- **Display top 10 processes**
  ps- The ps -e command in Linux is used to display information about all running processes on the system, regardless of the user who started them

  pipe- The pipe command in Linux is used to take the output of one command and use it as input to another command. It is represented by the | character. This takes the output of command1 and passes it as input to command2. The output of command1 is not printed to the terminal, but is instead used as input to command2. This can be useful for chaining together multiple commands to perform more complex tasks.

```
student@LAB302PC34:~$ echo "Top 10 processes are"
Top 10 processes are
student@LAB302PC34:~$ ps -e | head -n 10
  PID TTY          TIME CMD
    1 ?        00:00:01 systemd
    2 ?        00:00:00 kthreadd
    3 ?        00:00:00 rcu_gp
    4 ?        00:00:00 rcu_par_gp
    5 ?        00:00:00 netns
    6 ?        00:00:00 kworker/0:0-events
    7 ?        00:00:00 kworker/0:0H-events_highpri
    9 ?        00:00:00 mm_percpu_wq
   10 ?        00:00:00 rcu_tasks_rude_
```

- **The top ten processes with memory usage :**
  The command 'ps -eo pid,ppid,%mem,%cpu --sort=-%mem | head -n 10' displays information about the top 10 processes consuming the most memory, sorted by memory usage in descending order. The output includes the process ID, parent process ID, memory usage, and CPU usage for each process in that order.

```
student@LAB302PC34:~$ echo "The top ten processes with memory usage :"
student@LAB302PC34:~$ ps -eo pid,ppid,%mem,%cpu --sort=-%mem | head -n 10
  PID  PPID %MEM %CPU
 1024     1 10.2  0.9
 2210  1979  9.2  2.8
 1979  1574  9.0  2.9
 5190  5153  8.6  0.4
```

1574	1538	4.6	1.2
884	852	2.9	1.2
2165	1979	2.8	0.1
1976	1	2.3	0.0
2281	1979	2.0	0.0

- **Display current user logged in and logname**
  The echo command in Linux is used to print text to the terminal or standard output. It can be used to display simple messages or to provide feedback to the user.
  In Linux, variables are used to store and manipulate data within a shell script or terminal session. They can hold various types of data, such as text strings, integers, or arrays. Variables in Linux are case-sensitive and must start with a letter or underscore character. They can contain letters, numbers, and underscores, but cannot contain spaces or other special characters. To access the value of a variable, you need to prefix its name with a $ character,

student@LAB302PC34:~$ echo "Your Logname : $echo($LOGNAME)"

Your Logname : student

student@LAB302PC34:~$ echo "Your username: $echo($USER)"

Your username: (student)

student@LAB302PC34:~$ now=$(date)

student@LAB302PC34:~$ echo "Current date and time: $echo($now)"

Current date and time: (Thursday 16 February 2023 03:41:51 PM IST)

student@LAB302PC34:~$ echo "Currently logged on users: $(whoami)"

Currently logged on users: student

- **Display current shell, home directory, operating system type, current working directory**
  Pwd- It stands for "Print Working Directory" and is a command used in Linux and other Unix-like operating systems to print the full path of the current working directory.

student@LAB302PC34:~$ echo "Current shell: $echo($SHELL)"

Current shell: (/bin/bash)

student@LAB302PC34:~$ echo "Current Home directory: $echo($HOME)"

Current Home directory: (/home/student)

student@LAB302PC34:~$ uname -s

Linux

student@LAB302PC34:~$ echo "Current working directory: $echo($PWD)"

Current working directory: (/home/student)

- **Display OS version, release number, kernel version.**
  The uname command is a Linux command used to display information about the operating system and system hardware.
  -a option : Displays all system information, including the operating system name, version, and hardware architecture.
  -s: Displays the operating system name.

student@LAB302PC34:~$ uname -a

Linux LAB302PC34 5.15.0-56-generic #62-Ubuntu SMP Tue Nov 22 19:54:14 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux