Linux Commands

CSF Experiment 5

Lab Assignments to complete in this session:

1. **Display top 10 processes in descending order.**

   Command: ps -eo pid,comm,%mem,%cpu --sort=-%cpu | head -n 10

   ```
   sakshat193@sakshat193-VirtualBox:~$ ps -eo pid,comm,%mem,%cpu --sort=-%cpu | head -n 10
       PID COMMAND          %MEM %CPU
      2182 gnome-shell      13.2 19.7
      2496 ibus-extension-   0.9  2.2
      3145 gnome-terminal-   1.8  2.0
         1 systemd           0.4  1.3
        40 kworker/u10:0-e   0.0  1.2
      1964 dbus-daemon       0.2  1.0
      2810 gjs               2.0  0.9
      1952 pipewire          0.4  0.9
      2924 VBoxClient        0.1  0.8
   ```

2. **Display processes with highest memory usage.**

   Command: ps -eo pid,comm,%mem --sort=-%mem | head

   ```
   sakshat193@sakshat193-VirtualBox:~$ ps -eo pid,comm,%mem --sort=-%mem | head
       PID COMMAND          %MEM
      2182 gnome-shell      13.5
      2903 mutter-x11-fram   2.9
      2760 gsd-xsettings     2.4
      2350 evolution-alarm   1.9
      2349 Xwayland          1.9
      3145 gnome-terminal-   1.9
      2810 gjs               1.9
      2277 evolution-sourc   1.3
      2900 xdg-desktop-por   1.3
   ```

3. **Display current logged in user and log name.**

   Command: echo "Current User: $USER"

                    echo "Logname: $LOGNAME"

   ```
   sakshat193@sakshat193-VitualBox:-$ echo "Current User: $USER"
   Current User: aagnyamistry
   sakshat193@sakshat193-VitualBox:-$ echo "Logname: $LOGNAME"
   Logname: aagnyamistry
   ```

4. **Display current shell, home directory, operating system type, current path setting, current working directory.**

   Command: echo "Shell: $SHELL"

   .   echo "Home Directory: $HOME"

   .   echo "OS Type: $(uname)"

   .   echo "Path Setting: $PATH"

   .   echo "Current Working Directory: $(pwd)"

Output:

.   Shell: /bin/bash

.   Home Directory: /home/sakshat193

.   OS Type: Linux

.   Path Setting:
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin

.   Current Working Directory: /home/sakshat193

5. **Display OS version, release number, kernel version**

   Command: echo "OS Version: $(uname -o)"

   .   echo "Release Number: $(uname -r)"

   .   echo "Kernel Version: $(uname -v)"

   Output:

   .   OS Version: GNU/Linux

   .   Release Number: 6.8.0-41-generic

   .   Kernel Version: #41-Ubuntu SMP PREEMPT_DYNAMIC Fri Aug 2 20:41:06 UTC 2024

6. **Write a command to display the first 15 columns from each line in the file**

   Command: cut -d' ' -f1-15 ./Hello_World

   ```
   sakshat193@sakshat193-VirtualBox:~/Desktop/CSF Exports$ cut -d',' -f1-15 ./Hello_World
   Brightly shining stars above gently illuminate the calm night sky with a soft glow.
   Whispers of the wind softly rustle through the trees as moonlight dances gently.
   Endless fields of golden wheat sway gracefully under the warm embrace of sunlight.
   Gentle waves lap softly against the shore, creating a soothing and rhythmic sound.
   Quiet mornings bring a serene stillness, where the world feels peaceful and calm.
   ```

7. **Cut specified columns from a file and display them**

   Command: cut -d ' ' -f 3,4 Hello_World

   ```
   sakshat193@sakshat193-VirtualBox:~/Desktop/CSF Exports$ cut -d ' ' -f 3,4 Hello_World
   stars above
   the wind
   of golden
   lap softly
   bring a
   ```

