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Guide about Computer Hardware

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Abstract - *The purpose of this research study is the development of the world of information technology followed by the development of supporting components of technology, one of which is computers. More and more applications demand we have to use the appropriate computer hardware as well. Therefore, to provide a more basic understanding to users in understanding the important parts of a computer.*

Keywords*: Guide, Introduction, Hardware Technology*

INTRODUCTION

At this time, technology is developing more and more rapidly and more and more sophisticated. The development of this technology is certainly very related to the development of computer technology. Information technology is the second closest point after the current lifeblood, where there is an increased need in various fields for this. Of course, this is the impact of the rapid development of technology at this time which is the result of research and breakthroughs by scientific experts in the field of technology who aim to create an effective and efficient communication system. Computerized systems are one of the means in realizing an effective performance where technological developments have a changing impact on the mindset and workings of humans themselves, where information systems are one of the flagships in the world of computerization that have a function in processing information.

A computer is an electronic equipment that can receive input, process input, provide information, use a program stored in computer memory, can store programs and processing results, and work automatically. Computer Device itself consists of hardware which is a component Computer has five components, namely: HARDWARE, SOFTWARE, HEIN WARE, BRAIN WARE AND INFOWARE. In real life, some humans can operate computers and some who don't, what else understand what is hardwere or softtwere.even though computers can be very helpful to humans. Usually, everyday we only use a set of PCs (Personal Computers), but we don't know what it means. And using the application is of course also just using. The author once asked someone when he was wearing a PC. As it turns out, many of them don't know what the hardware itself means.

RESEARCH METHODS

In this research method, it uses a qualitative method, namely data collection by conducting a literature study of various articles on the goggle or browsing the internet to obtain material so that it can be analyzed according to data classification which functions to group data according to what has been designed.

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RESULTS AND DISCUSSION

Computer Hardware (Hardware)

Computer hardware is all the physical parts of a computer, distinguished by the data that resides in it or that operates in it, and software that provides hardware creation instructions to complete its task. The boundaries between hardware and software are slightly blurry, Firmware is software that is "created" into the hardware. This firmware is the territory of computer programmers and computer engineering, and the user does not need to pay attention to this part. A general computer (personal computer/PC) consists of the following parts:

1. A system board/motherboard that houses the CPU, memory and other parts, and has slots for additional cards.
2. Power supply - a box that is the place of transformers,
3. voltage and fan control. Storage controller, of the type IDE, SCSI or other, which controls hard drives, floppy disks, CD-ROMs and other drives;
4. A video display controller that produces output for display computers.
5. Bus computer controllers (Parallel, serial, USB, Firewire) to connect the computer with other external additional tools such as printers or scanners.

Miscellaneous Hardware

1. **Monitor**
   A computer display or computer monitor is one of the computer hardware that functions to display the processes of a set of computers.

2. **Mouse**
   A mouse is a tool used to enter datainto a computer other than a keyboard. The mouse acquired such a name because the protruding cable is shaped like a mouse's tail. The mouse was first created in 1963 by Douglas Engelbart made of wood with a single button. The second model is already equipped with 3 buttons. In 1970, Douglas Engelbart introduced a mouse that can determine the X-Y position on the computer layer, this mouse is known as the X-Y Position Indicator. The mouse works by capturing movement using a ball that touches a hard and flat surface. More modern mice don't use the ball anymore, but use optical rays to detect motion. In addition, some have used wireless technology, both radio-based, infrared rays, and bluetooth. Currently, the latest technology has allowed the mouse to use a laser system so that the resolution can reach 2,000 dots per inch (dpi), some can even reach 4,800 points per inch. Usually the mouse of this model is intended for fans of video games.

3. **Keyboard**
   The creation of computer keyboards was understood by the creation of typewriters whose design basis was created and patented by Christopher Latham in 1868 and widely marketed in 1877 by the Remington Company. The first computer keyboard was adapted from punch cards and teletype writing delivery technology. In 1946 the ENIAC computer used a punched card reader as an input and output device. When we hear the word "keyboard" then our minds cannot be separated from the existence of a computer, because the keyboard is a keyboard consisting of keys to type sentences and other special symbols on the computer. Keyboard in Indonesian

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means finger keyboard or keyboard. On the keyboard there are keys of the letters A – Z, a–z, numbers 0 -9, keys and special characters such as: ' ~ @ # $ % ^ & * ( ) _ - + = < > / , . ? : ; “ ‘ \ | as well as other special buttons whose total number is 104 buttons. While on a typewriter the number of buttons is 52 buttons. The shape of the keyboard is generally rectangular, but nowadays keyboard models are very varied.

