SPECIAL PROGRAM IN TECHNICAL VOCATIONAL EDUCATION (SPTVE)
COMPUTER SYSTEMS SERVICING 10 Q3-W3

I. Topic: TROUBLESHOOTING

II. Objectives:

1. understand the concepts of troubleshooting;
2. develop a solution to a problem and;
3. troubleshoot computer systems and network.

III. Brief Introduction

Troubleshooting is the process of detecting, isolating and repairing faults in a given system. Troubleshooting methods are all about SWAPPING and ELIMINATING. Although troubleshooting varies and can be modified depending on case and experience, it requires an organized and logical approach when handling computers and components.

Basic Network Problems

Cable Problem: The cable which is used to connect two devices can get faulty, shortened or can be physically damaged.

Connectivity Problem: The port or interface on which the device is connected or configured can be physically down or faulty due to which the source host will not be able to communicate with the destination host.

Configuration Issue: Wrong configuration, looping the IP, routing problem and other configuration issues, network fault may arise and the services will get affected.

Software Issue: Software compatibility issues and version mismatch, the transmission of IP data packets between the source and destination is interrupted.

Traffic overload: If the link is over utilized then the capacity or traffic on a device is more than the carrying capacity of it and due to overload condition the device will start behaving abnormally.

Network IP issue: Improper configuration of IP address, and subnet mask.

IV. Activities

Activity 1

Hardware is any physical device that you use to operate your computer. The problem might occur in the CPU, RAM, monitor, HD, and other tangible parts. Software is computer program such as OS and applications in which are virtual and trickier to troubleshoot. Network connectivity allows devices to talk to one another and share information.

Directions: Determine the cause of a problem by ticking its column below.

FIXING PROBLEMS	HARDWARE	SOFTWARE	NETWORK CONNECTIVITY
1. Reboot - power cycling your computer is one of the best and easiest ways to troubleshoot. It tends to just reset everything and hopefully get rid of whatever glitch is causing issues.			
2. Unplug peripheral devices - remove any tool that is connected to a computer like an extra drive, or a scanner.			
3. Memory - do you have enough memory? Various files and applications can quickly overtake your memory.			
4. The Ethernet cable should be connected tightly and check the light status on the device. If it is not green then the cable or port may be faulty			
5. Make sure that a program is installed correctly.			
6. To prevent permanent loss, make sure you back up your data. Try saving it online (cloud storage), in flash drives, or even as attachments in an email to yourself.			

Activity 2

Directions: Identify the issues raised on the following solutions. Choose only the letter and write the answer on the ANS column.

ANS	SOLUTIONS	ISSUES
	1. *A computer that suddenly shuts off or has difficulty starting up could have a failing power supply. Check that the computer is plugged into the power supply properly and, if that doesn't work, test the power supply with another working device to confirm whether or not there is adequate power.*	A. The Computer Won't Start B. The Screen is Blank
	2. *If the computer is on but the screen is blank, there may be an issue with the connection between the computer and the screen. First, check to see if the*	

	monitor is plugged into a power point and that the connection between the monitor and computer hard drive is secure. If the problem is on a laptop, then you may need to get a professional to fix it as some of the internal wires may be worn.	C. Abnormally Functioning Operating System or Software D. Windows Won't Boot E. The Screen is Frozen F. Computer is Slow
	3. *If the operating system or other software is either unresponsive or is acting up, then try restarting your computer and run a virus scan. To avoid having this happen, install reliable anti-virus software.*	
	4. *If you are having troubles booting Windows, then you may have to reinstall it with the Windows recovery disk*	
	5. *When your computer freezes, you may have no other option than to reboot and risk losing any unsaved work. Freezes can be a sign of insufficient ram, registry conflicts, corrupt or missing files, or spyware. Press and hold the power button until the computer turns off, then restart it and get to work cleaning up the system so that it doesn't freeze again.*	

Activity 3

Directions: List down at least two (2) procedural steps of solutions in order to address the problem. Write the answer on the spaces provided.

1. Problem: Power button will not start computer
   Solutions: a.
   b.
2. Problem: Network or the Ethernet cable could not be able to connect to the router.
   Solutions: a.
   b.
3. Problem: Keyboard, mouse, printer or other peripherals aren't working properly.
   Solutions: a.
   b.
4. Problem: The system clock keeps resetting back to days gone by
   Solutions: a.
   b.
5. Problem: Slow internet connection.
   Solutions: a.
   b.

V. Assessment:

Directions: Read each statement carefully and select a letter that best describe to the sentences below. Write the answer on the space provided.

_____ 1. Sally complains that her laptop is overheating, even though all the internal cooling systems are working properly. What suggestions could you make to her that would help her situation?
A. Don't leave her laptop on for extended periods of time
B. Buy a cooling pad for laptops
C. Install a liquid cooling system
D. Buy a new laptop

_____ 2. You are working for a small business as a computer tech. You notice that one of the users keeps shutting the computer down by pressing the power button, instead of using the shutdown process of the operating system. You inform the user that this is not a good practice because?
A. Over time it could cause component failure
B. Power surges to components will not cause damages
C. It takes time for the power supply to recharge
D. It could damage the monitor

_____ 3. When determining if the problem is related to hardware or software, which of the following is one of the most important questions to ask?
A. Is the computer plugged in
B. What operating system are you using
C. Have you recently installed any new hardware or software
D. Does the monitor work

_____ 4. Billy complains that his computer is giving excessive error messages, the file names and folder names are garbled, and there is an odd noise coming from his tower. What do you suspect as the problem?
A. The RAM
B. The PSU
C. The HDD
D. The Keyboard

_____ 5. A user complains that his pc crashes during windows XP start up. Which of the following would you suggest for him to correct the problem?
A. Change CMOS settings
B. Enable VGA mode from windows advanced options
C. Use last known good configurations
D. Use check disk utility

_____ 6. A client complains after doing some routine cleaning and maintenance inside the case, the hard drive does not seem spinning up after booting. What is the first thing you should suspect the problem is?
A. A loose SATA cable
B. ESD
C. A loose SATA power
D. Hard drive failure

VI. Reflection:

Can you differentiate the two methods of troubleshooting, the swapping and the eliminating approach?

References:

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4. www.techsoup.org
5. www.howstuffworks.com
6. www.microsoft.com/technet/network
7. https://www.proprofs.com

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