8. **Sort given file ignoring upper and lower case**

   Command: sort -f Hello_World

   ```
   sakshat193@sakshat193-VirtualBox:~/Desktop/CSF Exports$ sort -f Hello_World
   Brightly shining stars above gently illuminate the calm night sky with a soft glow.
   Endless fields of golden wheat sway gracefully under the warm embrace of sunlight.
   Gentle waves lap softly against the shore, creating a soothing and rhythmic sound.
   Quiet mornings bring a serene stillness, where the world feels peaceful and calm.
   Whispers of the wind softly rustle through the trees as moonlight dances gently.
   ```

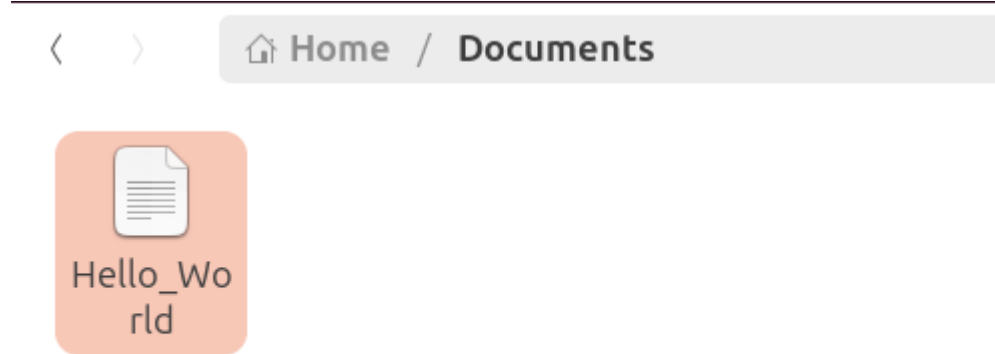9. **Displays only directories in current working directory.**

   Command: ls

   Output:

   .   Hello_World

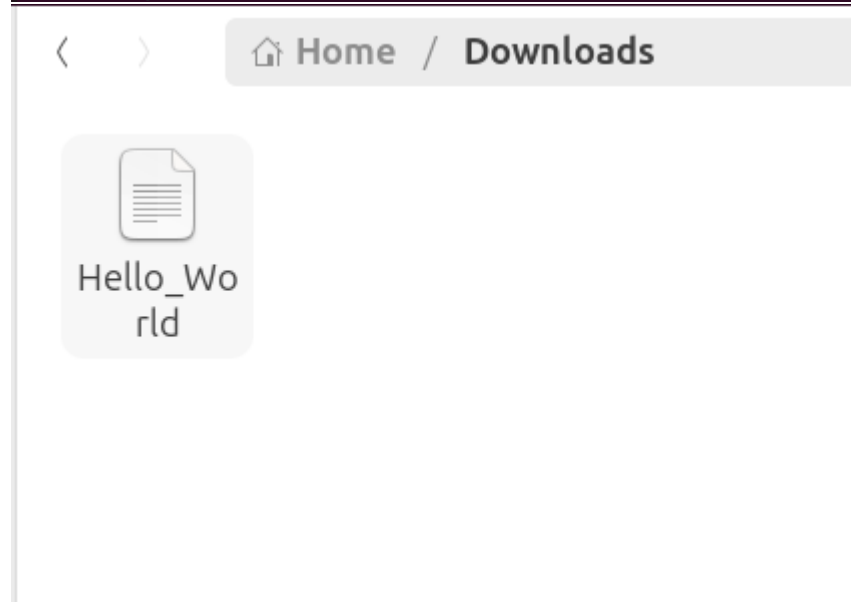**10. Copying files from one place to another.**
   Command: cp Hello_World /home/sakshat193/Documents

