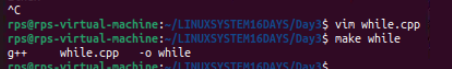
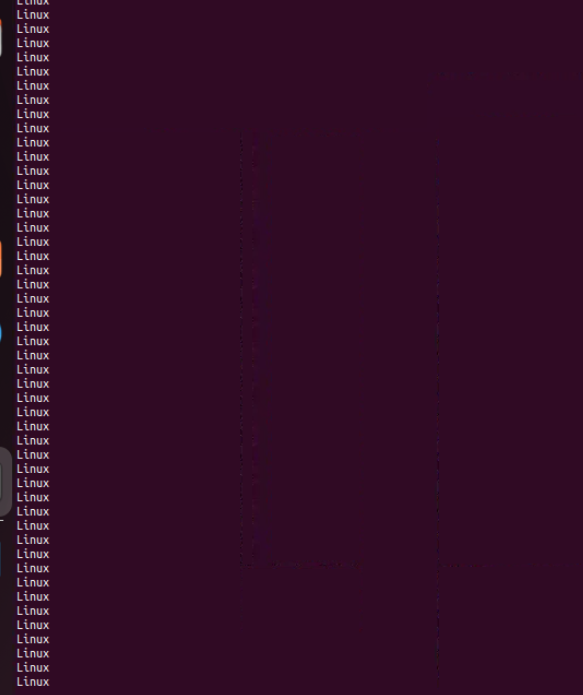
**Day3 LSP 18/7/24**

