CHAPTER 3, LAB 1: INTRODUCING A FEW UTILITIES (15 MINUTES)

LEARNING OBJECTIVES AND OUTCOMES

In this lab you will learn how to create a simple file using very basic vim editor commands and you will also learn how to use a few common utilities. The utilities will be used in their simplest form. Most of the utilities have many options and can be used in many ways. Use the **--help** option, or refer to the Command Reference section of Sobell or to the man page for a utility to learn more about it.

READING

Read Sobell, Chapter 3.

PROCEDURE

Most of the utilities this lab introduces work with files. Before you can use these utilities, you must have a file to work with. The first step in this lab explains the basics of how to use the vim editor to create a file."Chapter 6, Lab 1: Introduction to the vim Editor" on page 17 of this manual explains how to use vim to edit and correct mistakes in files.

1. The following instructions show how to create a short file. You can correct a mistake on the line you are entering by using the correction keys explained in the previous lab. If you notice a mistake on a previous line, leave it as it is; you will learn how to correct these kinds of mistakes in a later lab.
   a. Give the following command to open the vim editor so it is editing the file named **practice**.

      ```
      $ vim practice
      ```

      The screen will look like Figure 6-1 on page 162 of Sobell.

      If bash displays a **command not found** error, give the preceding command again, replacing **vim** with **vi** or **vim.tiny**.

   b. Before you can insert text into the file you are creating, you must put vim into Input mode. Type the letter **i** (for Input mode) to put vim into Input mode.

   c. With vim in Input mode, type a couple of short lines, ending each line with a RETURN. Make sure to end the last line with a RETURN.

   d. Before you can give a command to exit from vim, you must put vim into Command mode. Press ESCAPE to put vim into Command mode.

e. With vim in Command mode, give the command **ZZ** (type an uppercase **Z** twice) to write the new file to disk and exit from vim.

2. In its simplest form, the ls utility (Sobell, page 52) lists the names of files in the working directory (Sobell, page 86). After creating a file as explained in step 1, ls will list the name of that file. Use ls to list the names of the files in the working directory.

   When you call ls with an argument (a word following ls and separated from ls by a SPACE), ls displays the name of the file named by the argument or displays an error message if the file does not exist. Call ls with the name of the file created in step 1 and the string **xxxx** (you must separate each argument from the next by a SPACE). What happens?

3. As opposed to ls, which lists the *name* of a file, the cat utility (Sobell, page 52) displays the *contents* of a file. Use the cat utility to display the contents of the file you just created.

4. The cp utility (Sobell, page 53) makes a copy of a file. Use cp to make a copy of the file you just created.

5. The rm utility (Sobell, page 52) removes (deletes) a file. Use rm to remove the file you created using vim; do not remove the copy of this file you made in the previous step.

6. After removing the file you created using vim, what do ls and cat show when you list the name of and contents of that file?

7. The less utility (Sobell, page 53), which was introduced in the previous lab, displays a file one screen at a time. Use the less utility to display a long file, such as **/etc/services**, one screen at a time and exit from less.

8. By default, the head utility (Sobell, page 56) displays the first 10 lines of a file. Use head to display the first 10 lines of a file such as **/etc/services**.

9. By default, the tail utility (Sobell, page 57) displays the last 10 lines of a file. Use tail to display the last 10 lines of a file such as **/etc/services**.

10. The hostname utility (Sobell, page 53) displays the name of the system you are working on. Use hostname to display the name of the system you are working on.

11. The mv utility (Sobell, page 53) renames a file. Use mv to rename the copy of the file you made in step 4.

12. The lpr utility (Sobell, page 55) sends a file to the printer. Use lpr to print the file you renamed in step 11.

13. The grep utility (Sobell, page 56) searches for a string of characters in a file. Use grep to display all lines that contain a string (such as **small**) in the file you renamed in step 11.