

**Fundamentals of UNIX**  
**Lab 7.1.2– Copying Files and Directories**  
***(Estimated time: 45 min.)***

**Objectives:**

- Practice the use of the `cp` command to copy files and directories
- Copy files within the same directory to create backups
- Copy files to other directories
- Copy directories within the same directory
- Copy directories to other directories

**Background:**

In this lab, you will perform more advanced file and directory management tasks using the command line interface and the `cp` (copy) command. Copying files is a normal occurrence when working with the file system. Files may be copied between local drives such as the floppy disk, hard disk, and CD-ROM. They can also be copied between local drives and network drives on servers. A common use of the copy command is to make a backup of an existing file for safe keeping so the original can be modified. The `cp` command can also be used to create a local backup of a directory or group of directories in a tree structure.

**Tools / Preparation:**

- a) Before starting this lab, review Chapter 7, Section 1 – Advanced Directory and File Management using the Command Line.
- b) You will need the following:
  1. A login user ID (e.g. user2) and password assigned by your instructor.
  2. A computer running the UNIX operating system with CDE
  3. Networked computers in classroom

**Notes:**

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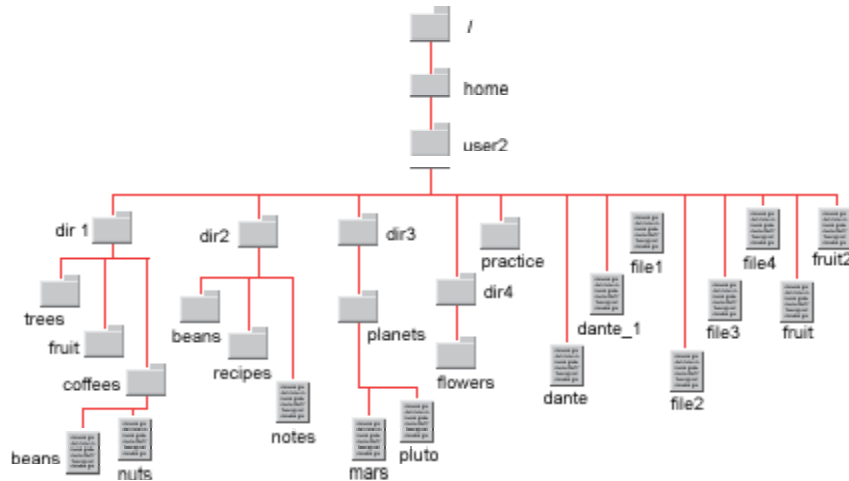
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**Fundamentals of UNIX**  
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**Worksheet**

Use the diagram of the sample Class File System directory tree to assist with this lab.

**Class File Tree Structure**



**Step 1. Log in to CDE**

Login with the user name and password assigned to you by your instructor in the CDE entry box.

**Step 2. Access the Command Line**

Right click on the **workspace** backdrop and click on **Tools**. Select **Terminal** from the menu to open a terminal window.

**Copying Files - Overview**

Files can be copied in several ways:

- 1) A new file can be created with a different name in the same directory.
- 2) Files can be copied to a different location in the directory hierarchy with the same or different name.
- 3) They can also be copied to a different disk such as a floppy or to a centralized server under the same or different name.

**Step 3. Copy Files Within A Directory**

If you wish to copy a file to create a new file with a different name within the same directory use the format below. You can specify relative and absolute pathnames when using the **cp** command.

**Command Format: `cp source_file destination file`**

This will copy from an existing filename (old source\_file) to a new file name (new destination\_file) in the same directory. **Note:** You cannot have two files of the same name in the same directory.

- a. Check to see if you are in your home directory. What command did you use? **pwd** What command would you use to change to your home directory if you were not there already? **cd or cd ~.**
- b. Copy the **dante** file and create a new file called **dante.bak** in your home directory to serve as a backup for the dante file. What command did you use? **cp dante dante.bak**

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**Worksheet – Cont.**

c. Display a long listing for all files that start with the letters "**da**" and any other characters in the remaining positions. How many files were listed?

\_\_\_\_\_

d. Create a new file named **proj-template** in your home directory using the **touch** command. Copy this file to create another new file named **proj-b**. What command did you use?

\_\_\_\_\_

e. Create a backup of the **proj-b** file in your home directory named **proj-b.bak** by copying the **proj-b** file. What command did you use? \_\_\_\_\_

f. Remove the **proj-b** file from your home directory to simulate the deletion or corruption of the file. What command can you use to restore the lost file?

