# NSSA221 - System Administration I

# Scripting Assignment 03 – Symbolic Links

Symbolic links are very common in \*nix like systems, they are used to allow easy access to files or to maintain different versions of the same library. In many ways we can think of symbolic links as being similar to shortcuts in Windows. In this scripting exercise, you will become familiar with the various commands used to find symbolic links, and their associated target paths. You will not be given the entire command and will need to rely on the man pages to find the solution for the first set of exercises. Then you will be given requirements to write a script using the commands.

Name: Hai Jie Liu

\*\*\*\*\*\* Please **submit** your answers to **questions 1 through 5** \*\*\*\*\*

**\*\*\*\*\*\*\*\*\*AND\*\*\*\*\*\*\*\*\*\***

the sign off sheet to the drop box

1. (5 points) Write a command to create a symbolic link. Create a file called web in the /var directory and then create a symbolic link on a user’s desktop. Use the man page to find information on the ln command to do this and provide the solution in the line below.

ln -s /var/web /home/student/Desktop

1. (5 points) To verify that the link was created use the **ls** command. Based on the output from the command what are two indicators that tell you the file is a symbolic link? Write the solutions below.

The two indicators that tell you the file is a symbolic link is the color which is cyan and in the ls -l command, the l just before the permissions.

1. (5 points) Write a single line command that will print all symbolic links in a directory and subdirectories. Think about you normally list files, but in this case you only want to list files that are “linked”. Hint: Piping grep and using regex can be helpful. Write the solution below.

sudo ls -lR /home | grep ^l

This command prints out all symbolic links in the home directory and its subdirectories. You can replace the /home directory with any other directory.

1. (5 points) Use the **find** command to print symbolic links in a directory and any subdirectories. Hint: Use the “type” parameter. Write the solution below.

sudo find /home -type l

1. (5 points) Write a command to read the target path for a given symbolic link. Hint: Use the man page for the **readlink** command. Write the solution below.

readlink web

The symbolic link web can be swapped with any other symbolic links for the target path.

**Points** \_\_\_\_/25

**\*\*\*\*\*\*\*\*\* Script \*\*\*\*\*\*\*\*\*\***

For the scripting part of the assignment, the script will be run by an end user. In Windows most users know that to create a shortcut you right-click on the file and select “Create Shortcut.” Your script should do something very similar. The end user doesn’t want to be bothered with learning all these newfangled “commands,” so we want to create a script that will simplify the process for them.

Create a script that will ask the user to select a file that they want to create a “shortcut” for. The script should check that the **file exists anywhere on the system**, the find command can help with this. We only want the user to create symbolic links on their **desktop**. Once the link is created, the script will provide a summary report with the following information regarding the links that exist on their Desktop.

1. It will tell the user the current directory they are in, which should be their Desktop, but maybe not.
2. If they are not in the Desktop directory inform them.
3. It will tell the user the number of symbolic links that exist.
4. It will list all symbolic links on their Desktop.
5. It will list the target path for all the symbolic links.

The user can exit the script by typing “quit.”

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| **Deliverables** | **Points** | **Date** |  | **Signature** |
| Script clears the terminal window. | 2 |  |  |  |
| The user is informed of the directory they are currently working in, and if it is not their Desktop they are informed. | 3 |  |  |  |
| The user is prompted to enter a file that they want to create the shortcut for. | 3 |  |  |  |
| The Script checks that the file exists and if it does not return the user is returned to the prompt. | 3 |  |  |  |
| The Script creates the symbolic link. | 3 |  |  |  |
| A summary report is provided to the user. | 2 |  |  |  |
| The summary report tells the user the number of symbolic links, including the link just created. | 2 |  |  |  |
| The summary report lists all symbolic links in the current directory. | 2 |  |  |  |
| The summary report lists the target path for each symbolic link in the directory. | 2 |  |  |  |
| The output is formatted cleanly and easily readable. | 3 |  |  |  |
| **Points Earned** (max 25) | | | |  |