

Portfolio #4

Analysis

In various disciplines of computing, when dealing with computer systems, students often ask what makes a computer system, excluding peopleware or human input. What is hardware? What is software and its types? And how do they both interact to make a computer system function, and how are they used in different institutions and communities? Hardware seems to already have a formal definition that can be easily looked up anywhere, as with software, which are very foundational parts of a computer system.

Analysis

Ugah et al. (2018) say the generic “Computer hardware is the physical parts of a computer”, with examples of the monitor, keyboard, data storage, sound card, and motherboard. According to Silalahi et al. (2023), there is a ranking of the most significant components for processing digital information, with the first being a microcomputer processor, then a monitor, the third being a mouse, then the keyboard, the hard drive as the fifth, and finally your Random Access Memory being the last.

Analysis

Now that we've somewhat understood what hardware is, let's focus on software and its types. If hardware is the physical parts, conversely, software is instructions that are run by hardware (Ugah et al., 2018). There are different interpretations as to what is/are the types of software but Libretexts (2021) and 5 information systems software (n.d.), focus on three: system software, the programs that manage the resources of the computer systems, such as your operating system, networking software, and database management systems. They do have multiple functions, but too many to enumerate here. Application software is are programs that, with the help of user input, accomplish tasks of the computer system. And lastly, Firmware is software that is permanently on a read-only memory chip.

Analysis

After understanding the parts of a computer system, there are a vast number of possibilities for these concepts to be applied to fostering community development. Projects made through information and communication technology (ICT) were able to facilitate essential services like education, healthcare via telemedicine, and financial systems (Eyieyien et al., 2024). ICT projects have a central goal of connecting the digital divide by enhancing digital literacy and inspiring individuals marginalized by status or geographic location by promoting social inclusion (Eyieyien et al., 2024).

Hardware

Ugah et al. (2018) say the generic “Computer hardware is the **physical parts** of a computer”, with examples of the monitor, keyboard, data storage, sound card, and motherboard. According to Silalahi et al. (2023) there is a ranking of the most significant components for processing digital information, with the first being a microcomputer processor, then a monitor, the third being a mouse, then the keyboard, the hard drive as the fifth, and finally your Random Access Memory being the last.

Software and Its Types

If hardware is the physical parts, conversely, software is **instructions** that are run by hardware (Ugah et al., 2018).

Software and Its Types

| System Software | Application Software | Firmware |
|---|--|---|
| These are programs that manage the resources of the computer systems, such as your operating system , networking software, and database management systems. | These are programs that, with the help of user input , accomplish tasks of the computer system. | is software that is permanently on a read-only memory chip. |

Implementation

Projects made through information and communication technology (ICT) were able to facilitate essential services like education, healthcare via telemedicine, and financial systems (Eyieyien et al., 2024). ICT projects have a central goal of connecting the **digital divide** by enhancing digital literacy and inspiring individuals marginalized by status or geographic location by promoting social inclusion (Eyieyien et al., 2024)

References

Eyieyien, O. G., Idemudia, C., Paul, P. O., & Ijomah, T. I. (2024). The Impact of ICT Projects on Community Development and Promoting Social Inclusion. *International Journal of Engineering Research And Development*, 20(7), 300–310.

Libretexts. (2021, April 27). 4.1.3: Categories of Software and Their Purposes. Workforce LibreTexts. [https://workforce.libretexts.org/Courses/Prince_Georges_Community_College/INT_1010%3A_Concepts_in_Computing_\(PGCC\)/04%3A_System_and_Application_Software/4.01%3A_Purpose_and_Functions_of_Software/4.1.03%3A_Categories_of_Software_and_Their_Purposes](https://workforce.libretexts.org/Courses/Prince_Georges_Community_College/INT_1010%3A_Concepts_in_Computing_(PGCC)/04%3A_System_and_Application_Software/4.01%3A_Purpose_and_Functions_of_Software/4.1.03%3A_Categories_of_Software_and_Their_Purposes)

Silalahi, L. M., Simanjuntak, I. U. V., Budiyanto, S., & Rochendi, A. D. (2023). Computer hardware and software education for Teacher's Office of Insan Mulia Early Childhood Education School Tangerang. *Journal of Innovation and Community Engagement*, 4(4), 232–240. <https://doi.org/10.28932/ice.v4i4.7313>

Ugah, J. O., Agu, S. C., & Elugwu, F. (2018). Relationship between Operating System, Computer Hardware, Application Software and Other Software. *International Journal of Computer Trends and Technology*, 64(1), 12–16. <https://doi.org/10.14445/22312803/ijctt-v64p104>

5 Information Systems software. (n.d.). <https://www.umsl.edu/~joshik/msis480/chapt05.htm>