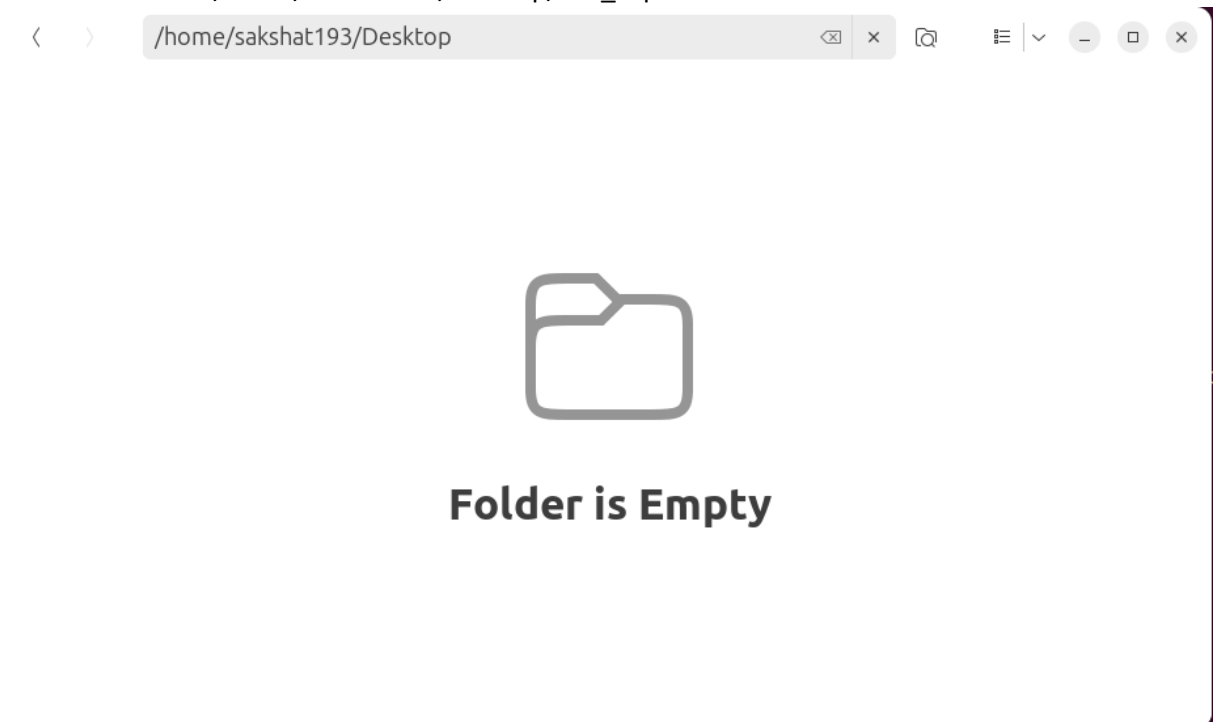**11. Moving files from one place to another.**
   Command: mv Hello_World /home/sakshat193/Downloads

```
sakshat193@sakshat193-VirtualBox:~/Desktop/CSF Exports$ cp Hello_World /home/sakshat193/Documents
sakshat193@sakshat193-VirtualBox:~/Desktop/CSF Exports$ cd /home/sakshat193/Documents
sakshat193@sakshat193-VirtualBox:~/Documents$ mv Hello_World /home/sakshat193/Downloads
```

12. **Removing specific directory with various options**
    Command: rm -r /home/sakshat193/Desktop/CSF_Exports

/home/sakshat193/Desktop

Folder is Empty

13. **List the numbers of users currently login in the system and then sort it.**
    Command: who | awk '{print $1}' | sort | uniq -c

```
sakshat193@sakshat193-VitualBox:~$ who | awk '{print $1}' | sot | uniq -c
        2 aagnyamistry
```

14. **Merge two files into one file**
    Command: cat <file1> <file2> > <merged_file>

15. **Change the access mode of a given file**
    Command: chmod -r Hello_World *(changes to read only)*
    .   chmod -w Hello_World *(changes to modify the contents of a file or create/delete files within a directory.)*
    .   chmod -x Hello_World *(changes to execute)*

16. **Display the last ten lines of the file.**
    Command: tail -n 10 Hello_World.txt

```
sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ tail -n 10 Hello_World.txt
"Rain tapped gently on the window, creating a soothing symphony of sounds."
"The aroma of freshly baked bread wafted through the cozy kitchen."
"Ancient ruins whispered stories of civilizations long gone but remembered."
"Children's laughter filled the park, a melody of joy and innocence."
"The mountain peaks, kissed by the morning sun, glistened with promise."
"Her journal was a canvas, capturing moments of thought and fleeting emotions."
"The train's rhythmic chug became a lullaby for the weary traveler."
"A lone lantern flickered in the distance, guiding wanderers through the night."
"Seasonal flowers danced in the garden, celebrating the arrival of spring."
"A tapestry of stars stretched across the night sky, endless and mesmerizing."
```

