COMPTER SYSTEMS: HARDWARE AND SOFTWARE_

Made by
Romero, Ryan Nicolas, M.
BSCS – 1

Table of contents_

AN OVERVIEW OF ALL THE TOPICS
TO BE DISCUSSED
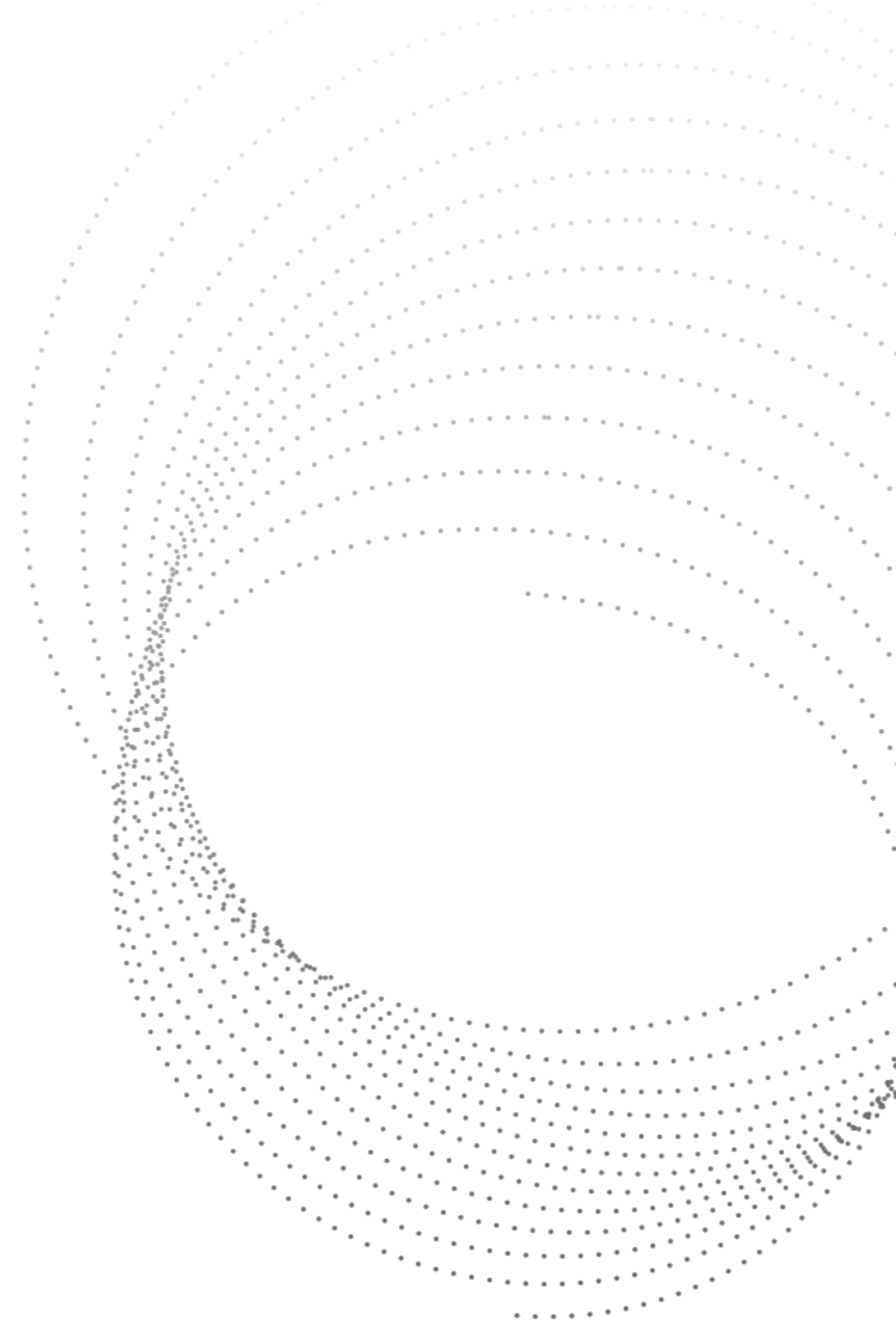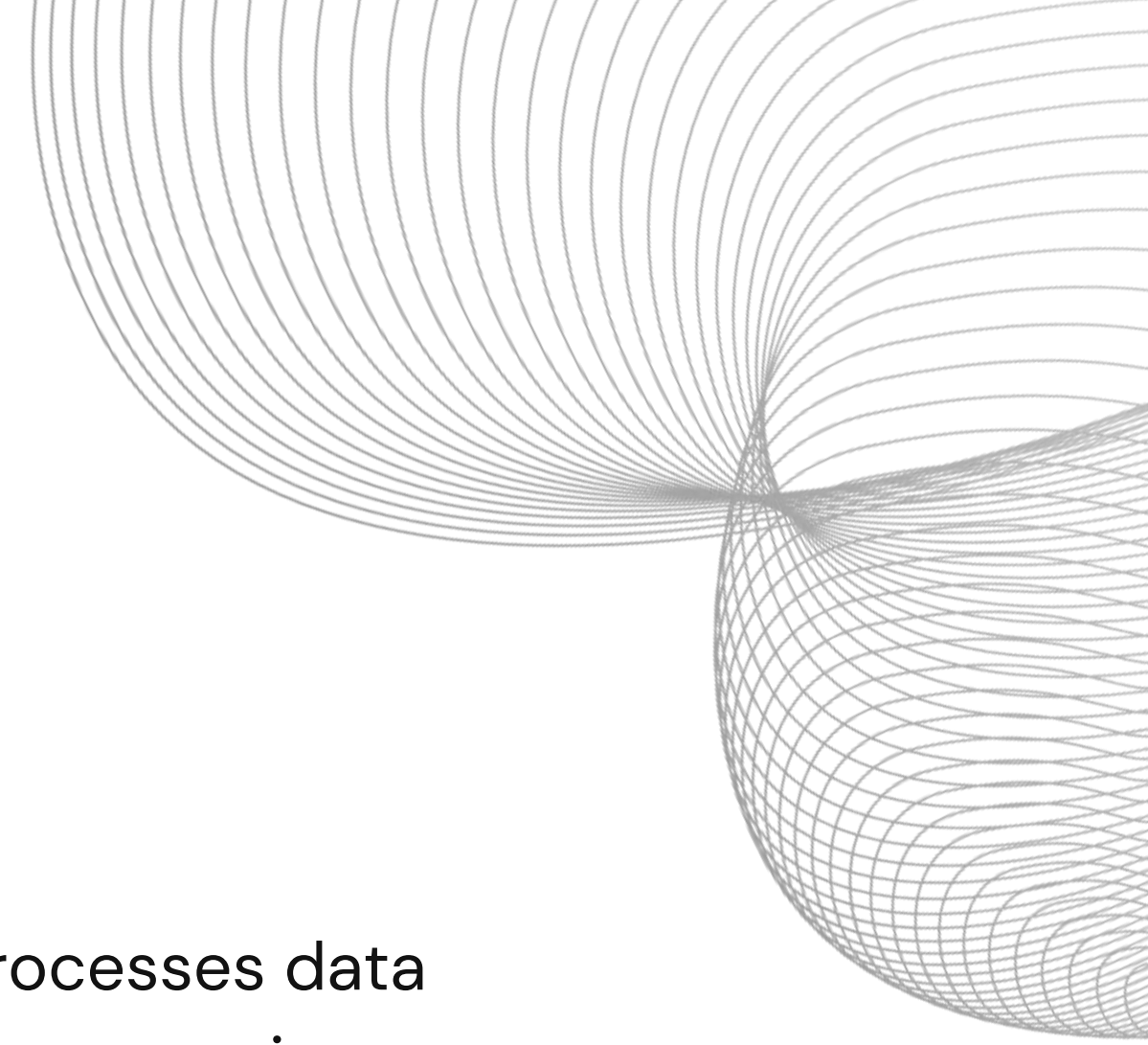
- COMPUTER
- SOFTWARE
- HARDWARE
- IMPLEMENTATION

