#### Module 4: Troubleshooting and Helpdesk Topic: Troubleshoot security

##### Assignment level Basic:

* + 1. What is troubleshooting?

Ans. Troubleshooting is the process of identifying, diagnosing, and resolving problems or issues that occur in various systems, devices, or processes.

* + 1. what is the need of troubleshooting security?

Ans. Troubleshooting security is essential for several reasons as it helps ensure the protection and integrity of computer systems, networks, and sensitive information.

##### Assignment level Intermediate:

* + 1. Do a practical to change the password.

Ans. Yes

* + 1. Do a practical to change the user account password.

Ans. Yes

##### Assignment level advance:

* + 1. How do you troubleshoot a computer?

Ans.

* + Identify the Problem
  + Isolate the Cause
  + Restart the Computer
  + Check for Updates
  + Scan for Malware
  + Free Up Disk Space
  + Check Hardware Connections
  + Run Hardware Diagnostics
  + Use Safe Mode
  + System Restore
  + Review Error Messages
  + Check Event Viewer
  + Update Drivers
  + Test in a Different User Account
  + Check for Overheating
  + Perform a Clean Boot
  + Reinstall or Repair Software
  + Backup and Reinstall Operating System
    1. How to troubleshoot common computer problems?

Ans.

* + Identify the Problem
  + Isolate the Cause
  + Restart the Computer
  + Check for Updates
  + Scan for Malware
  + Free Up Disk Space
  + Check Hardware Connections
  + Run Hardware Diagnostics
  + Use Safe Mode
  + System Restore
  + Review Error Messages
  + Check Event Viewer
  + Update Drivers
  + Test in a Different User Account
  + Check for Overheating
  + Perform a Clean Boot
  + Reinstall or Repair Software
  + Backup and Reinstall Operating System
    1. Your computer turns on, but still doesn’t work?

Ans.

* + Check Monitor and Connections
  + Listen for Beep Codes
  + Check Power Supply
  + Inspect Hardware
  + Disconnect External Devices
  + Try Safe Mode
  + Perform a System Restore
  + Check Hard Drive
  + Run Memory Test
  + Inspect for Overheating
  + Check BIOS Settings
  + Perform a Clean Boot
  + Test with a Different Power Outlet
  + Inspect the Motherboard
    1. You get the blue screen of death?

Ans.

If your computer turns on, but it still doesn't work or doesn't boot properly, there could be several potential issues causing the problem. Here are some steps to help you troubleshoot and identify the possible causes:

* Check Monitor and Connections
* Listen for Beep Codes
* Check Power Supply
* Inspect Hardware
* Disconnect External Devices
* Try Safe Mode
* Perform a System Restore
* Check Hard Drive
* Run Memory Test
* Inspect for Overheating
* Check BIOS Settings
* Perform a Clean Boot
* Test with a Different Power Outlet
* Inspect the Motherboard

#### Topic: OS Troubleshooting

##### Assignment level Basic:

* + 1. What are the basic of troubleshooting?

Ans.

The basics of troubleshooting involve a systematic approach to identify and resolve problems effectively. Whether you're troubleshooting a computer, an electronic device, a mechanical system, or any other technical issue, the following steps form the foundation of the troubleshooting process:

* Identify the Problem
* Gather Information
* Break Down the Problem
* Check for Obvious Causes
* Formulate Hypotheses
* Test Hypotheses
* Observe and Document Results
* Iterate and Refine
* Isolate the Root Cause
* Implement the Solution
* Verify the Fix
* Preventative Measures
* Document the Process
  + 1. Write down the steps of os troubleshooting.

Ans.

Troubleshooting issues related to the operating system (OS) involves a systematic approach to identify and resolve problems with the software that manages a computer's hardware and resources. Here are the steps for OS troubleshooting:

* Identify the Symptom
* Gather Information
* Isolate the Scope
* Check for Updates
* Restart the Computer
* Boot into Safe Mode
* Scan for Malware
* Check System Resources
* Review Error Messages
* Use System Restore
* Check System Files
* Inspect Startup Programs
* Update Drivers
* Review Recent Software Installations
* Check for Overheating
* Perform a Clean Boot
* Reset or Reinstall the OS

##### Assignments level Advance:

* + 1. Do a practical to repair OS.

