Experiment No- 06

Aim: Execution of Memory Management Commands

Roll No.	17
Name	Manav Jawrani
Class	D10A
Subject	Unix Lab
Lab Outcome	LO6: To understand memory management and memory management commands in Unix.
Date of Performance/ Submission	16/3/2022-22/3/2022

Aim : To execute memory management commands in UNIX.

Introduction:

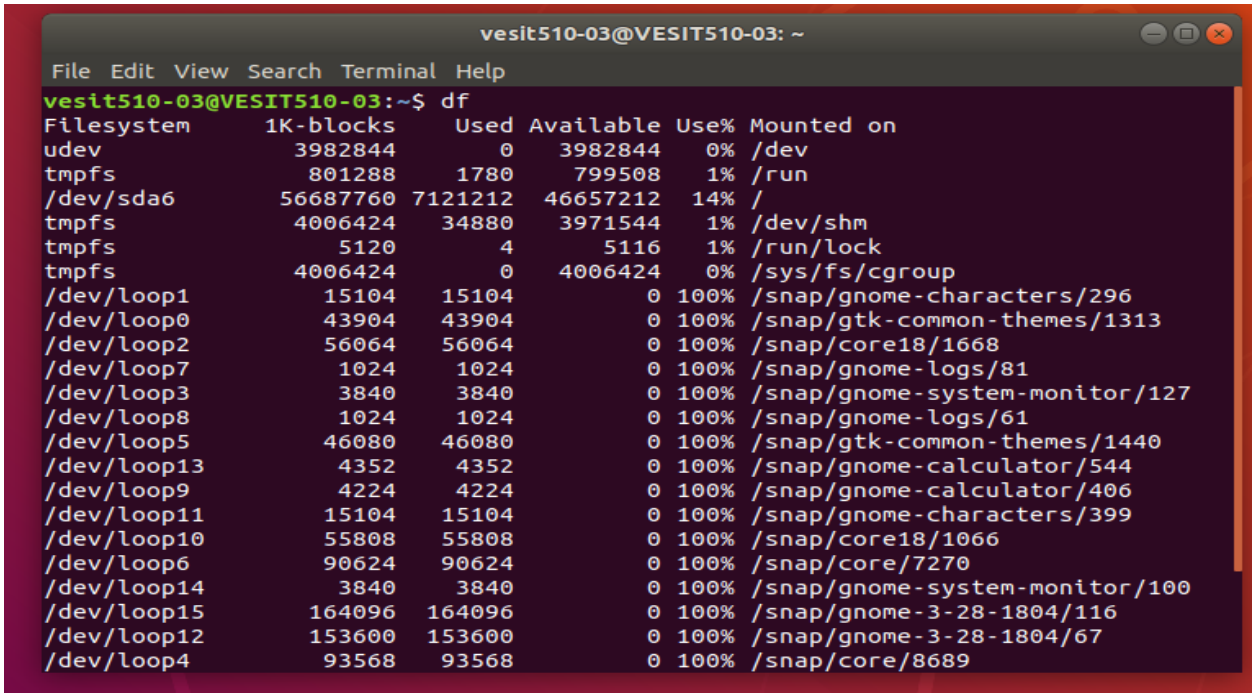
The term Memory can be defined as a collection of data in a specific format. It is used to store instructions and processed data. The memory comprises a large array or group of words or bytes, each with its own location. The primary motive of a computer system is to execute programs. These programs, along with the information they access, should be in the main memory during execution. The CPU fetches instructions from memory according to the value of the program counter.

Memory management is a form of resource management applied to computer memory. The essential requirement of memory management is to provide ways to dynamically allocate portions of memory to programs at their request, and free it for reuse when no longer needed. This is critical to any advanced computer system where more than a single process might be underway at any time.