COMPUTER_

WHAT IS IT?

A computer is an electronic device that carries out various tasks and processes data according to sets of instructions called programs or software, using the processing power of hardware.

It is a breakpoint and a pinnacle of technological advancement with uses in every sector of the world, like in business, academics, politics, etc...

Types of computers_

- **PERSONAL COMPUTER (PC)**

  Personal computers are designed for individual use. Includes desktops and laptops.

- **MAINFRAME**

  Mainframes are large and powerful computers with fast data processing and storage capabilities. Used to perform many tasks at once and also as servers for connecting multiple users through time-sharing techniques.

- **SUPERCOMPUTER**

  Supercomputers are used for advanced calculations and simulations in the scientific and academic fields. Performs thousands of calculations at the same time through parallel processing.

- **EMBEDDED SYSTEMS**

  Embedded systems are systems that are in small devices such as smartphones, cars, and appliances, used to control many functions.

- **SERVERS**

  Servers are collections of data and programs that connect thousands of users and store data over a network. Used by corporations and companies.

HARDWARE

WHAT IS HARDWARE

HARDWARE_

Hardware is the physical parts of a computer, internally and externally. These parts work in tandem to process information with the help of software and programs

PARTS OF A COMPUTER:

- CPU/Central processing unit – is the main processor that processes data and executes instructions. Often called the "brain" of the computer

- GPU/Graphics processing unit – Specialized hardware that renders graphics such as images, video, and animations.

- RAM/Random access memory – Stores data temporarily for quick access while the computer is running, the more ram there is, the more programs you can open at the same time

- Storage – Where data is permanently stored. Can range from hard disk drives, solid state drives, and etc...

- Motherboard – The main circuit board which connects all parts together, allowing them to form a whole computer and communicate.

- Input devices – devices used to input data into a computer. Keyboard, mouse, mics, eye tracker, etc. The main way we use computers.

- Output devices – devices used to output data from the computer. Monitor, speakers, etc. The main way we see what we are doing on a computer.

SOFTWARE

WHAT IS SOFTWARE

SOFTWARE_

Software is the digital programs that tell the computer what to do, relaying instructions to the physical components of the computer to process data.

TYPES OF SOFTWARE

- SYSTEM SOFTWARE – Known as operation systems. This type of software is the principal software of a computer that manages hardware, data, and system resources. Typically has a GUI for user interaction.
    1. System Management Software – Programs for system management like Operation systems or device drivers
    EX. Windows, MacOS, BIOS, AMD adrenaline
    2. Programming languages and IDEs– Languages and applications used to create new software.
    EX. C#, Python, VS code

- APPLICATION SOFTWARE – Programs designed for specific tasks. These can range from entertainment, work–related, or otherwise.
    1. General–Purpose Application Software – Used for common information processing for individual users. Flexible in use–cases
    EX. MS Office, Firefox, Photoshop
    2. Application Specific Software – Programs designed for specific applications in various fields. This can be in finance, city infrastructure, transaction processing, etc...
    EX. Floor warning systems, TPS