**1> vim— to create and edit while.cpp**

**2>make— to compile while.cpp into an executable while**

****

**3>./while— to show the output of the while program. It will run an infinite loop.**

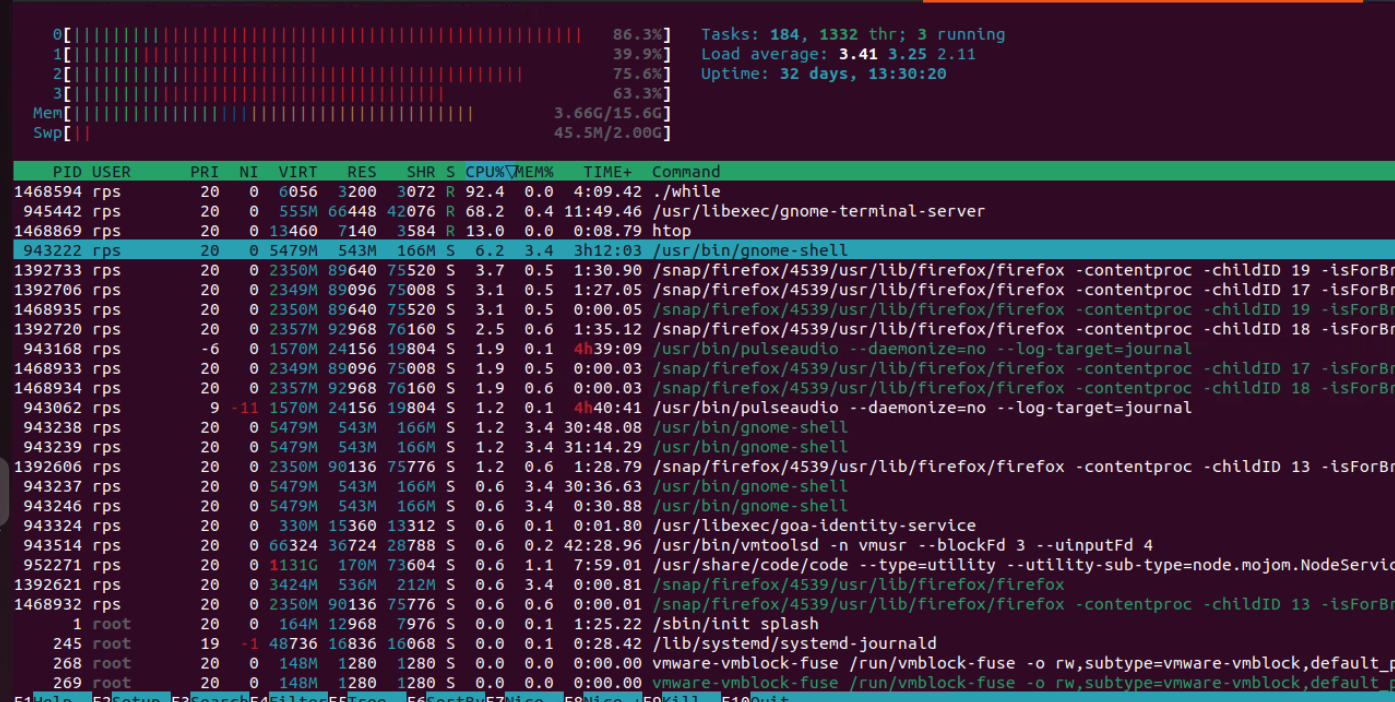
****

**htop cmd— it help us to check all the processes which are currently running. It is easy to use as it provide every information as graphical interface and better than ps command.**

**Steps to use htop**

**1> sudo apt install htop**

**2>htop– run cmd htop**

****

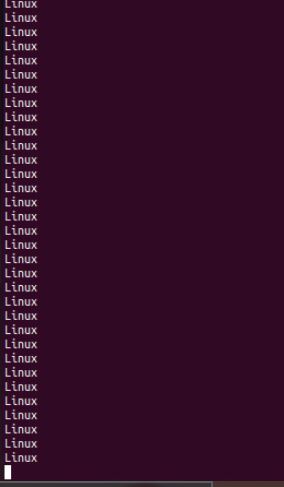
**It will show all your processes which are currently running with detailed info such as Pid, cpu memory usage — it will show how much memory is consumed by every program in the computer as live.**