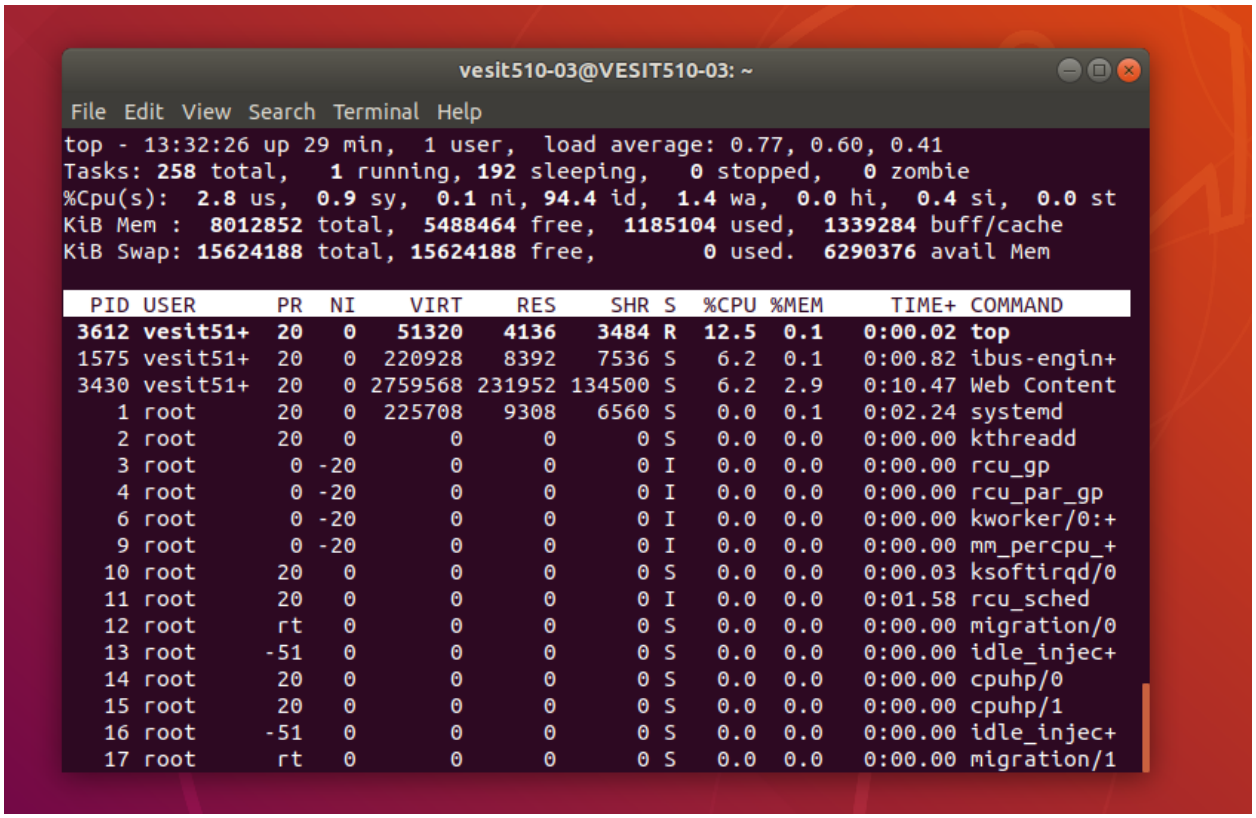
Theory :

The memory management commands are as follows :