4. **Speakers**
   A speaker is a trans duser that converts electrical signals to audio (sound) frequencies by vibrating their membrane-shaped components. In each sound generation system, determining the best sound quality depends on the speaker. The system on the speaker is a component that carries an electronic signal, stores it in CDs, tapes, and DVDs, and then returns it again to the actual sound that we can hear.

5. **Printer**
   A printer is a tool that displays data in printed form, either in the form of text or images/graphics, on paper. The printer is usually divided into several parts, namely a picker as a tool to take paper from the tray. The tray is a place to put paper. Ink or toner is a real printing tool, because there is something called ink or toner that is used to write / print on paper.

6. **Cpu (Central Processing Unit)**
   The CPU functions as a controller of the computer's performance process, in other words, as a place to manage all program instructions on the computer and as a manager of all performance activities on the computer.

7. **Scanner**
   This scanner is like a photocopier and serves to collect object data and be transferred to computer memory and the results can be seen on the computer monitor.

8. **Modem**
   functioning two-way communication tools and is currently more used to connect computers to the internet network. Stabilizer The function of the stabilizer is to stabilize the mains voltage when the mains voltage drops.

9. **Harddrive**
   The function of the hard disk is to store computer data and store the Operation System (OS) as well as a computer boot tool. RAM/Memory Module The function of RAM / Memory is as a device that temporarily stores the computer performance process so as to make the same data access faster.

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Types of Hardware

1. **Hardware Input**
   Input hardware is a type of hardware component used to enter raw data and is categorized as an input device. Input hardware helps manage data such as text, images, and audiovisual recordings. In addition, this type of hardware also helps the process of transferring files between computers.

   Example hardware input:
   - Pointing device: Mouse, touchpad, touch screen, multi-touch screen, input pen, motion sensor, graphics tablet, interactive smartboard, and fingerprint scanner.
   - Audio input device: Microphone and midi keyboard.
   - Bluetooth peripheral: Keyboard, mouse, headset, gamepad, or printer with bluetooth.
   - Visual and image devices: Webcams, digital cameras, digital camcorders, biometric scanners, and barcode readers.
   - Network device: Internet hardware and bluetooth or wireless hardware.

2. **Hardware Processing**
   Processing hardware is a core component of computer devices. This type of hardware converts raw data into readable information so that it can make the computer device work the way you want.

   Example of processing hardware:
   - **Control unit**
     This type of hardware manages and oversees the operation of the processor and other components that are important in the data processing process.
   - **Arithmetic and logic units**
     The Arithmetic and Logic Unit or ALU is responsible for all arithmetic and logic operations such as addition, multiplication, subtraction, division, and comparison logic operations.
   - **Register and cache**
     This type of hardware is a storage location within the processor that responds to instructions from the control unit by moving the relevant data during processing.

3. **Hardware Output**
   Hardware components that deploy and display data and information fall into the category of hardware output. This type of hardware has two types, namely softcopy and hardcopy.
   Example hardware output:
   - **Softcopy of output**
     Hardware that produces visual, sound, and network displays. Such as projection displays, interactive smart boards, headphones and earphones, ethernet cables, flash drives, and external drives and optical drives.
   - **Hardcopy output**
     Hardware that produces something in a tangible physical form. Such as dot matrix printers, 3D printers, inkjet printers, laserjet printers, and thermal printers.

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4. **Storage Hardware**

Storage hardware is a component where data is stored that is classified as a memory device. Such devices are divided into primary and secondary memory.

Storage hardware example:

- **Main memory:** Includes DRAM, SRAM, and ROM.
- **Secondary memory**: Includes hard drives, solid state disk drives, optical disks, flash disks, and external disk drives.

CONCLUSION

The development of hardware can be concluded that computer hardware is moving in a smaller direction, mobile, large storage capacity, reliable in data processing, as well as output and input devices that allow humans to interact easily with computers. The development of the internet has many benefits in all aspects of people's daily needs. One of the benefits of this development is business processes. The development of information has given birth to new business processes that depend entirely on the internet network.

Computerized systems are one of the means in realizing an effective performance where technological developments have a changing impact on the mindset and workings of humans themselves, where information systems are one of the flagships in the world of computerization that have a function in processing information.

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