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BSCS-5th Semester

OS Lab Tasks

LAB # 7

Submitted to:

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Question 01

What would be the result of the following commands. Understand that is

- cat filename > new // filename is name of file that exist at current path
- who > new
- ls | sort –r
- ls | sort -r >> new

Also define the understanding of these commands in your own words.

```
student@student-virtual-machine:~$ pico Task1
student@student-virtual-machine:~$ cat Task1 > new
student@student-virtual-machine:~$ who > new
student@student-virtual-machine:~$ ls | sort -r
Videos
Templates
Task1
stock
sss2
sss
SortLabNumeric
snap
result.comp
Public
Pictures
OSlab4
oslab
newlab
new
myFile
Music
labSort
lab7
lab6
lab4.1
lab4
fileee3
fileee
file2.c
file2
Downloads
Documents
Desktop
ddd
Books
student@student-virtual-machine:~$ ls | sort -r >> new
```

cat filename > new

- Reads the content of filename and writes it into new, replacing any existing content.

who > new

- Gets the list of logged-in users and writes it into new, replacing any existing content.

ls | sort -r

- Lists files in the current directory and sorts them in reverse order before displaying them.

ls | sort -r >> new

- Lists and sorts files in reverse order, then appends the result to new without deleting its previous content.

Question 02

Write a command that does the following:

1. Sorts the contents of **fruits.txt** in alphabetical order.
2. Filters the sorted output to only display fruits that contain the substring "ap".

```
student@student-virtual-machine:~$ pico fruits.txt
student@student-virtual-machine:~$ sort fruits.txt | grep "ap"
apple
grapes
pineapple
student@student-virtual-machine:~$
```

Question 03

Define streams, redirection and pipes with one example of each in your own words.

Streams

- Streams are channels through which data flows in a Linux system.
- There are three standard streams:
    - **Standard Input (stdin, 0):** Takes input (keyboard by default).
    - **Standard Output (stdout, 1):** Displays normal output.
    - **Standard Error (stderr, 2):** Displays error messages.

Example:

cat : This command takes input from the user (stdin) and displays it on the screen (stdout).

Redirection (>, >>, <, <<)

- Redirection allows us to change the default input/output destination.
    - > redirects output to a file (overwrites it).
    - >> appends output to a file.
    - < takes input from a file instead of the keyboard.
    - << is used mostly in script files (shell programs) to provide input to other commands.

Example:

ls > files.txt : Saves the list of files into files.txt instead of displaying it on the screen.

Pipes (|)

- Pipes (|) pass the output of one command as input to another.
- This helps in processing data efficiently.

Example:

ls | sort : Lists files and sorts them before displaying the result.