

# IT ESSENTIALS V. 4.1

## Module 4

### Basics of Preventive Maintenance and Troubleshooting

|                                                       |                                                                                                     |                                                                                                                                                                                                                                                                                          |
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| 4.0 Introduction                                      |                                                                                                     |                                                                                                                                                                                                                                                                                          |
| 1.                                                    | What is preventive maintenance?                                                                     | Regular and systematic inspection<br>Cleaning and replace of worn parts, materials and systems                                                                                                                                                                                           |
| 2.                                                    | What is troubleshooting?                                                                            | A systematic approach to locating the cause of a fault in a computer system                                                                                                                                                                                                              |
| 4.1 Explain the purpose of preventive maintenance     |                                                                                                     |                                                                                                                                                                                                                                                                                          |
| 3.                                                    | Why should you do preventive maintenance?                                                           | Reduced the probability of hardware or software problems by systematically and periodically checking hardware and software to ensure proper operation                                                                                                                                    |
| 4.                                                    | What should be done in hardware maintenance?                                                        | <ol style="list-style-type: none"> <li>1. Remove dust from fan intakes</li> <li>2. Remove dust from power supply</li> <li>3. Removed dust from inside components</li> <li>4. Clean mouse and keyboard</li> <li>5. Check and secure loose cables</li> </ol>                               |
| 5.                                                    | What should you do when installing security updates, operating system updates, and program updates? | Follow the policies of the organization                                                                                                                                                                                                                                                  |
| 6.                                                    | Why do many organizations not allow updates until extensive testing has been done?                  | To confirm that the update will not cause problems with the operating system and software                                                                                                                                                                                                |
| 7.                                                    | Why should you perform regular maintenance routines?                                                | To reduce potential hardware and software problems<br>Reduce computer downtime<br>Reduce repair costs                                                                                                                                                                                    |
| 8.                                                    | What are the benefits of preventive maintenance?                                                    | <ol style="list-style-type: none"> <li>1. Increases data protection</li> <li>2. Extends life of components</li> <li>3. Increases equipment stability</li> <li>4. Reduces repair costs</li> <li>5. Reduces number of equipment failures</li> </ol>                                        |
| 4.2 Identify the steps of the troubleshooting process |                                                                                                     |                                                                                                                                                                                                                                                                                          |
| 9.                                                    | What are the steps in the troubleshooting process?                                                  | <ol style="list-style-type: none"> <li>1. Identify the problem</li> <li>2. Establish a theory of probable cause</li> <li>3. Determine an exact cause</li> <li>4. Implement a solution</li> <li>5. Verify solution and full system functionality</li> <li>6. Document findings</li> </ol> |
| 4.2.1 Explain the purpose of data protection          |                                                                                                     |                                                                                                                                                                                                                                                                                          |
| 10.                                                   | What is data backup?                                                                                | A copy of the data on a computer hard drive                                                                                                                                                                                                                                              |

|                                                     |                                                                      |                                                                                                                                                                                     |
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|                                                     |                                                                      | that is saved to media such as a CD, DVD, or tape drive                                                                                                                             |
| 11.                                                 | How often are backups done?                                          | Daily, weekly, monthly                                                                                                                                                              |
| 12.                                                 | What should you do if the customer does not have a current backup?   | Ask them to sign a liability release form                                                                                                                                           |
| 4.2.2 Identify the Problem                          |                                                                      |                                                                                                                                                                                     |
| 13.                                                 | What type of information should you gather from the customer?        | Name, address, phone number, computer manufacture and model, operating system, network environment, connection type, problem description                                            |
| 14.                                                 | What is an open-ended question?                                      | Used to obtain general information; allows the customer to explain the details of a problem                                                                                         |
| 15.                                                 | What type of response should you expect from a close-ended question? | Yes or No                                                                                                                                                                           |
| 16.                                                 | What information does Event Viewer record about the problem?         | What problem occurred<br>Date and time of problem<br>Severity of problem<br>Source of problem<br>Event ID number<br>Which user was logged in when the problem occurred              |
| 17.                                                 | What is shown in Device Manager?                                     | All the devices configured on a computer                                                                                                                                            |
| 18.                                                 | How do you know a device is operating incorrectly?                   | Flagged with a yellow circle and an exclamation point                                                                                                                               |
| 19.                                                 | What does a yellow question mark indicate?                           | Hardware is not functioning because the system does not know which driver to install for the hardware                                                                               |
| 20.                                                 | How will a disabled device be identified?                            | A red circle with an X                                                                                                                                                              |
| 21.                                                 | What are beep codes used for?                                        | To indicate hardware failures                                                                                                                                                       |
| 22.                                                 | Are all beep codes the same?                                         | No; they vary depending on BIOS manufacturer                                                                                                                                        |
| 4.2.3 Establish a Theory of probable cause          |                                                                      |                                                                                                                                                                                     |
| 23.                                                 | Where should you start when troubleshooting a problem?               | With the obvious                                                                                                                                                                    |
| 4.2.4 Determine an exact cause                      |                                                                      |                                                                                                                                                                                     |
| 24.                                                 | How do you determine an exact cause?                                 | By testing your theories of probable causes one at a time, beginning with the quickest and easiest                                                                                  |
| 4.2.5 Implement the solution                        |                                                                      |                                                                                                                                                                                     |
| 25.                                                 | Where might you research to find possible solutions?                 | Help desk, repair logs, other technicians, manufacturers frequently asked questions, technical websites, newsgroups, manuals (computer and devices), online forums, Internet search |
| 4.2.6 verify solution and full system functionality |                                                                      |                                                                                                                                                                                     |
| 26.                                                 | Why do you need to verify full system                                | Confirms that you have solved the original                                                                                                                                          |

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|                         | functionality?                                         | problem and ensures you have not created another problem                                    |
| 4.2.7 Document Findings |                                                        |                                                                                             |
| 27.                     | What is the final step in the troubleshooting process? | Close with the customer                                                                     |
| 28.                     | What should be included in your documentation?         | Description of the problem<br>Steps to resolve the problem<br>Components used in the repair |