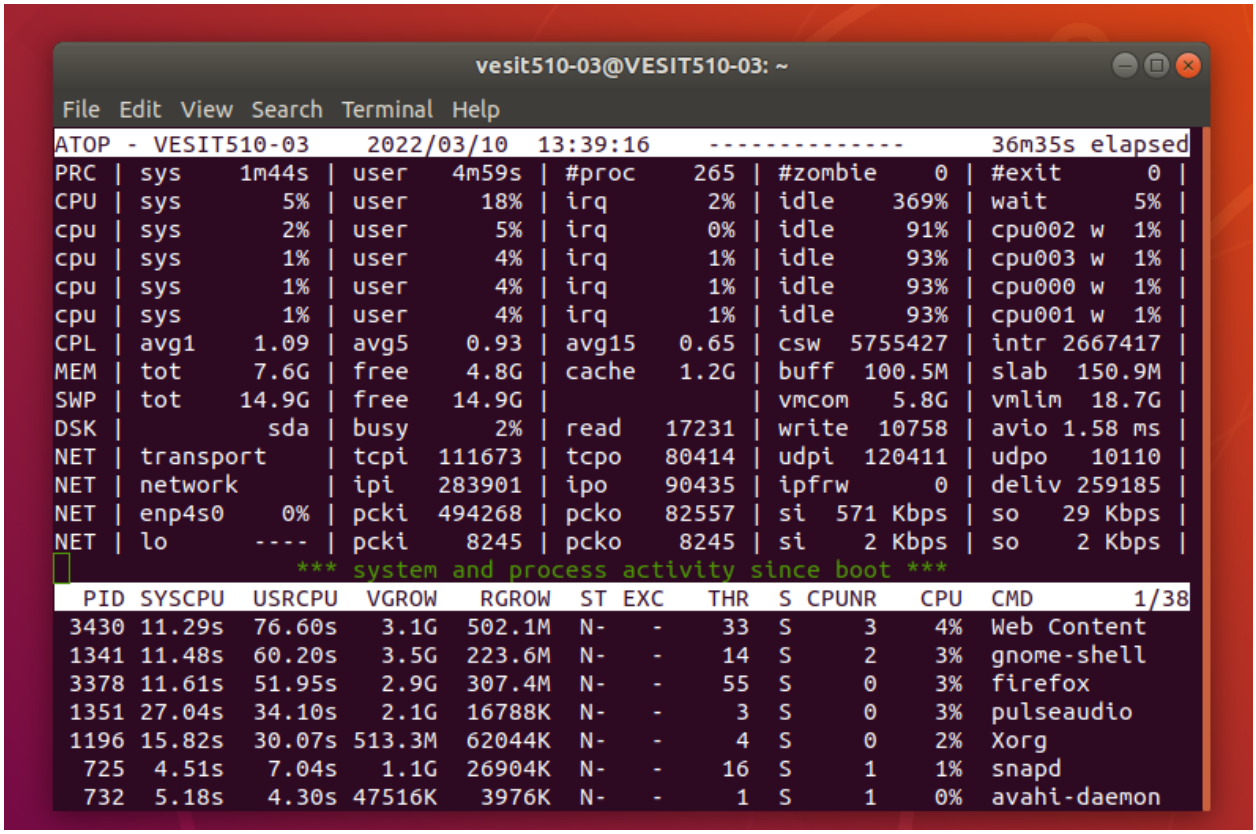
1. **df -** df abbreviation for disk free is a standard Unix command used to display the amount of available disk space for file systems on which the invoking user has appropriate read access.



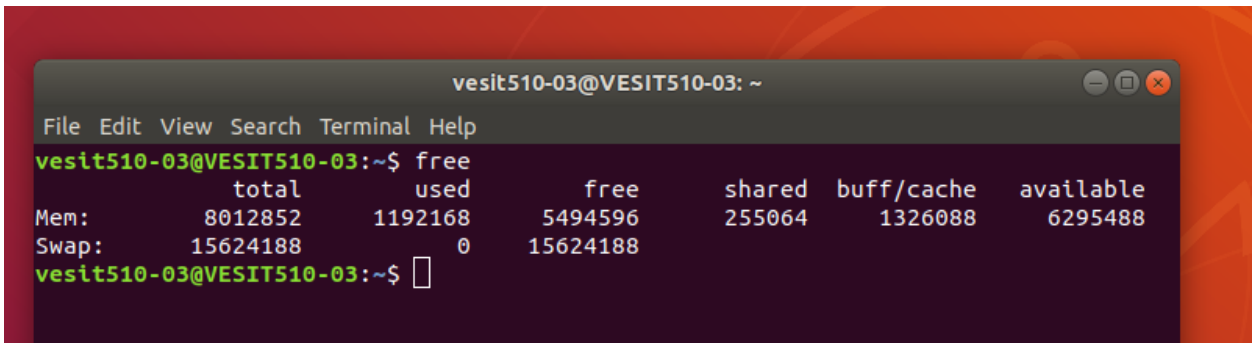
2. **top -** top command is used to show the processes. It provides a dynamic real-time view of the running system. Usually, this command shows the summary information of the system and the list of processes or threads which are currently managed by the Kernel.