17. **Locate files in a directory and in a subdirectory.**

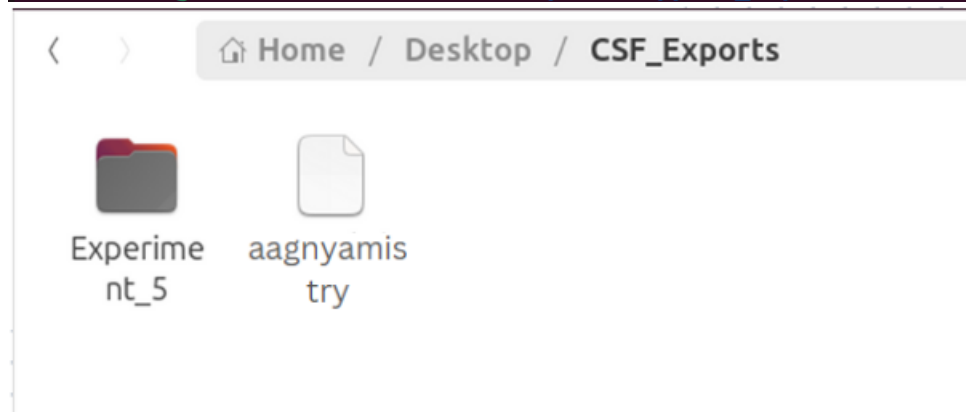   **Command:** find Experiment_5 -name Hello_World

    ```
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ find Hello_World.txt
    find: 'Hello_World.txt': No such file or directory
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ find Experiment_5 -name Hello_World.txt
    Experiment_5/Hello_World.txt
    ```

18. **Display the contents of all files having a name starting with ap followed by any number of characters.**

    Command: find . -type f -name '[a-k]*'

19. **Rename any file aaa to aaa.aa1, where aa1 is the user login name.**

    ```
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ touch aaa
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ mv aaa aaa.$(whoami)
    ```

    ‹ ›   🏠 Home / Desktop / **CSF_Exports**

    Experime   aagnyamis
    nt_5   try

20. **Write a command to search the word 'picture' in the file and if found, the lines containing it would be displayed on the screen.**

    Command: grep 'picture' ./Hello_World.txt

    ```
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ grep 'picture' ./Hello_World.txt
    "A tapestry of stars stretched across the night sky, endless and mesmerizing picture ."
    ```

21. **Write a command to search for all occurrences of 'Rebecca' as well as 'rebecca' in file and display the lines which contain one of these words.**

    Command: grep -i 'rebecca' Hello_World.txt

    ```
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ grep -i 'rebecca' Hello_World.txt
    "Sunsets in the desert paint skies in hues of amber and gold, reminding Rebecca of her favorite colors."
    "The library's quiet corners are perfect for a peaceful read, where Rebecca often lost herself in books."
    "A soft breeze carried the scent of blooming jasmine through the air, as Rebecca closed her eyes and breathed deeply."
    "Coffee cups clinked as laughter echoed through the bustling café, where Rebecca and her friends gathered after a long day."
    "The old oak tree stood tall, its branches a haven for birds, dreams, and for Rebecca, who would sit beneath it and write."
    "City lights shimmered like stars, reflecting in the calm river below, as Rebecca watched the night come alive."
    "Underneath the moon's glow, Rebecca wandered the streets, the night revealing its hidden beauty to her."
    "Waves crashed rhythmically against the shore, singing their timeless song, as Rebecca walked along the beach, lost in thought."
    "Vintage postcards from distant lands told tales of adventures and romance, reminding Rebecca of her own travels."
    "Rain tapped gently on the window, creating a soothing symphony of sounds, as Rebecca curled up with a book."
    "The aroma of freshly baked bread wafted through the cozy kitchen, where Rebecca and rebecca often experimented with new recipes."
    "Ancient ruins whispered stories of civilizations long gone but remembered, and Rebecca could almost hear their voices."
    "Children's laughter filled the park, a melody of joy and innocence, as Rebecca watched them play from a bench."
    "The mountain peaks, kissed by the morning sun, glistened with promise, and Rebecca felt a sense of adventure stirring."
    "Her journal was a canvas, capturing moments of thought and fleeting emotions, a reflection of Rebecca's inner world."
    "The train's rhythmic chug became a lullaby for the weary traveler, as Rebecca dozed off, dreaming of faraway places."
    "A lone lantern flickered in the distance, guiding wanderers through the night, and Rebecca followed its light."
    "Seasonal flowers danced in the garden, celebrating the arrival of spring, where Rebecca often spent her afternoons."
    "A tapestry of stars stretched across the night sky, endless and mesmerizing, as Rebecca and rebecca gazed up in wonder."
    ```