**It helps us to kill any process which is currently running.**

**Kill cmd — it allow to stop the running process**

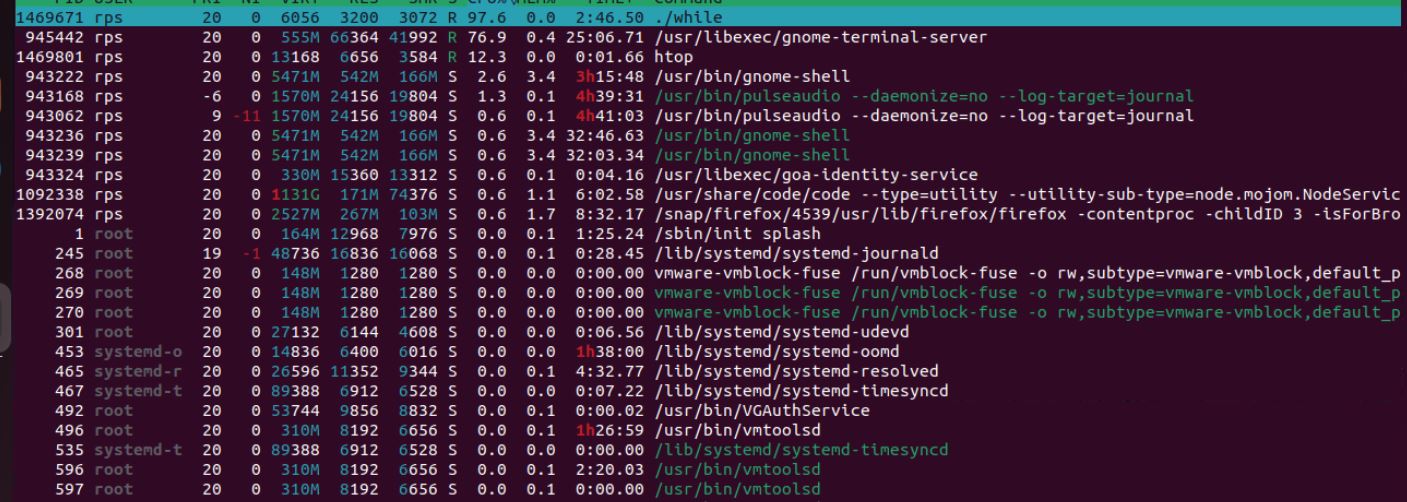
**If we want to kill any process**

**For example, while loop is running infinite time I want to kill that process . steps to perform that are as follows**

****

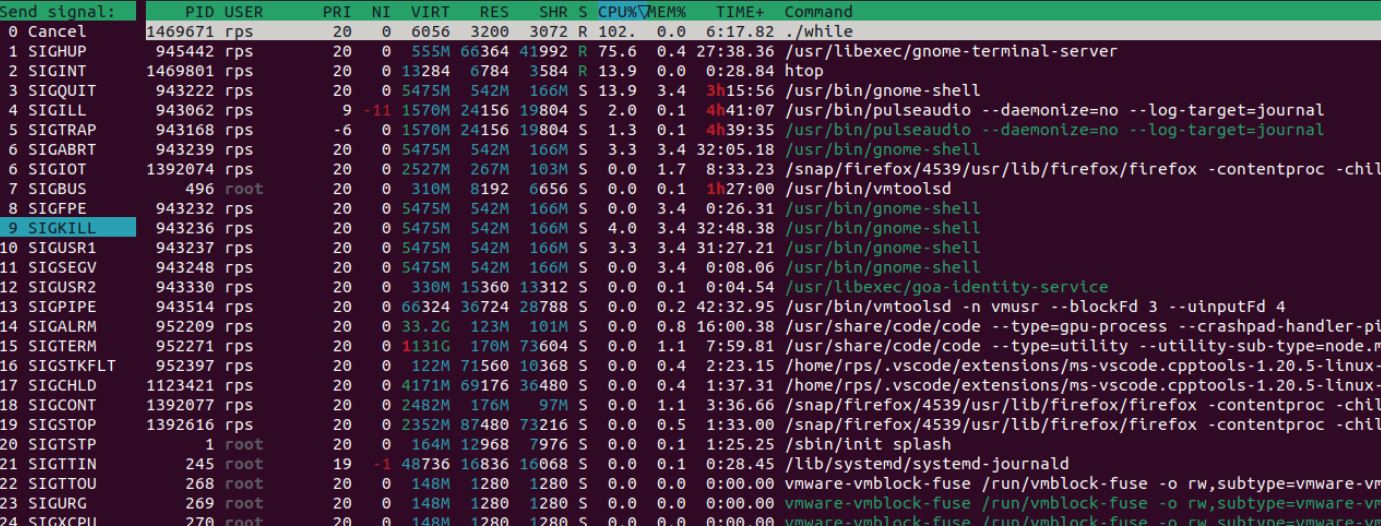
**To kill this process**

**1> run htop cmd - to check current process which are running.**

****

**Now select the process you want to kill using up or down arrow key and then press k**

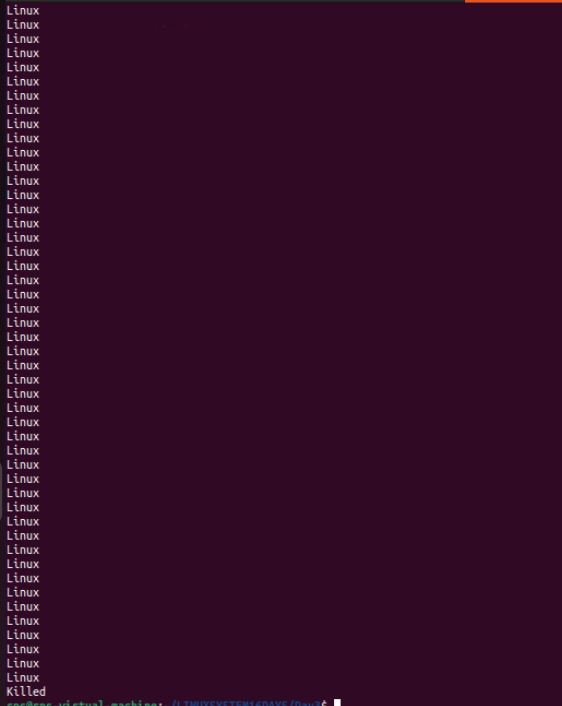
**And hit enter. After pressing k, htop will display a list of signals that you can send to the process.**

