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BSCS-5

OS LAB: 07

Q1) What would be the result of the following commands Also define the understanding of these commands in your own words.

1. cat filename > new

- **UNDERSTANDING :**
  This command reads the contents of filename and redirects the output to a new file named new. If new already exists, it will overwrite its content.
- **CODE&RESULT:**

```
student@student-virtual-machine:~$ pico file
student@student-virtual-machine:~$ cat file >new
student@student-virtual-machine:~$ cat new
Wow    it is kinda fun
ookkk
ayesha
How
Me
cat
beautiful
caption
student@student-virtual-machine:~$
```

2. who > new

- **UNDERSTANDING :**
  The who command lists the currently logged-in users .And the output is redirected to new, replacing any existing content in new

- **CODE&RESULT:**

```
student@student-virtual-machine:~$ who >new
student@student-virtual-machine:~$ cat new
student  tty2         2025-03-21 11:05 (tty2)
```

3. ls | sort –r

- **UNDERSTANDING :**
  The ls command lists the files and directories in the current directory. And the output is piped (|) to sort -r, which sorts the list in reverse order.
- **CODE&RESULT:**

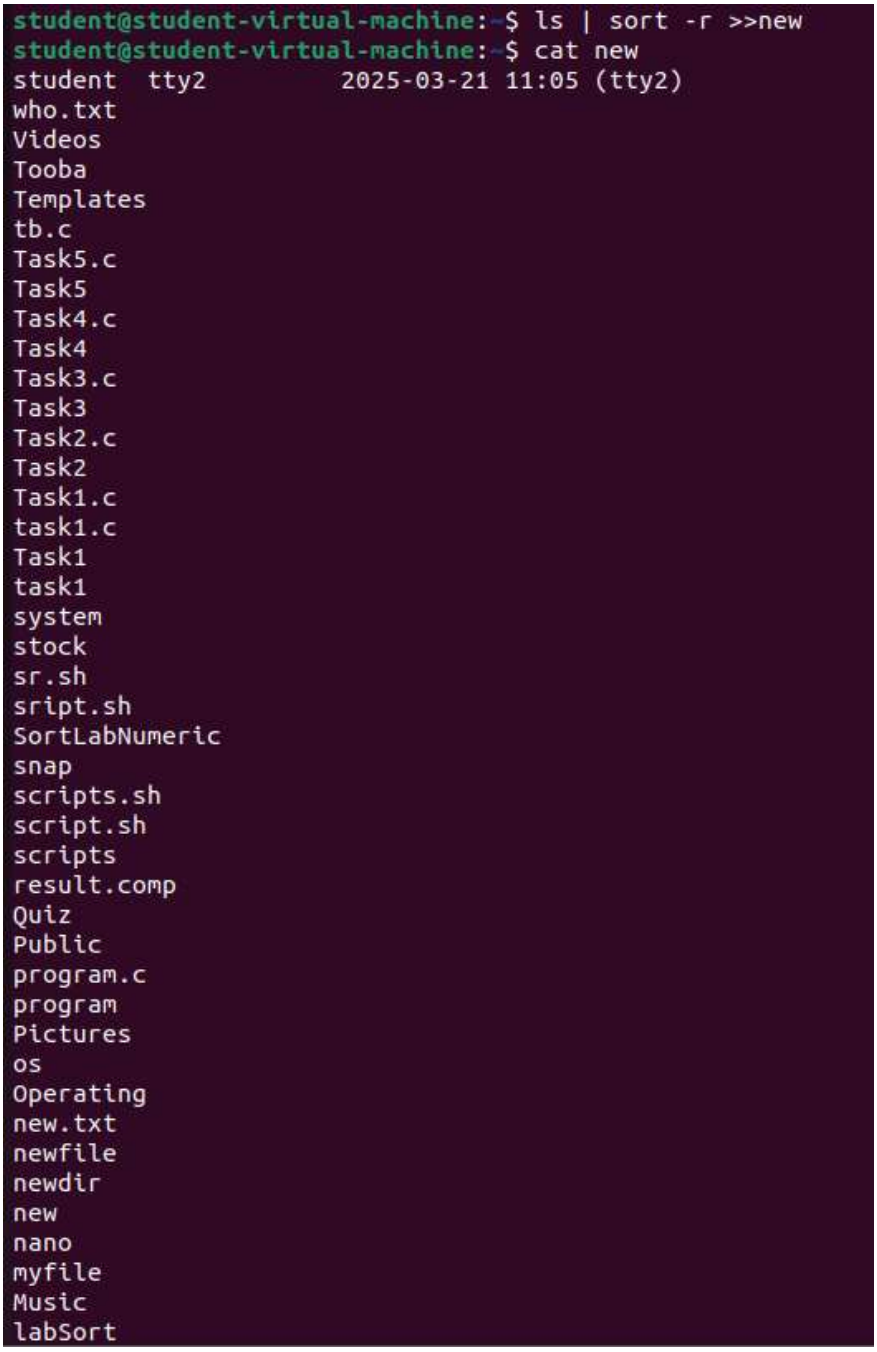
```
student@student-virtual-machine:~$ ls | sort -r
who.txt
Videos
Tooba
Templates
tb.c
Task5.c
Task5
Task4.c
Task4
Task3.c
Task3
Task2.c
Task2
Task1.c
task1.c
Task1
task1
system
stock
sr.sh
sript.sh
SortLabNumeric
snap
scripts.sh
script.sh
scripts
result.comp
Quiz
Public
program.c
program
Pictures
os
Operating
new.txt
newfile
newdir
new
nano
myfile
Music
labSort
```

4. ls | sort -r >> new

- **UNDERSTANDING :**

  LS. Lists all files and directories in the current directory. **Pipes (|)** the output of ls into the sort -r command. **Sort -r** sorts the list in reverse order (descending) **Appends (>>)** the sorted output to the file new. If new does not exist, it will be created. If new already exists, the new sorted output will be added at the end without deleting the previous content.

- **CODE&RESULT:**



Q2 Write a command that does the following:

1. Sorts the contents of **fruits.txt** in alphabetical order.

```
student@student-virtual-machine:~$ pico fruits.txt
student@student-virtual-machine:~$ cat fruits.txt
orange
mango
appple
pineapple
watermelon
melon
strawberry

student@student-virtual-machine:~$ sort fruits.txt

appple
mango
melon
orange
pineapple
strawberry
watermelon
```

2. Filters the sorted output to only display fruits that contain the substring "ap".

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

Q3 Define streams, redirection and pipes with one example of each in your own words.

Streams:

Streams are the flow of data between a program and an input/output device. There are three main types:

1. Standard Input (stdin) - 0 → Takes input from the keyboard or a file.
2. Standard Output (stdout) - 1 → Displays output on the terminal.
3. Standard Error (stderr) - 2 → Displays error messages.

Redirection:

Redirection is used to send the output of a command to a file instead of displaying it on the terminal.

- > overwrites the file.
- >> appends data to the file.

Pipes (|)

A pipe (|) is used to send the output of one command as input to another command.