22. **Write a command to search all four-letter words whose first letter is a 'b' and last letter, a 'k'.**

    Command: grep -E '\bb[a-zA-Z]{2}k\b' Hello_World.txt

    ```
    sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ grep -E '\bb[a-zA-Z]{2}k\b' Hello_World.txt
    "Rain tapped gently on the window, creating a soothing symphony of sounds, as Rebecca curled up with a book."
    ```

23. Write a command to see only those lines which do not contain the search patterns

Command: grep -v "the" Hello_World.txt

```
sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ grep -v "the" Hello_World.txt
"The library's quiet corners are perfect for a peaceful read, where Rebecca often lost herself in books."
"The old oak tree stood tall, its branches a haven for birds, dreams, and for Rebecca, who would sit beneath it and write."
"Vintage postcards from distant lands told tales of adventures and romance, reminding Rebecca of her own travels."
"Her journal was a canvas, capturing moments of thought and fleeting emotions, a reflection of Rebecca's inner world."
```

24. Sort a given file in alphabetical order using sort command.

Command: sort Hello_World.txt

```
sakshat193@sakshat193-VirtualBox:~/Desktop/CSF_Exports$ sort Hello_World.txt
"A lone lantern flickered in the distance, guiding wanderers through the night, and Rebecca followed its light."
"Ancient ruins whispered stories of civilizations long gone but remembered, and Rebecca could almost hear their voices."
"A soft breeze carried the scent of blooming jasmine through the air, as Rebecca closed her eyes and breathed deeply."
"A tapestry of stars stretched across the night sky, endless and mesmerizing, as Rebecca and rebecca gazed up in wonder."
"Children's laughter filled the park, a melody of joy and innocence, as Rebecca watched them play from a bench."
"City lights shimmered like stars, reflecting in the calm river below, as Rebecca watched the night come alive."
"Coffee cups clinked as laughter echoed through the bustling café, where Rebecca and her friends gathered after a long day."
"Her journal was a canvas, capturing moments of thought and fleeting emotions, a reflection of Rebecca's inner world."
"Rain tapped gently on the window, creating a soothing symphony of sounds, as Rebecca curled up with a book."
"Seasonal flowers danced in the garden, celebrating the arrival of spring, where Rebecca often spent her afternoons."
"Sunsets in the desert paint skies in hues of amber and gold, reminding Rebecca of her favorite colors."
"The aroma of freshly baked bread wafted through the cozy kitchen, where Rebecca and rebecca often experimented with new recipes."
"The library's quiet corners are perfect for a peaceful read, where Rebecca often lost herself in books."
"The mountain peaks, kissed by the morning sun, glistened with promise, and Rebecca felt a sense of adventure stirring."
"The old oak tree stood tall, its branches a haven for birds, dreams, and for Rebecca, who would sit beneath it and write."
"The train's rhythmic chug became a lullaby for the weary traveler, as Rebecca dozed off, dreaming of faraway places."
"Underneath the moon's glow, Rebecca wandered the streets, the night revealing its hidden beauty to her."
"Vintage postcards from distant lands told tales of adventures and romance, reminding Rebecca of her own travels."
"Waves crashed rhythmically against the shore, singing their timeless song, as Rebecca walked along the beach, lost in thought."
```