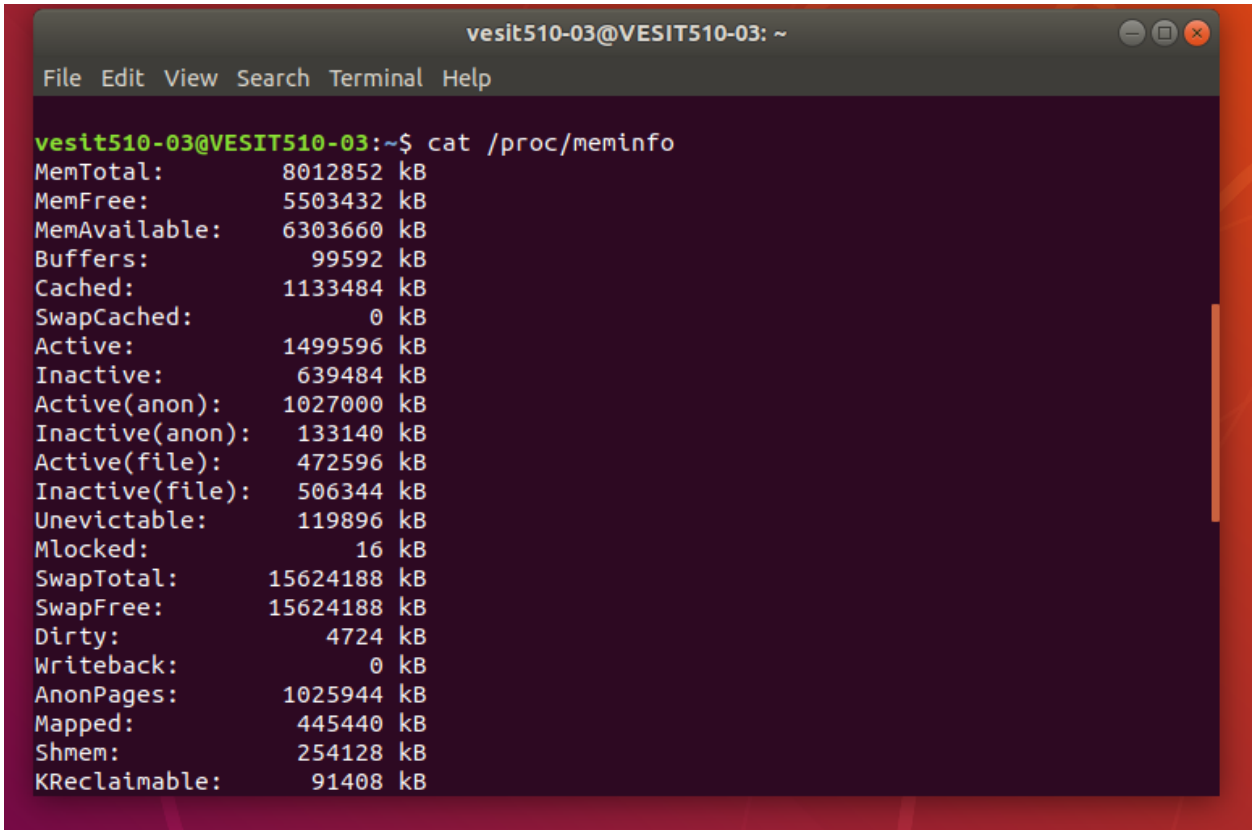
3. **atop -** The atop command is a tool for monitoring system resources in Linux. It displays tons of information related to the amount of load on the system's resources at the process level.



