**Week 03 Journal - Chapter 12 from A+ textbook** Seraphim Gerber

To create a perfect computer system tailored for your needs, it’s good to know what those needs are.

For design engineers or engineers in manufacturing plants, they often use computer-aided design and computer-aided manufacturing systems. These have powerful multi-core processors, maximum RAM, high-end video cards, large display, large capacity hard drives, SSDs, and a high quality mouse.

Gaming PCs are commonly built by dedicated gamers, however prebuilts can often be found. Gaming PCs focus on powerful multi-core processors, high-end video cards, high-definition sound cards and speakers, high-end cooling systems, a large amount of RAM, large displays, a high quality mouse, and a good microphone.

Audio and video editing workstations are good for those who want to focus on sound and video manipulation. For this type of PC, common configuration elements are specialized video cards with maximum RAM and GPU, specialized audio cards and speakers, very fast and large-capacity hard drives, dual monitors, powerful multi-core processors, a high quality mouse, and possibly a tablet or scanner.

A virtualization workstation is either a workstation that has at least one operating system or a workstation that uses hardware and software virtualization techniques to provide an end user with a controlled workstation environment. These workstations usually require maximum CPU cores, maximum RAM, multiple large-capacity hard drives, SSDs, and NAS for increased storage space.

A thin client workstation is a desktop or laptop that has a display, mouse, keyboard, and network connectivity and runs applications from a server. Characteristics of a thin client computer include meeting minimum requirements for an operating system, 1Gb/s network connectivity, basic applications, and optional display privacy screen. In contrast to a thin client workstations, there are thick client computers, which are the most common type in work environments. They are usually characterized by meeting recommended hardware requirements for an operating system, meeting recommended hardware and software requirements, optional display privacy screen, and optional dual displays.

Motherboards, chipsets, and CPUs are all directly related to one another and should be designed to function with one another. When dealing with a motherboard, you should consider its form factor, chipset, whether CPU is included or not, CPU size, motherboard socket size, nanotechnology used, CPU cooling, RAM, number and type of input/output ports, and traditional BIOS or UEFI.

Storage subset systems consist of magnetic or flash technology for internal or external hard drives, flash storage, or optical drives. When adding, replacing, or building a storage subsystem, you must consider how long the data will be stored and how long the storage subsystem will be in use before being upgraded or replaced.

Troubleshooting is a way to research the issues you are facing with your computer and find and apply the best solution using all available resources. There are several steps to the process.

Step 1: Identify the problem.

Step 2: Establish a theory of reason.  
Step 3: Test the theory to determine the reason.

Step 4: Establish a plan of action to resolve the problem and implement the solution.

Step 5: Verify full system functionality and, if applicable, implement preventive measures.

Step 6: Document findings, actions, and outcomes.

**Based on the chapter, what are the three most important components to think about if you were building a computer for yourself? How about if you were building a computer for another family member?**

The most important things to think about are what you or your family member want specifically, typically focusing on processors, hard drives, and motherboard.

**Think back to the last time you had to troubleshoot a problem with your computer. What steps did you follow? Did you follow a different set of steps than the book recommends, and if so, do you think following the book's steps would have worked out better or worse?**

Last time I troubleshooted an issue with my computer, I looked up the issue and tried several solutions that I found online until one of them worked. I typically follow my own routine that is faster, however if I followed the book’s steps, I would probably have been able to help others with my research and results.