****

**Mostly used signal are SIGKILL (9) - it will forcefully kill the process.**

**SIGTERM(15)- it will gracefully kill the process.**

**After selecting hit enter Your process is killed.**

****

**Activity1— create sh file and print hello world**

**1> create sh file using vim then edit that file.**

**Vim hello.sh**

****

**2> To see output– use sh filename for eg sh hello.sh**

****

**3> to see content of file use cat hello.sh**

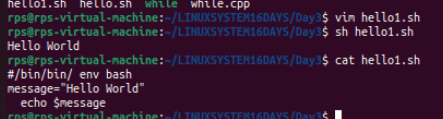
****

**Copy content of this file into another using cp hello.sh hello1.sh**

**Now do vim hello1.sh to edit the file**

**Then , see the output using sh hello1.sh**

**Now see the content using cat hello1.sh**

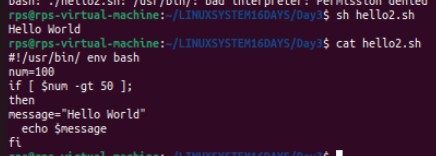
****

**Activity3 Now create another sh file and modify it**

**1> vim hello2.sh**

**2> sh hello2.sh**

**3>cat hello2.sh**

****

**File Search:**

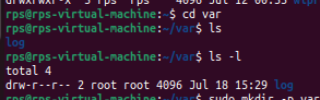
**Write a command to find all files with the extension .txt in the /home directory and its subdirectories.**

****

**File Permissions:**

**Write a command to change the permissions of all files in the /var/log directory to 644.**

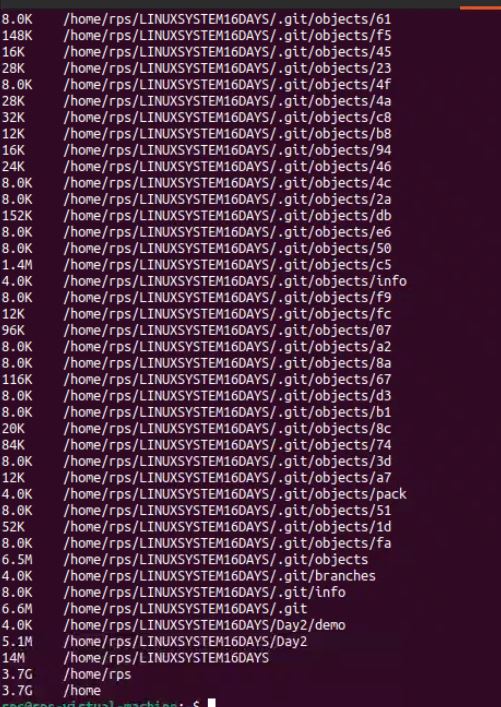
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****

