



Lecture 4: Computer Troubleshooting: Common Issues and Solutions

Course Title: Computer (AI Applications)

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Main Topics

This lecture covers the essential aspects of computer troubleshooting, from basic concepts to advanced techniques.



Definition of Troubleshooting

Understand the basics of identifying and resolving problems.



Common Hardware Issues

Identifying and repairing physical malfunctions.



Basic Techniques

Learning effective methods for diagnosing problems.



Importance of Troubleshooting

Ensuring system reliability, cost savings, data protection, and increased productivity.



Common Software Issues

Addressing application errors and conflicts.



Troubleshooting Tools

Using software and physical tools to aid in repairs.



5-Step Process

A systematic guide for efficient troubleshooting.



Operating System Errors

Understanding error messages and solving OS issues.



Safety Tips

Safety procedures to ensure your protection and that of your device.

1-Troubleshooting is the process of identifying, analyzing, and solving problems that occur in a computer system.

Why Troubleshooting Matters



System Reliability

Keeps systems working properly



Cost Savings

Saves time and money



Data Protection

Prevents data loss



Productivity

Improves user efficiency

Five-Step Troubleshooting Process



Define the Problem

Clearly identify what's not working



Gather Information

Collect error messages and symptoms



Identify Potential Causes

List possible reasons for the issue



Test and Isolate

Check each potential cause systematically



Implement Solutions

Apply fixes and verify resolution

2-Common Hardware Problems

Hardware problems are related to physical components of the computer.

1

Computer Does Not Turn On

Possible Causes: Power cable not connected, faulty power supply, battery drained (laptop)

Solutions: Check power cable and socket, replace or charge battery, test with another power supply

2

No Display on Screen

Possible Causes: Monitor not powered, loose display cable, graphics card issue

Solutions: Check monitor power, reconnect display cables, restart the computer



3

Keyboard or Mouse Not Working

Possible Causes: Loose connection, driver issues, hardware damage

Solutions: Reconnect device, try another USB port, replace the device

4

Overheating

Possible Causes: Dust inside system, faulty cooling fan, poor ventilation

Solutions: Clean the system, ensure proper airflow, use cooling pads (laptops)



3-Common Software Problems

Software problems relate to operating systems and applications.

1

Computer Is Slow

Possible Causes: Too many running programs, low memory (RAM), virus or malware

Solutions: Close unnecessary programs, restart the system, scan for malware

2

Software Not Responding

Possible Causes: Program crash, incompatible software, insufficient system resources

Solutions: End task using Task Manager, reinstall the software, update the program



Operating System Errors

3

Operating System Errors

Possible Causes: Corrupted system files, improper shutdown, driver issues

Solutions: Restart system, run system repair tools, update drivers



4-Basic Troubleshooting Techniques

01

Identify the Problem

Ask the user what happened, observe error messages, identify when the problem started

02

Check Simple Issues First

Power connection, cables, restart the computer

03

Isolate the Cause

Hardware or software? Test one component at a time

04

Apply a Solution

Fix or replace faulty components, update or reinstall software

05

Test the System

Verify that the problem is resolved, ensure system works normally

5-Basic Troubleshooting Tools

1-Software Tools

- Task Manager
- Antivirus software
- Disk Cleanup
- System Restore

2-Hardware Tools

- Screwdrivers
- Multimeter
- Replacement cables
- USB boot devices



6-Safety Tips During Troubleshooting

Power Safety

Turn off power before opening hardware

Component Protection

Avoid touching internal components without grounding

Data Backup

Backup data before major fixes