IMPLEMENTATION

IN THE COMMUNITY
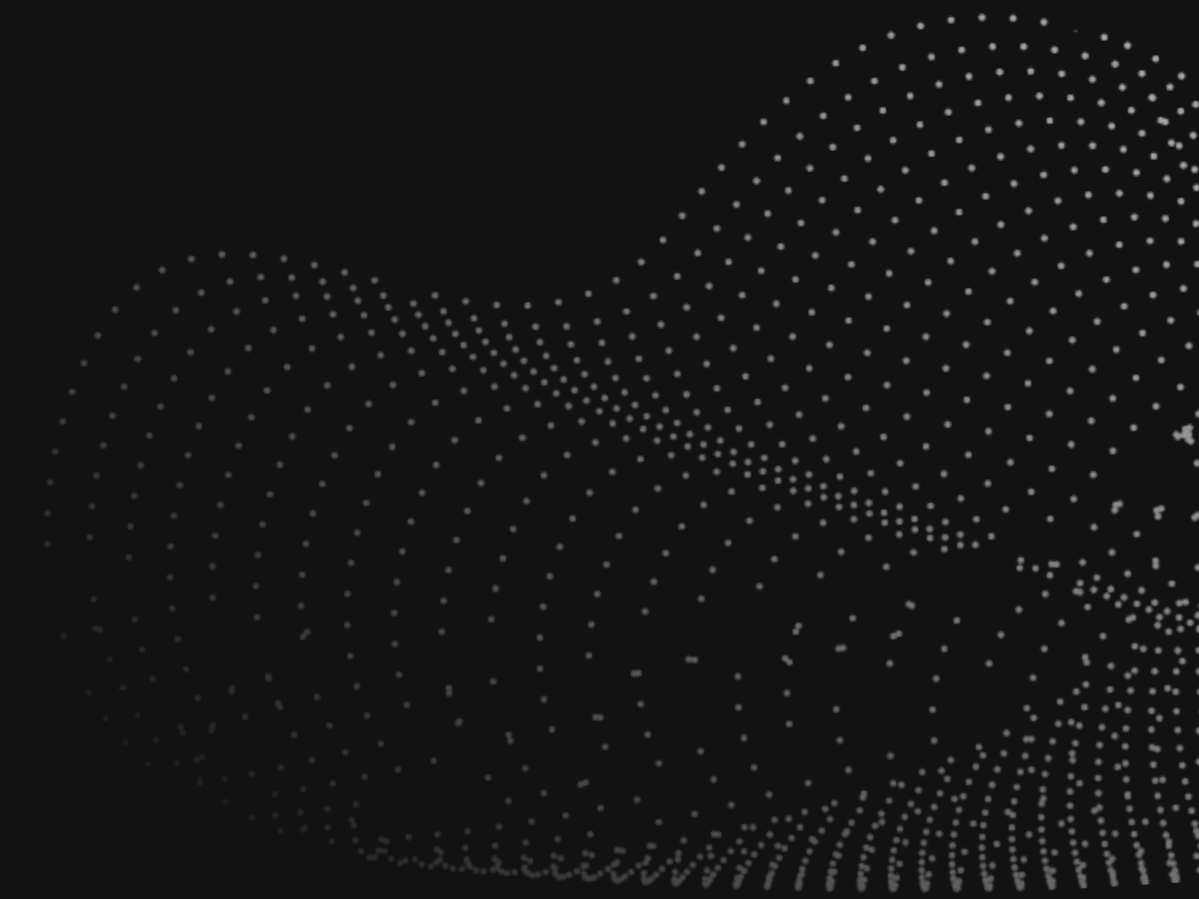
IMPLEMENTATION_

The implementation of both hardware and software in our community is evident through ubiquitous computing, permeating every field from finance to entertainment and even service industries.

HARDWARE AND SOFTWARE IMPLEMENTATION:

- Connectivity through the Internet: The internet links billions of users, enabling the sharing of information through websites and various programs.

- Financial Transactions: Hardware and software work hand in hand in financial services, such as ATMs, and in retail settings like stores and fast food chains, including McDonald's.

- Personal Devices: In our daily lives, laptops, desktops, phones, and smartwatches provide widespread access to computing, bringing the digital world into our pockets and homes.

- Data Storage: Servers and data banks are crucial for storing vast amounts of data for governments and businesses, ensuring secure and efficient data management.

- Supercomputing: Supercomputers perform highly advanced calculations, driving research and innovation that have the potential to significantly improve our society.

- Education: Computing being introduced into the system of learning fo easier learning, easier access to information, and easier time developing new skills.

ANALYSIS/REACTION

As I researched the topic at hand, I started to think on how much more integrated hardware and software will become in my life. The thought of eventually being the one creating programs for various applications makes me excited for the future. I was so engrossed in the topic that I completed this entire portfolio in just a few hours. This is my analysis and reaction to my Portfolio #4 of ITC.

Hardware and software work in tandem to create convenience in our lives. From the obvious to the unseen, computer systems are everywhere. This portfolio reinforced the notion in my head that computers are the pinnacle of human advancement in today's society. With unlimited use cases, computers and their components are complex yet designed for our everyday use. Our lives have become much easier due to the integration of computers. From work and education to leisure and entertainment, computers have penetrated every facet of society, becoming one with it.

With the recent advancements in AI technology, computing has taken another step toward the future. While it may have flaws now, we could very well see a future with robots being of service to us We must be careful during this turbulent time of advancement to ensure progress benefits all, not just a few.