\_\_\_\_\_

f. Copy the **fruit** file to create another new file called **fruit;new** (with a semicolon between fruit and new). Were you able to create the new file? \_\_\_\_\_

g. What error message did you receive? \_\_\_\_\_ Why did you get the error? \_\_\_\_\_

\_\_\_\_\_

**Step 4. Copy Files to Another Directory**

If you wish to copy one or more files to another directory use the format:

**Command Format: *cp [-i] source\_file(s) destination\_directory***

This format copies the existing file(s) to another directory in the directory structure. When copying a file this way, it will normally have the same name in the destination directory. You can add a slash and a file name after the destination directory to give the file a different name if desired.

If a file is copied and the name of the destination directory does not exist a new file is created with that name, otherwise the file is copied to the directory specified. When copying more than one file to a directory, the **cp** command assumes the last entry is a directory name and the prior entries are files.

a. Copy the **dante.bak** file from your current **home** directory into the **practice** directory for safekeeping. What command did you use? \_\_\_\_\_

b. If the dante-bak file already existed in the practice directory, what version of the **cp** command would help prevent overwriting the dante.bak file? \_\_\_\_\_

c. Copy the all of the files beginning with the lower case letter "**f**" and anything in the remaining characters from you **home** directory into the **practice** directory using a metacharacter (wildcard) and only one command. What command did you use? \_\_\_\_\_. How many files were copied? \_\_\_\_\_

d. Copy the **beans** file from the **coffees** subdirectory to the **practice** directory using a **relative** pathname. What command did you use? \_\_\_\_\_

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**Worksheet – Cont.**

e. While in your **home** directory, create a new subdirectory called **play** under the **practice** directory using. What command did you use? \_\_\_\_\_

f. Copy the **notes** file from the **dir2** subdirectory to the **play** subdirectory you just created directory using a **relative** pathname. What command did you use? \_\_\_\_\_

g. Using a **single** command, copy **all** of the files starting with the letters "**fr**" to the **play** subdirectory using a **wildcard** and an **absolute** pathname. What command did you use?  
\_\_\_\_\_

**Step 5. Prevent Overwriting of Files**

If you copy a file and the target name already exists you will overwrite or "clobber" the file and will not receive a warning. To prevent overwriting an existing file when copying, use **cp -i** (interactive) option as a security measure. The **-i** option only prompts you if you are about to overwrite an existing file and gives you a choice. Answering "y" will overwrite the file; answering "n" will return the shell prompt without copying. It is a good idea to get into the habit of using **cp -i** since it can prevent accidental mistakes.

a. If you make changes to the **proj-b** file and then issue the command: **cp proj-b proj-template** (which already exists), what will happen to **proj-template**? \_\_\_\_\_

b. What command could you use so that you would be notified when you were about to overwrite the **proj-template** file? \_\_\_\_\_

**Step 6. Copy a Directory within the Same Directory**

To copy a directory and its contents to another directory you **must** use the **cp -r** (recursive) command. If the destination directory does not exist, it is created. Without the **-r** option, files and subdirectories contained within a directory will not be copied and you will receive an error. When used with the **-i** option, **cp** prompts for verification before overwriting an existing file.

**Command Format: *cp -r[-i] source\_directory(s) destination\_directory***

a. Verify that you are in your home directory. What command can you use to do this?  
\_\_\_\_\_

b. Copy the contents of the **dir2** directory to create a new directory in your **home** directory called **dir2.bak**. What command did you use? \_\_\_\_\_

c. Use the **ls** command to verify that the **dir2** directory has been copied. Do you see **dir2** and **dir2.bak**? \_\_\_\_\_

**Step 7. Copy a Directory to Another Directory**

a. Copy the contents of the **dir2** directory to the **practice** subdirectory using a **relative** pathname. What command did you use? \_\_\_\_\_

b. Use the **ls** command to verify that the **dir2** directory has been copied to the **practice** subdirectory. What command did your use? \_\_\_\_\_

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Worksheet – Cont.

c. Copy the contents of the **planets** directory to the **play** subdirectory, which you created earlier under the **practice** directory, using an **absolute** pathname. What command did you use?

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d. Use the **ls** command to verify that the **planets** directory has been copied to the **play** subdirectory. What command did you use? \_\_\_\_\_

**Step 9 – Remove Files and Directories Created in this Lab**

Refer to the Class file system tree structure and **remove all files** and **directories** create in you home directory during this lab (including those creating under the practice directory). You will use the **rm** and **rm -r** commands to accomplish this. Care should be taken during this process so use the **-i** option when removing the files and directories to ensure that these are the ones you want to remove.

**Step 10. Close the Terminal Window and Logout**

Double click on the dash button in the upper left corner of the screen, then click the **EXIT** icon on the front panel.