**Module 4: Troubleshooting and Helpdesk**

**Topic: Troubleshoot security**

1. What is troubleshooting?

Troubleshooting is the process of identifying, planning and resolving a problem, error or fault within a software or computer system. It enables the repair and restoration of a computer or software when it becomes faulty, unresponsive or acts in an abnormal way.

Troubleshooting is primarily done to keep a system or software in desired condition, specifically when it encounters or exhibits a problem. It is a systematic approach done within one or more phases depending on the complexity of a problem. Typically, the first step involves identifying what the problem is followed by coming up with a solution to counteract the problem and then implementing that solution. However, there can be more than one reason for the problem, which will require a more complex solution. An individual troubleshooting such a problem might test for different solutions to eliminate the problem or fault.

1. Why there is need of troubleshooting security?

Troubleshooting is needed to identify the symptoms. Determining the most likely cause is a process of elimination—eliminating potential causes of a problem. Finally, troubleshooting requires confirmation that the solution restores the product or process to its working state.

1. How do you troubleshoot a computer?

* Identify the problem.
* Research.
* Establish a theory of probable cause.
* Test the theory.
* Establish a plan of action.
* Implement or escalate.
* Verify functionality.
* Document the solution.

1. How to troubleshoot common computer problems?

* Free up RAM by closing other open programs.
* Restart the software.
* Shut down and restart your computer.
* Use the Internet to find help.
* Undo any recent hardware or software changes.
* Uninstall the software, then reinstall it.
* Look for software patches.
* Scan for viruses and malware.

1. Your computer turns on, but still doesn’t work?

If your computer starts but displays nothing, you should check is if your monitor is working properly. Check the power light of your monitor to verify that it's turned on. If your monitor won't turn on, unplug the power adapter of your monitor, and then plug it back into the power outlet.

1. What are the basic of troubleshooting?

Troubleshooting is the process of identifying, planning and resolving a problem, error or fault within a software or computer system. It enables the repair and restoration of a computer or software when it becomes faulty, unresponsive or acts in an abnormal way.

1. Write down the steps of OS Troubleshooting
2. Free up RAM by closing other open programs.
3. Restart the software.
4. Shut down and restart your computer.
5. Use the Internet to find help.
6. Undo any recent hardware or software changes.
7. Uninstall the software, then reinstall it.
8. Look for software patches.
9. Scan for viruses and malware.
10. What is recovery?

Recovery is the effort made by end users or system administrators in recovering and restoring a computer from a problem that has made it inaccessible. Typically, PC recovery requires a diagnosis of the problem, and then finding and implementing a solution.

The most common reasons that PC recovery is required include:

* Operating system or critical files are corrupted - The PC in this case is generally recovered by reinstalling the OS or using the OS's native recovery solution, such as the System Restore feature in the Windows family of OSs.
* Intentional or unintentional file deletion or formatting - Recover and restore data and files that were deleted or formatted using backup storage or through a data recovery tool.
* Hardware malfunction: Replacing or repairing hardware components in the PC

1. Why do we need recovery?

You need a data recovery solution if you experience inaccessibility of files and folders, unrecognized format, virus attacks, accidental deletions, permanent deletion of files, inaccessible partitions, corrupt documents, unexpected system shutdowns, error messages while opening a file and there are endless reasons due to which you cannot access your data.

1. List out the tools for recovery.

Disk Drill Data Recovery (Windows & Mac)

EaseUS Data Recovery Wizard (Windows & Mac)

Recuva (Windows)

TestDisk Data Recovery (Windows & Mac)

Minitool Power Data Recovery (Windows)

1. What is hard troubleshooting?

Way 1: Restart Your PC

Whether you are experiencing a slow speed or an exact software conflict, you should turn off your computer. Then, wait 30-60 seconds and turn the computer on again to see whether it works.

Actually, the quick shutdown of PC is useful for troubleshooting problems related to memory, software, and miscellaneous issues. By clearing the stored memory, you can solve many PC problems.

Way 2: Check Cable & USB Ports

Sometimes, you connected a hard disk to your computer, but find it doesn’t show up. You should change a connection able or change a USB port (or connect it to another computer) to see whether the hard drive can be recognized.

The hard disk would show up after checking the cable and USB port in many cases. Yet, if the hard drive not detected problem still persists, you should read this post which focuses on external hard drive troubleshooting:

Way 3: Check Disk for Errors

Microsoft provides users with a built-in tool to check hard disk for errors. You can run the error checking tool by following 2 methods.

Method one: run in File Explorer.

Open File Explorer and find the disk which has problems.

Right click on the hard disk with errors.

Choose Properties.

Navigate to Tools bar in the Properties window.

Click on the Check button.

Select Scan and repair drive to start detecting & fixing disk errors.

Method two: run CHKDSK in Command Prompt.

Type cmd into the search box on taskbar.

Right click on Command Prompt from the search result.

Select Run as administrator.

Type CHKDSK \*: /f and press Enter.

Wait for the completion.

Way 4: Run Antivirus Program

Many users have reported that Windows detected a hard disk problem - virus. When finding that your hard disk may be attacked by virus, you should recover data from it firstly; then, run antivirus program to remove virus and ransomware from your computer.

Way 5: Check Network Issues

If wireless and plugged-in network issues occur, your hard drive may be affected. You should re-power on the router, cable or DSL modem to try to troubleshoot the hard disk. Since these components are used frequently, problems tend to appear.

How to fix hard disk error caused by network issues:

Unplug router, cable and DSL modem from your device.

Wait for about 30 to 60 seconds.

Plug them into your device again.

1. Why do we need hard drive troubleshooting?

Problems that occur when you have just installed a hard drive are almost always a simple matter of a bad or incorrectly connected cable, incorrect jumper settings, or some similar trivial problem. If a newly installed drive isn't recognized by the system, turn off the system.

1. What is the basic troubleshooting for printer?

Turn off the printer, turn it back on. As simple as it seems, this is one of the most effective ways to get a printer back on track and functioning normally.

Turn off the computer, turn it back on.

Check the connections.

Check the status.

Check the print queue.

Invest in a new printer.

1. What are the basic troubleshooting for laptop?

Run fewer programs at the same time. Don't have too many programs running at the same time.

Restart your computer.

Remove viruses and malware.

Free up hard disk space.

Verify windows system files.

Uninstall unnecessary programs.

Adjust windows visual effects.

Run a disk scan.