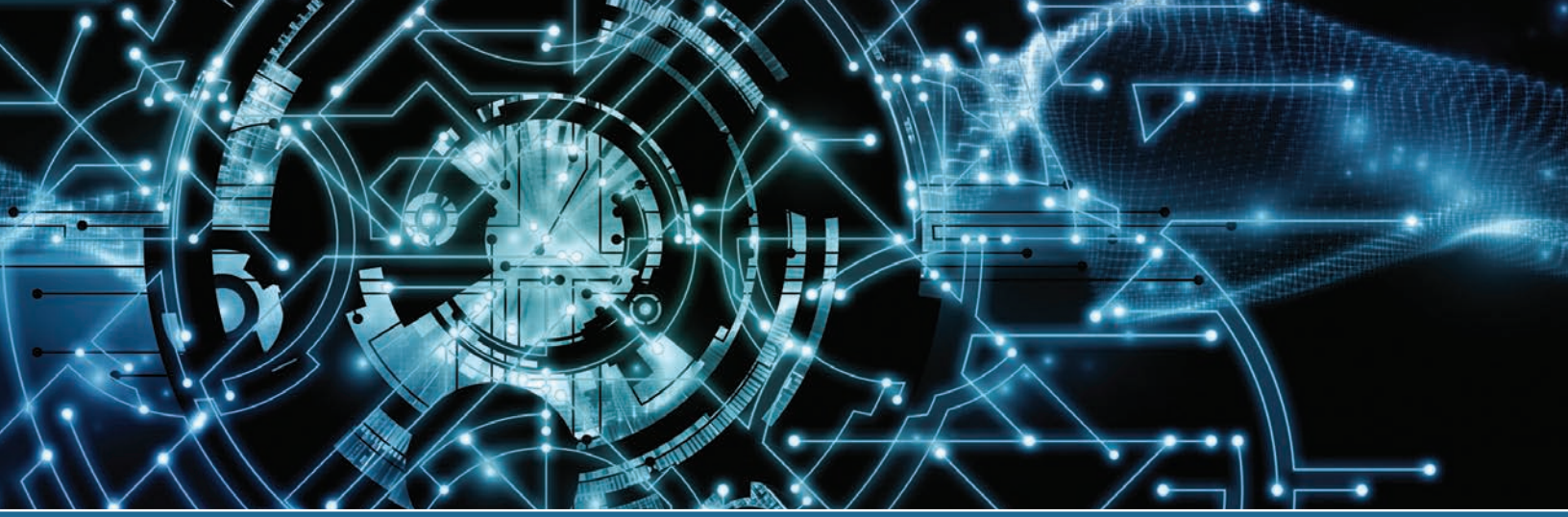
LAB MANUAL

COMPLETE A+ GUIDE TO IT HARDWARE AND SOFTWARE

A CompTIA® A+ Core 1 (220-1001) &
A CompTIA® A+ Core 2 (220-1002) Lab Manual

CHERYL A. SCHMIDT

PEARSON IT CYBERSECURITY CURRICULUM



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A CompTIA A+ Core 1 (220-1001) & CompTIA A+ Core 2 (220-1002) Lab Manual

