meaning to it, and involves data systems for automation in details making everything work much more efficient. This allows the others to operate seamlessly. Operating at global scale becomes impossible without these systems, the amount of data generated is overwhelming with no methods to make sense from it especially as operations have become significantly more complex globally.

I realize how deeply data, information, and information systems shape both business and personal lives. Mastering these concepts is essential, especially in Information Technology, where they are foundational to innovation, productivity, and future success.



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