**Disk Usage:**

**Write a command to display the disk usage of all directories in the /home directory in a human-readable format.**

****

****

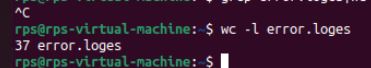
**Process Management:**

**Write a command to list all running processes that contain the name "apache" in their command line.**

****

**Text Processing:**

**Write a command to count the number of lines in a file named error.log.**

****

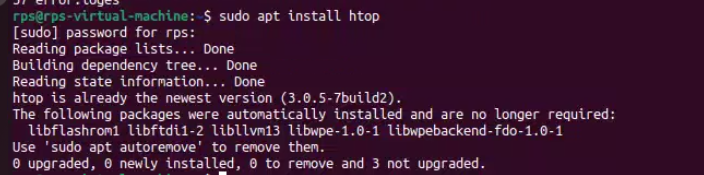
**Network Configuration:**

**Write a command to display the IP address of all network interfaces on the system.**

****

**Package Management:**

**Write a command to install a package named htop using the package manager.**

****

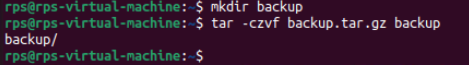
**User Management:**

**Write a command to add a new user named developer to the system.**

****

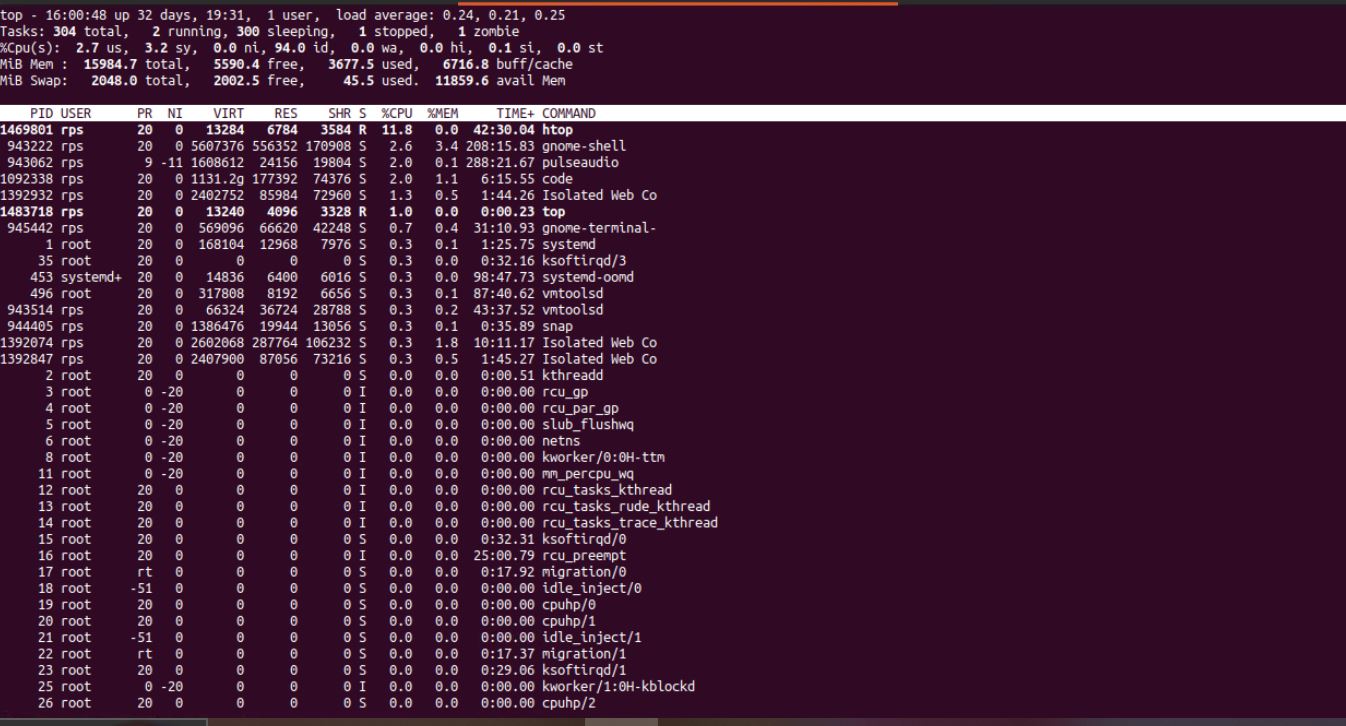
**File Compression:**

**Write a command to compress a directory named backup into a .tar.gz file.**

****

**System Monitoring:**

**Write a command to display real-time system resource usage, including CPU, memory, and disk I/O.**

****

**Shell Scripts**

**Backup Script:**

**Write a shell script to back up a directory named /data to /backup with the current date appended to the backup file name.**

**Log Rotation:**

**Write a shell script to rotate log files in the /var/log directory, keeping only the last 7 days of logs.**

**User Report:**

**Write a shell script to generate a report of all users currently logged into the system and save it to a file named user\_report.txt.**

**Disk Space Alert:**

**Write a shell script to check the disk usage of the /home directory and send an email alert if the usage exceeds 80%.**

**Service Monitor:**

**Write a shell script to check if the nginx service is running and restart it if it is not.**

**File Cleanup:**

**Write a shell script to delete all files older than 30 days in the /tmp directory.**

**Automated Updates:**

**Write a shell script to automatically update all installed packages on the system.**

**Database Backup:**

**Write a shell script to back up a MySQL database named sales to a file named sales\_backup.sql.**

**System Information:**

**Write a shell script to display system information, including hostname, OS version, and kernel version.**

**Cron Job:**

**Write a shell script to schedule a cron job that runs a specific command every day at midnight.**