EIGHTH EDITION

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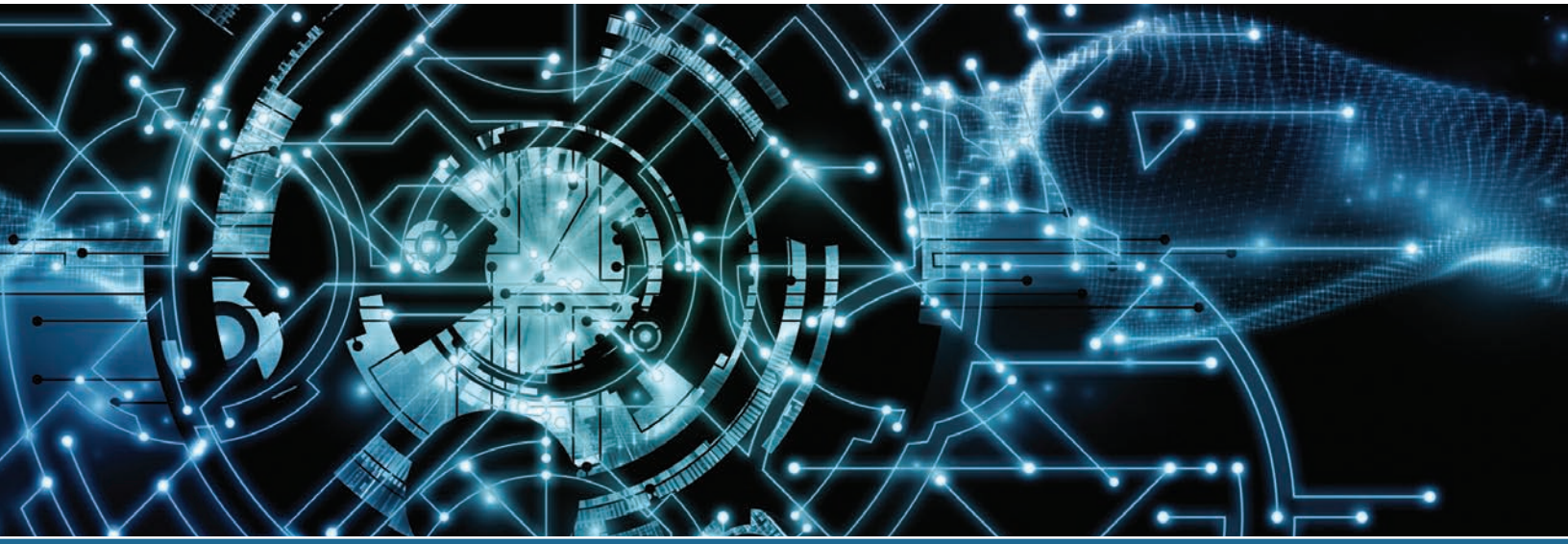
PEARSON IT CERTIFICATION

