

**Hardware Networking**

**SUBMITTED TO**

**KAMLESH SHUKLA SIR**

**SUBMITTED BY**

**MANAV BANDHANIA**

# Module 4: Troubleshooting and Helpdesk

### Troubleshoot Security

#### Assignment Level Basic

1. **What is troubleshooting?**
   * Troubleshooting is the process of diagnosing the source of a problem and finding a solution to fix it.
2. **What is the need for troubleshooting security?**
   * To protect sensitive data from unauthorized access.
   * To ensure the integrity and availability of systems.
   * To prevent security breaches and cyber attacks.

#### Assignment Level Intermediate

1. **Do a practical to change the password:**
   * Open **Settings**.
   * Go to **Accounts**.
   * Select **Sign-in options**.
   * Click on **Password** and then **Change**.
   * Follow the prompts to enter your current password and set a new one.
2. **Do a practical to change the user account password:**
   * Open **Control Panel**.
   * Go to **User Accounts**.
   * Select **Manage another account**.
   * Choose the account you want to change.
   * Click on **Change the password** and follow the instructions.

#### Assignment Level Advanced

1. **How do you troubleshoot a computer?**
   * Identify the problem.
   * Check for error messages.
   * Restart the computer.
   * Check hardware connections.
   * Run diagnostic tools.
2. **How to troubleshoot common computer problems?**
   * Slow performance: Check for malware, clear cache, and update software.
   * No internet: Check network connections and restart the router.
   * Software crashes: Reinstall the software or update it.
3. **Your computer turns on, but still doesn’t work?**
   * Check for loose cables.
   * Ensure all hardware components are properly connected.
   * Boot in Safe Mode to diagnose software issues.
4. **You get the blue screen of death?**
   * Note the error code.
   * Restart the computer.
   * Update drivers and software.
   * Run a memory check.

### OS Troubleshooting

#### Assignment Level Basic

1. **What are the basics of troubleshooting?**
   * Identify the issue.
   * Gather information.
   * Develop a hypothesis.
   * Test the hypothesis.
   * Implement a solution.
2. **Write down the steps of OS troubleshooting:**
   * Boot in Safe Mode.
   * Check for updates.
   * Run system diagnostics.
   * Restore system to a previous state.
   * Reinstall the OS if necessary.

#### Assignment Level Advanced

1. **Do a practical to repair OS:**
   * Use the **System File Checker** tool.
   * Open Command Prompt as an administrator.
   * Type sfc /scannow and press Enter.
2. **Do a practical to repair boot file:**
   * Boot from a Windows installation media.
   * Select **Repair your computer**.
   * Go to **Troubleshoot** > **Advanced options** > **Command Prompt**.
   * Type bootrec /fixboot and press Enter.
3. **Do a practical to repair bootmgr:**
   * Boot from a Windows installation media.
   * Select **Repair your computer**.
   * Go to **Troubleshoot** > **Advanced options** > **Command Prompt**.
   * Type bootrec /rebuildbcd and press Enter.

### Recovery

#### Assignment Level Basic

1. **What is recovery?**
   * Recovery is the process of restoring a system or data to a previous state after a failure or loss.
2. **Why do we need recovery?**
   * To restore lost or corrupted data.
   * To ensure business continuity.
   * To minimize downtime and data loss.

#### Assignment Level Intermediate

1. **List out the tools for recovery:**
   * Windows Recovery Environment (WinRE)
   * System Restore
   * Backup and Restore
   * Third-party recovery software
2. **Do a practical to recover deleted file:**
   * Open **Recycle Bin**.
   * Locate the deleted file.
   * Right-click and select **Restore**.
3. **Do a practical to recover the formatted file:**
   * Use third-party recovery software like Recuva.
   * Follow the software instructions to scan and recover files.
4. **Do practical to recover data from the OS corrupted file:**
   * Boot into Safe Mode.
   * Use **System Restore** to revert to a previous state.
   * Use recovery software if necessary.

### Hard Drive Troubleshooting

#### Assignment Level Basic

1. **What is Hard Drive troubleshooting?**
   * Diagnosing and fixing issues related to hard drives.
2. **Why do we need Hard Drive troubleshooting?**
   * To prevent data loss.
   * To ensure the proper functioning of the computer.
   * To extend the lifespan of the hard drive.

#### Assignment Level Intermediate

1. **Do a practical to troubleshoot the digging sound:**
   * Check for loose cables.
   * Run a disk check using chkdsk command.
   * Replace the hard drive if the sound persists.
2. **Do a practical to change the SATA cable in hard drive:**
   * Power off the computer.
   * Open the case.
   * Locate the SATA cable connected to the hard drive.
   * Disconnect and replace it with a new one.

### Laptop, Printer, Video Card Troubleshooting

#### Assignment Level Basic

1. **What is the basic troubleshooting for printer?**
   * Check power and connections.
   * Ensure the printer is online.
   * Update printer drivers.
   * Clear any paper jams.
2. **What are the basic troubleshooting for laptop?**
   * Check power supply.
   * Ensure battery is charged.
   * Restart the laptop.
   * Check for hardware issues.

#### Assignment Level Intermediate

1. **Do a practical to disassemble the laptop and change the corrupted RAM:**
   * Power off the laptop.
   * Remove the battery.
   * Open the back panel.
   * Locate and replace the RAM module.
2. **Do a practical to change the cartridge of the printer:**
   * Open the printer cover.
   * Remove the old cartridge.
   * Insert the new cartridge.
   * Follow the printer’s alignment process.
3. **Do a practical to change the processor fan:**
   * Power off the computer.
   * Open the case.
   * Locate the processor fan.
   * Disconnect and replace it with a new one.
4. **Do a practical to check the laptop which is not starting up:**
   * Check the power supply.
   * Remove and reseat the battery.
   * Try booting without the battery.
   * Check for any hardware issues.