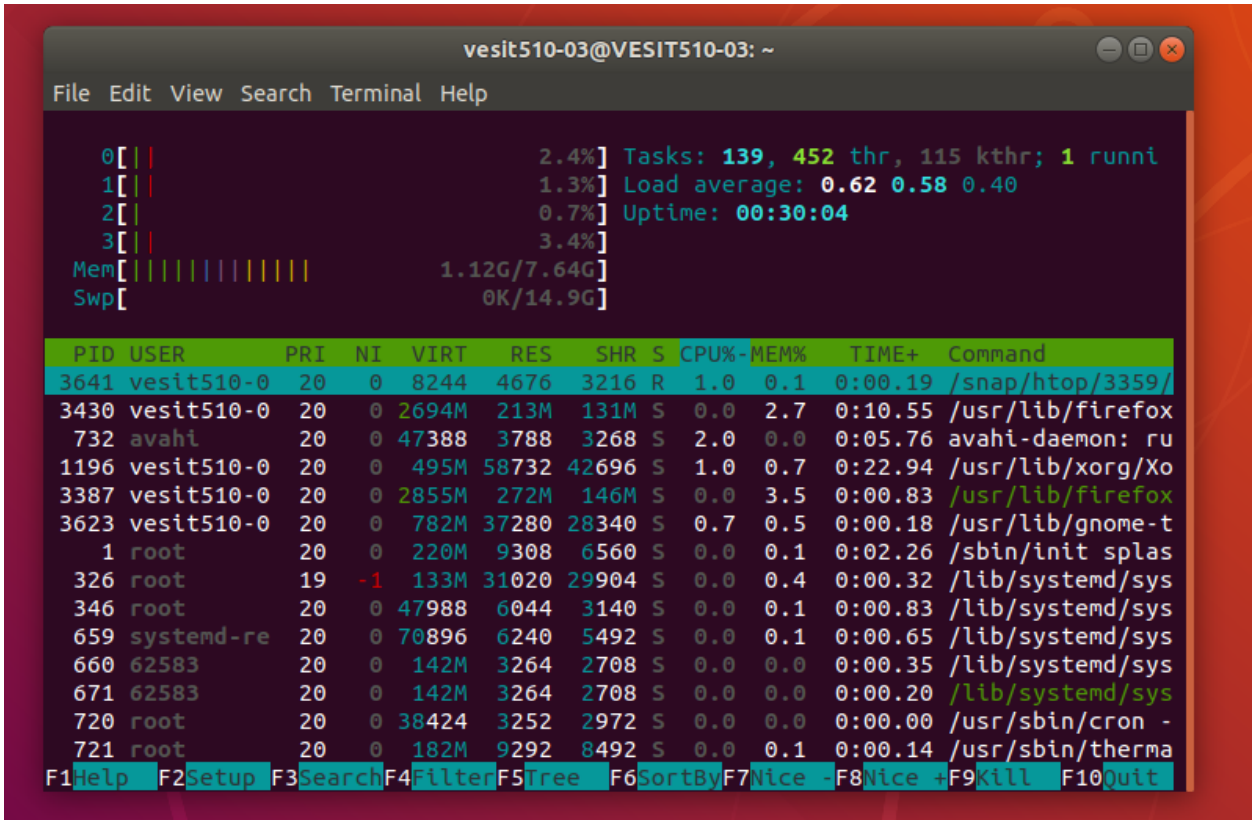
4. **free** - The free command gives information about used and unused memory usage and swap memory of a system. By default, it displays memory in kb (kilobytes). Memory mainly consists of RAM (random access memory) and swap memory.