11 Computer Design and Troubleshooting Review Labs



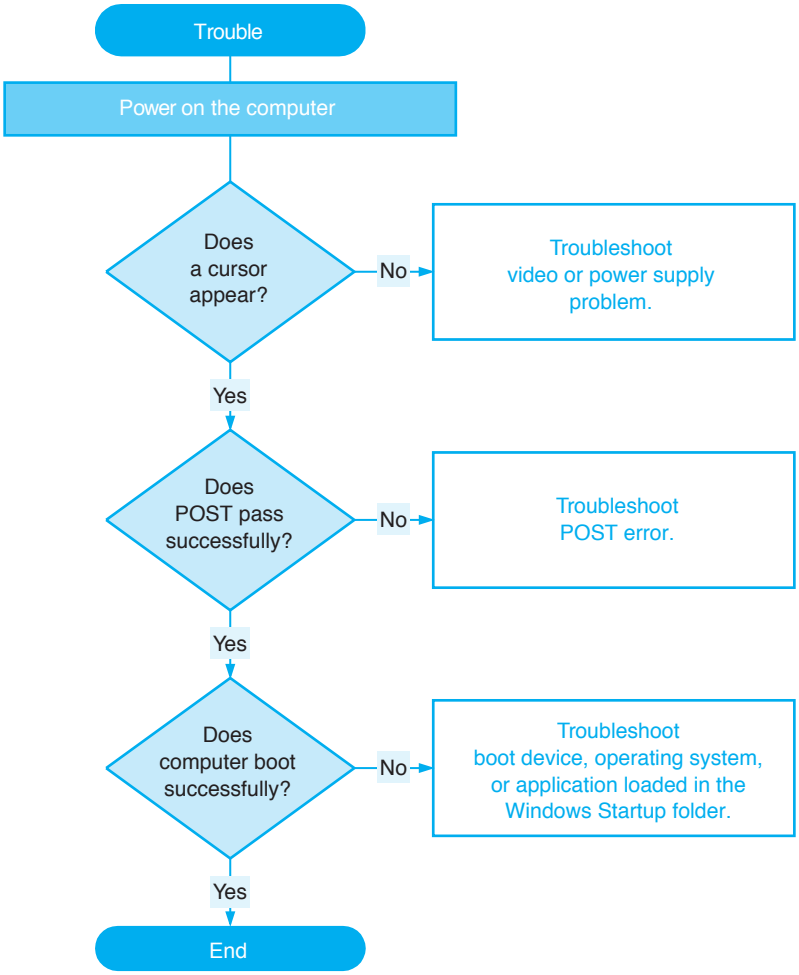
Lab 11.1 Logical Troubleshooting

Objective: To use logic to solve a computer problem

Parts: Computer

Procedure: Complete the following procedure and answer the accompanying questions.

1. In teams of two, one person leaves the room, while the other person inserts a problem in the machine and powers it down.
2. The person who left the room powers on the computer with the problem and performs troubleshooting. Use the flowchart shown in Lab Figure 11.1 and answer the questions that follow. When the problem is solved, swap roles.



LAB FIGURE 11.1 Lab troubleshooting flowchart

Do you hear any audio clues? If yes, list the symptoms.

_____

Do any POST errors appear? If so, list them.

_____

Are there any startup errors? If so, list them.

_____

Are there any application-specific problems? If so, list them.

_____

List any possible techniques to test. Test them one at a time. Document the solution.

_____

Lab 11.2 Designing a Computer Subsystem

Objective: To design an upgrade for a particular subsystem

Parts: Computer

Procedure: Complete the following procedure and answer the accompanying questions.

1. Look at a particular computer within the classroom or that you have seen in your own home or a friend's home. Think of the computer in terms of one of the following subsystems. Note that the instructor may assign a particular subsystem.
   - Motherboard and case
   - Power supply and case
   - Storage
   - Audio
   - Display

   Can the subsystem be upgraded? Why or why not? [Yes | No]

   _____

   Is the system a proprietary one? In other words are you limited in your upgrade options because the system is sold by a particular manufacturer? [Yes | No] Describe the limitations, if any.

   _____

   _____

2. Before you design an upgrade for that particular subsystem, remove the parts for the subsystem in order to see the particulars about the parts. Document your findings.

   _____

   _____

   _____

3. Design an upgrade for the subsystem. Write a proposal for a prospective customer on what the parts would cost and what you would charge them to upgrade the chosen or assigned subsystem.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

4. In three or more complete sentences, describe the challenges associated with designing for a particular subsystem rather than designing an entire computer system that serves a specific purpose.