Ans. Yes

* + 1. Do a practical to repair boot file.

Ans. Yes

* + 1. DO a practical to repair bootmgr.

Ans. Yes

##### Topic: Recovery Assignment level Basic:

* + 1. What is recovery?

Ans.

Recovery, in the context of technology and computing, refers to the process of restoring a system, application, or data to a previous state or a functional condition after a failure, error, or disaster. It is the act of recovering or retrieving lost, damaged, or corrupted information to return a system to its normal working state.

Recovery can apply to various aspects in the technology field:

* Data Recovery
* System Recovery
* Disaster Recovery
* Application Recovery
* Backup and Recovery
  + 1. Why do we need recovery?

Ans.

Recovery is crucial in the world of technology and computing for several reasons. It serves as a safety net to protect data, systems, and operations in case of unexpected events, errors, or disasters. Here are some reasons why recovery is essential:

* Data Protection
* Business Continuity
* Disaster Mitigation
* System Stability
* Time and Cost Savings
* Protection against Cybersecurity Threats
* Fault Tolerance
* Regulatory Compliance
* User Confidence
* Personal Use
* Learning from Mistakes

##### Assignment level Intermediate:

* + 1. list out the tools for recovery.

Ans.

There are various tools available for data and system recovery, each designed to cater to specific recovery needs. Here is a list of some commonly used recovery tools:

1. **Backup Software:** Backup solutions are crucial for creating copies of data and system files. Popular backup software includes:

* Acronis True Image
* Macrium Reflect
* EaseUS Todo Backup
* Carbonite

1. **Data Recovery Software:** These tools are used to recover deleted, lost, or inaccessible files from storage devices.

* Recuva
* EaseUS Data Recovery Wizard
* Stellar Data Recovery
* TestDisk

1. **Disk Imaging and Cloning Software:** These tools create exact copies (images) of entire disks or partitions for backup or recovery purposes.

* Clonezilla
* Macrium Reflect
* Acronis True Image

1. **Windows System Recovery Tools:** Built-in recovery tools for Windows operating systems.

* System Restore: To restore the system to a previous state.
* Windows Recovery Environment (WinRE): Contains tools like Startup Repair and System Image Recovery.

1. **macOS Recovery Tools:** Built-in recovery tools for macOS.

* Time Machine: For easy system and file recovery.
* Disk Utility: For disk management and repair.
* Recovery Mode: Allows reinstalling macOS or restoring from Time Machine backups.

1. **Partition Management Software:** These tools help manage partitions, resize partitions, or recover lost partitions.

* EaseUS Partition Master
* MiniTool Partition Wizard
* AOMEI Partition Assistant

1. **Bootable Rescue Disks:** These are bootable disks or USB drives that contain various recovery tools and utilities.

* Hiren's BootCD PE
* Ultimate Boot CD (UBCD)
* SystemRescueCd

1. **Disk Check and Repair Utilities:** Tools to check and repair disk errors.

* CHKDSK (Windows)
* fsck (macOS and Linux)

1. **RAID Recovery Software:** For recovering data from RAID arrays in case of RAID controller failures or disk issues.

* R-Studio
* RAID Reconstructor

1. **Data Erasure Tools:** For securely erasing data to prevent unauthorized recovery.

* DBAN (Darik's Boot and Nuke)
* CCleaner (includes data erasure features)

1. **Password Recovery Tools:** For recovering lost or forgotten passwords.

* Ophcrack (Windows passwords)
* John the Ripper (password cracking tool)
  + 1. DO a practical to recover deleted file.

Ans. Yes

* + 1. Do a practical to recover the formatted file

Ans. Yes

* + 1. Do practical to recover data from the os Corrupted file.

Ans. Yes