Julian U. Rangel
CPTS 224
Homework #2

Use man pages to get the syntax for any commands below that you are not familiar with.

To complement this homework, you should login a UNIX host and create a directory containing the following items.

(1) Create a file called "realityFile" containing a few lines of text.
(2) Create a normal (hard) link to "realityFile" and call it "hardRealityFile".
(3) Create a soft (symbolic) link to realityFile and call it "softRealityFile".
(4) Create a copy of file "realityFile" and call it "copyRealityFile".

Q1: (20 points) Explain what commands you used to set all this up.
I used (nano) to create the file with the text inside. Then I used (ln) to make the hard link for the "realityFile", that I used (ln –s) to make the soft link for the file, and I used (cp) to make the copy of the file.

Q2: (10 points) Give the output of *ls –l* on each file? Make some changes to the text in "realityFile". And then give the output of *ls –l* on each file? Explain how they are different.

total 12
-rw-r--r-- 1 jrangel jrangel 81 Sep 23 12:00 copyRealityFile
-rw-r--r-- 2 jrangel jrangel 81 Sep 19 15:21 hardRealityFile
-rw-r--r-- 2 jrangel jrangel 81 Sep 19 15:21 realityFile
lrwxrwxrwx 1 jrangel jrangel 11 Sep 19 15:32 softRealityFile -> realityFile

After change:
total 12
-rw-r--r-- 1 jrangel jrangel 81 Sep 23 12:00 copyRealityFile
-rw-r--r-- 2 jrangel jrangel 182 Sep 23 12:06 hardRealityFile
-rw-r--r-- 2 jrangel jrangel 182 Sep 23 12:06 realityFile
lrwxrwxrwx 1 jrangel jrangel 11 Sep 19 15:32 softRealityFile -> realityFile

The word count for the hard link was updated on the change to the "realityFile" while the copy stayed the same.

Q3: (10 points) What is the inode number of each file? (You can get the inode number with *ls –i*)

8774086 copyRealityFile
8774084 hardRealityFile
8774084 realityFile
8774085 softRealityFile

Q4: (10 points) Use the *file* command and record what type of file each is. Explain any differences.

realityFile: ASCII English text
hardRealityFile: ASCII English text
softRealityFile: symbolic link to `realityFile'fil
copyRealityFile: ASCII English text

The only difference was that soft link and only pointing to the file by name.

Q5: (10 points) Make "hardRealityFile" readable, writeable, executable by you, but not readable, writeable, executable by anyone else. What command you used to do this.
Since my original "hardRealityFile" was writeable by the group and executable by others I had to use the (chmod o-x hardRealityFile) and (chmod g-w hardRealityFile). Then I had to add permission for myself to execute (chmod u+x hardRealityFile).

Q6: (10 points) What is the permission of "realityFile" before and after you do Q5? How they are different? Why?
They are changed because the linker points to the file and it also updates the changes done to the original file.

Q7: (10 points) *cat* each file. Are the results the same for each file?
The only file that had a different output was the softRealityFile but I think it has to do with the fact that it was a copy of the file before we changed it. Since it's a copy it doesn't get updated when the original file changes.

Q8: (10 points) Make some changes to the text in "softRealityFile". Explain what happened to the file size of "hardRealityFile", "realityFile", and "softRealityFile". "softRealityFile" was the only file not to get bigger while "hardRealityFile" and "realityFile" were the only files to get bigger.

Q9: (10 points) Move "realityFile" to "realityFile1". What is the output of ls -l. Explain what happened to "softRealityFile", copyRealityFile, and "hardRealityFile" (consider link count and inode number).
The inode number is not changed and neither did the pointer number.

Before the move:
total 12
8774086 -rw-r--r-- 1 jrangel jrangel 81 Sep 23 12:00 copyRealityFile
8774084 -rwx------ 2 jrangel jrangel 255 Sep 23 22:33 hardRealityFile
8774084 -rwx------ 2 jrangel jrangel 255 Sep 23 22:33 realityFile1
8774085 lrwxrwxrwx 1 jrangel jrangel 11 Sep 19 15:32 softRealityFile -> realityFile
After the move:
total 8
8774086 -rw-r--r-- 1 jrangel jrangel 81 Sep 23 12:00 copyRealityFile
8774084 -rwx------ 2 jrangel jrangel 255 Sep 23 22:33 hardRealityFile
8774085 lrwxrwxrwx 1 jrangel jrangel 11 Sep 19 15:32 softRealityFile -> realityFile