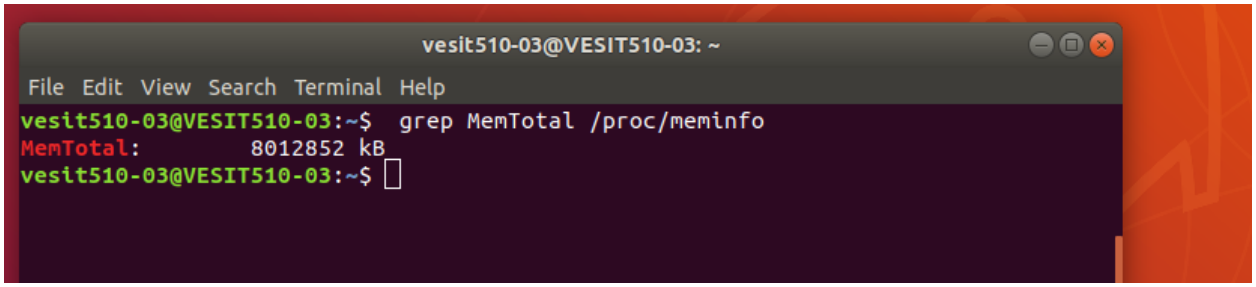
5. **proc mem -** On Unix you can use the command cat /proc/meminfo to determine how much memory the computer has. This command displays the information stored in the meminfo file located in the /proc directory. The total amount of memory will be displayed as MemTotal, shown in the example in bold.



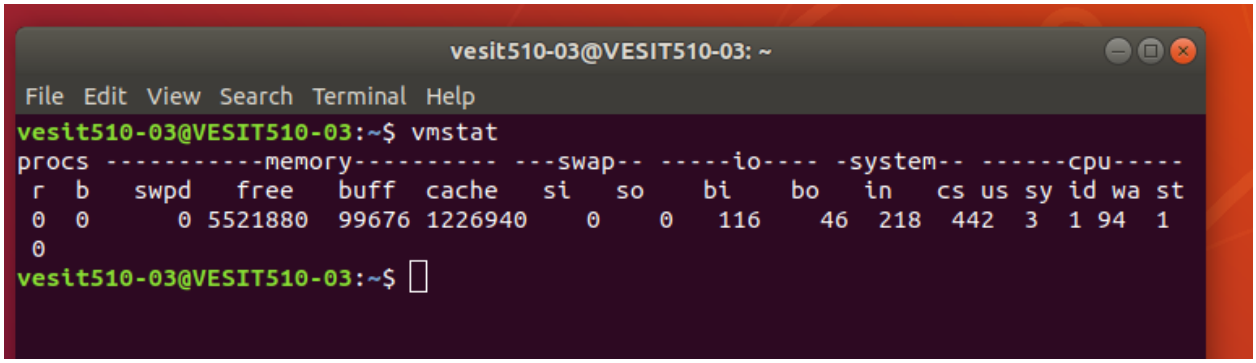
6. **htop -** htop is a command line utility that allows the user to interactively monitor the system's vital resources or server's processes in real time.



7. **total mem info -** This command is used to show the total memory.

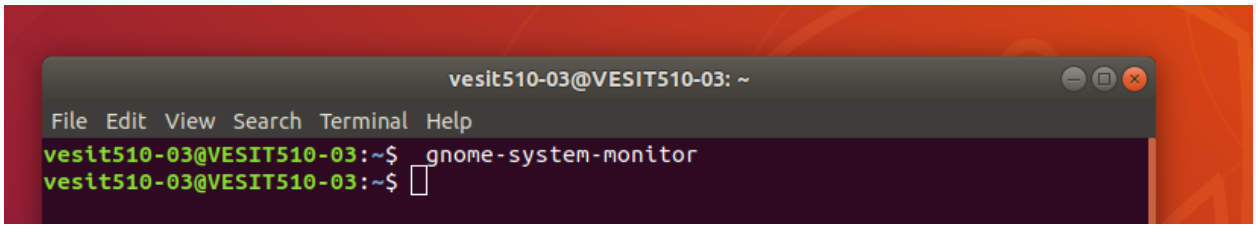


8. **vmstat -** vmstat command in Unix is a performance monitoring command of the system as it gives the information about processes, memory, paging, block IO, disk, and CPU scheduling.