   _____

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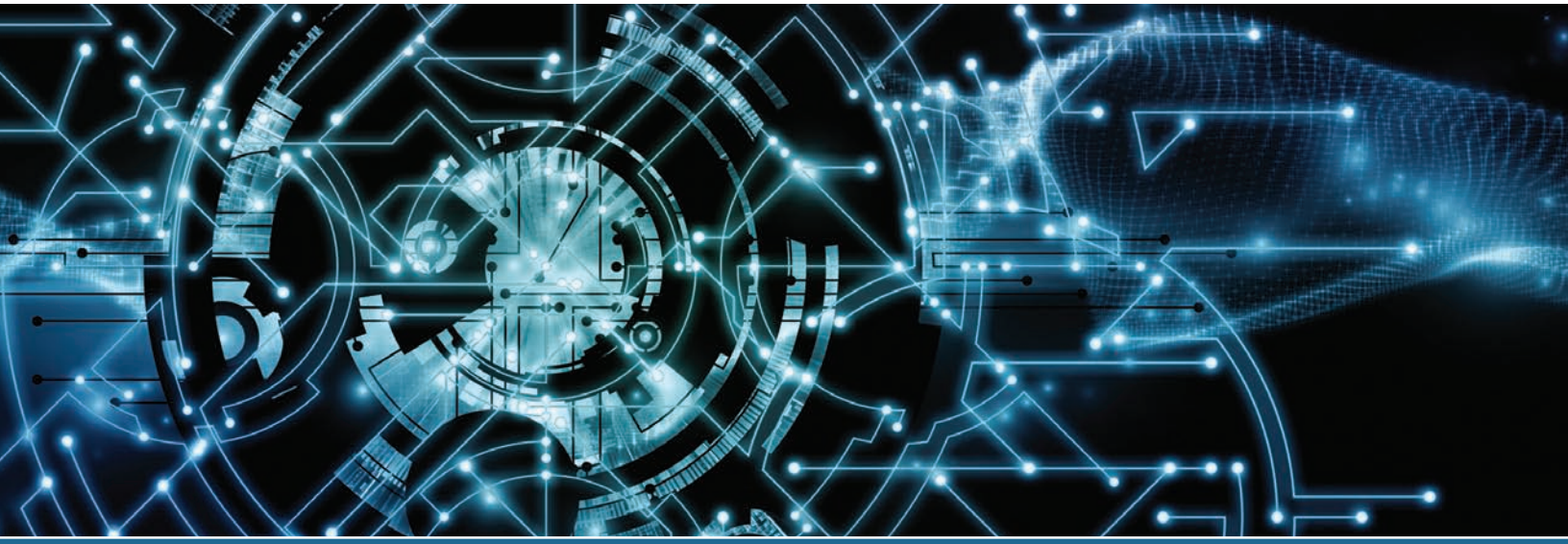
12 Internet Connectivity, Virtualization, and Cloud Technologies Labs



Lab 12.1 Exploring Serial Devices in Windows 7

Objective: To explore serial devices and their properties using Windows 7

Parts: A computer with Windows 7 installed

Either a serial port with an external modem attached or an internal modem

Procedure: Complete the following procedure and answer the accompanying questions.

1. Power on the computer and log on using the user ID and password provided by the instructor or lab assistant.
2. Click the *Start* button and access *Control Panel*.
3. Click the *System and Security* Control Panel.
4. Click the *Device Manager* link. Note that you may have to scroll down to see this option.
5. Expand the *Ports* option.
6. If *Communications Port (Com1)* is available, right-click it and select *Properties*.

   What tabs are available?

   _____

   What is the status of the serial port?

   _____
7. Click the *Port Settings* tab.

   What is the maximum number of bits per second?

   _____
8. Click the *Advanced* button.

   What UART is being used?

   _____

What COM port is assigned?

_____

9. Click *Cancel*.
10. Click the *Driver* tab and click the *Driver Details* button.

    List any drivers, including the complete path associated with the serial port.

    _____

11. Click the *OK* button.

    What is the purpose of the *Roll Back Driver* button?

    _____

12. Click the *Resources* tab.

    What IRQ and I/O addresses are assigned?

    _____

Instructor initials: _____

13. Click the *OK* button.

Modems

Note: Skip this section if an internal modem is not installed. If unsure, perform the tasks to see if the steps work.

14. Expand the *Modems* Device Manager category. Right-click a specific modem and select *Properties*. Click the *Modem* tab.

    What COM port does the modem use?

    _____

    What is the maximum port speed?

    _____

    Is the setting for the maximum bits per second on a serial port the speed at which the external modem transmits over the phone line? Explain your answer.

    _____

    Why would you want the speaker volume enabled when first installing a modem?

    _____

15. Click the *Diagnostics* tab and click the *Query Modem* button.

    What was the first AT command that was sent to the modem?

    _____

16. Click the *View Log* button. Scroll to the bottom of the log.

    What communications standard or standards does the modem use?

    _____

17. Close the *Notepad Log* window. Click the *Resources* tab.

    What IRQ and I/O addresses does the modem use?

    _____

Instructor initials: _____

18. Close the *Modem Properties* window. Close the *Device Manager* window.
19. Close the *Control Panel* window.