As I conclude my analysis and reaction paper, I reflect on how the world has changed since the first computers were invented. Now, we have computers in our pockets more powerful than the first mainframes of the 1950s. Computers used for menial tasks today like ordering food are more powerful than those used during World War II. This gives us an opportunity, to do more than just order takeout from Jollibee; we can learn, improve, and make ourselves brand new through computers. With the internet as a repository of all human knowledge, and a network to connect us around the world, we can become our best selves. Learning about hardware and software implementation has made it clear that to learn what we want is simpler than ever before.
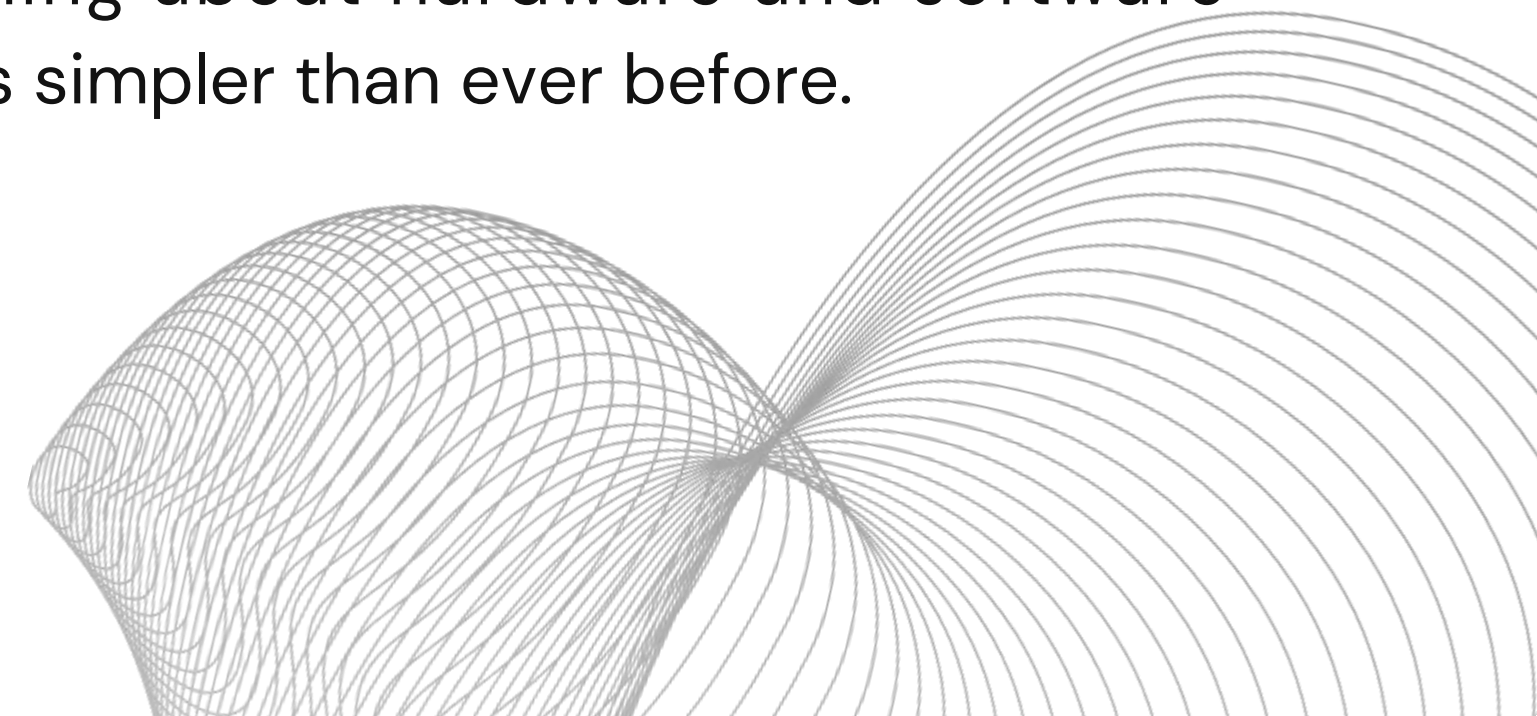
REFRENCES_

- Britannica. (n.d.). *Computer software*. Retrieved from https://www.britannica.com/topic/information-system/Computer-software#ref218049

- UNESCO. (2002). *Information and communication technology in education: A curriculum for schools and programme for teacher development*. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000387743

- Britannica. (n.d.). *Computer*. Retrieved from https://www.britannica.com/technology/computer

- LibreTexts. (n.d.). *Categories of software and their purposes*. In *INT 1010: Concepts in computing (PGCC)*. Retrieved from https://workforce.libretexts.org/Courses/Prince_Georges_Community_College/INT_1010%3A_Concepts_in_Computing_%28PGCC%29/04%3A_System_and_Application_Software/4.01%3A_Purpose_and_Functions_of_Software/4.1.03%3A_Categories_of_Software_and_Their_Purposes

- McGraw-Hill Education. (n.d.). *Appendix A: A glossary of terms*. Retrieved from https://highered.mheducation.com/olc2/dl/940711/bal76825_appA_A1_A14.pdf

THE END_