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COMPUTER SUPPORT AND MAINTENANCE WEEK 9

Scenario Analysis:

During a busy workday, the company's main file server suddenly becomes unresponsive, preventing employees from accessing shared documents and applications. The IT team is immediately notified of the issue. The technician begins by checking the server's physical connections and verifying that the power supply and network cables are properly connected. Next, they use a monitoring tool to identify any hardware malfunctions or overheating issues. The technician then accesses the server through the management console to check for system errors or failed services. After identifying that a recent software update caused a service conflict, the technician rolls back the update and reboots the system. Once the server is back online, network connectivity and user access are tested to ensure normal operation. Finally, a full system backup and update log are reviewed to prevent future downtime. This quick and structured troubleshooting minimizes business disruption.

Concept Research:

Diagnostic tools are software or hardware utilities used to identify, analyze, and fix computer or network problems. They help technicians detect issues such as hardware failures, software errors, or connectivity problems. Common examples include **ping** and **tracert** for network testing, **Task Manager** and **Event Viewer** for system monitoring, and **antivirus scanners** for malware detection. More advanced tools like **Wireshark** analyze network traffic, while **hardware diagnostic tools** check memory, storage, or CPU performance. These tools provide detailed reports that guide technicians in troubleshooting and maintenance, improving system reliability and performance while reducing downtime.

Tool Practice:

While testing a virtual machine (VM) in VirtualBox, I simulated a hardware issue by reducing the VM's allocated memory and disabling hardware acceleration. After starting the VM, it failed to boot properly, showing performance errors and lag. I used VirtualBox's logs and settings panel to diagnose the problem, confirming insufficient memory allocation as the cause. After increasing the RAM and enabling VT-x/AMD-V acceleration, the VM booted successfully and ran smoothly. This exercise helped me understand how virtual hardware settings affect system performance and taught me how to use VirtualBox's diagnostic tools to troubleshoot efficiently.

Application Practice:

A troubleshooting procedure is a step-by-step method used to identify and fix technical problems. First, **identify the problem** by gathering information from users or system alerts. Next, **analyze possible causes** using diagnostic tools or error logs. Then, **test solutions** one at a time—such as restarting the system, updating drivers, or reconfiguring settings. Once the issue is resolved, **verify functionality** by testing the system to ensure normal operation. Finally, **document the problem and solution** for future reference. This structured approach saves time, prevents repeated issues, and ensures efficient and consistent problem-solving in IT environments.