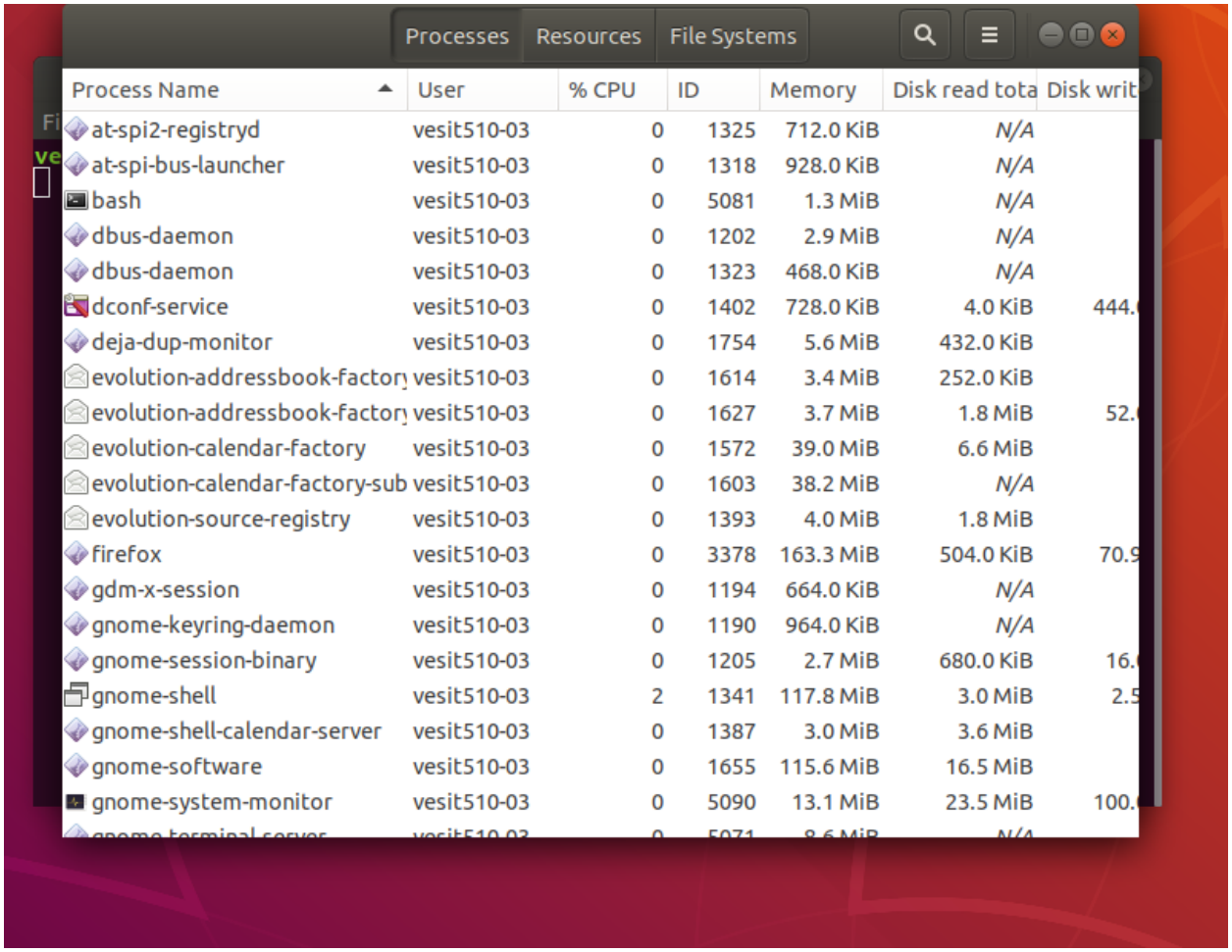


9. **system monitor -** It is used to show/monitor all the running processes.

Input command line:



Output screen:



Conclusion - We have understood and performed the memory management commands in UNIX.