**Practical-4**

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| AIM | List down all processes with their states sorted by their CPU Usage. Identify current  running process. |
| Command | Ps |
| Output |  |
| AIM | List down all processes associated with current user. |
| Command | Ps -u |
| Output |  |
| AIM | List down all processes associated with their terminal and their states. Identify current  running process. |
| Command | Ps aux |
| Output |  |
| AIM | Compare the output of “ps lx” and “ps l” commands. |
| Command | Ps lx  Ps l |
| Output |  |
| AIM | List down all the names and numbers of all available signals. |
| Command | Kill -l |
| Output |  |
| AIM | Run the “sleep 10000” in background. (i.e. sleep 10000 &) |
| Command | Sleep 10000 & |
| Output |  |
| AIM | Check the PID of sleep process and kill it using PID. |
| Command | Kill 4411 |
| Output |  |
| AIM | Apply w command and observer the output |
| Command | w |
| Output |  |
| AIM | Open the firefox browser. Check the processes associated with firefox. |
| Command | Pgrep firefox |
| Output |  |
| AIM | Kill all processes associated with firefox by its name. |
| Command | Kill 3012 |
| Output |  |
| AIM | Give the difference between kill and pkill. |
| Command | Kill  Pkill |
| Output | pkill is similar to kill, but it allows you to send signals to processes based on their name or other attributes. |
| AIM | Run “lscpu” command and observer the output. |
| Command | lscpu |
| Output |  |

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|  | PART B  Aim : Control Services and daemons |
| AIM | List all services on your system.(systemctl list-units --type=service) |
| Command | systemctl list-units --type=service |
| Output |  |
| AIM | Check whether the ssh service is active or not. (sudosystemctl status service\_name) |
| Command | sudosystemctl status ssh |
| Output |  |
| AIM | If the package is not available, i nstall ssh package (sudo apt-get install ssh) |
| Command | sudo apt-get install ssh |
| Output |  |
| AIM | If the service is available and active, check the process state usng ps –p PID |
| Command | ps –p 6077 |
| Output |  |
| AIM | Add the firewall rule to allow remote service using ssh(sudo ufw allow ssh) |
| Command | Ip a |
| Output |  |
| AIM | Check your IP address |
| Command | Ip a |
| Output |  |
| AIM | Access another user terminal using ssh |
| Command | sudo ssh <username>@<any pc’s ip address>, it will connect to shell of another linux pc with the specified username and ip address. |
| AIM | Stop the service and check the status |
| Output | exit  sudo systemctl status ssh, the shell will be exited by “exit” command and we will return to our shell then the status will be stopped. |
| AIM | Disable the service and check the status |
| Output | udo stop ssh, it will stop the service permanently |
| AIM | Enable it again and check the status |
| Output | sudo start ssh  sudo systemctl status ssh, the status of the service will not be changed to “active”. |
| AIM | Restart the service and check the status |
| Output | sudo systemctl status ssh, the status will be “active start” because it was started already. |
| AIM | Observe the analyze the output of below mentioned command  1. systemctl is-active ssh  2. systemctl is-enabled ssh  3. systemctl is-failed ssh |
| Output | a. systemctl is-active ssh, it will check that whether the service is active or not  b. systemctl is-enabled ssh, similarly it will check of enable  c. systemctl is-failed ssh, similarly it will check whether the service is enabled or not? |

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|  | PART C  Aim: Improve Command Line Productivity  I/o Redirection |
| AIM | Create a file named “newfile.txt” and insert a text into created file as follow:  The operating system is a system program that serves as an interface between the  computing system and the end-user. |
| Command |  |
| Output |  |
| AIM |  |
| Command | Redirect the output of “newfile.txt” file to file “new.txt” using command. |
| Output |  |
| AIM | Type command cat, then enter key and enter some text. Observe the output. |
| Command |  |
| Output |  |
| AIM | Type command i) cat <newfile.txt ii) cat newfile.txt. Interpret the output in both  cases. |
| Command |  |
| Output |  |
| AIM | Type command cat – and enter any text. |
| Command |  |
| Output |  |
| AIM | Use both redirection operator < and > at once to redirect the output of one file to  another. |
| Command | cat < input\_file.txt > output\_file.txt |
| AIM | Summarize the use of cat command with redirection operator based on your done  exercise. |
| ANS | There are mainly three symbols that we can use to optimise the file reading, writing operations. The first operator is “>” this operator takes the thing on the left of it as input and redirects it to the thong which is on the right. The operator “<” takes the thing on let of it, as output and redirects it to the thing which is on the left. |
| AIM | Try following command andinterpret the output:  a) ls >filelist  b) cat newfile.txt new.txt >> report  c) cat newfile.txt > newfile.txt  d) date; who  e) date; who>logfile  f) (date; who) > logfile |
| Output | A)    B)    C)    D)    E)    F) |

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|  | Piping |
| AIM | ls | wc -l |
| Output |  |
| AIM | ls | less |
| Output |  |
| AIM | store the value of count in file named “countfile” using pipeline. |
| Output |  |
| AIM | Try command who | sort and observe the output. |
| Output |  |
| AIM | Strore the sorted output in file named “sortedlist” |
| Output |  |
| AIM | Try cal 1996 | head -10 |
| Output |  |
| AIM | Who | sort – logfile >newfile |
| Output |  |