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AIM

To create and schedule a shell script that:

- Logs system information daily
- Stores logs in a dedicated folder
- Rotates logs older than 7 days
- Runs automatically using **cron**

Requirements

- Any Linux distribution (e.g., Linux Mint / Ubuntu / Pop!_OS)
- Text editor (Nano, Vim, VS Code, etc.)
- Cron service enabled

Theory

System administrators often automate logs to track performance and system health. This experiment focuses on:

1. Collecting system data: processes, memory, disk usage, user info
2. Saving daily logs with date-based filenames
3. Deleting old logs automatically
4. Scheduling tasks using `cron`

Exercise 1: Creating the Daily Log Script

Task:

Create a Bash script that saves system info and rotates logs older than 7 days.

Script (daily_log.sh):

```
#!/bin/bash

LOG_DIR="$HOME/daily_logs"
mkdir -p "$LOG_DIR"

# Create a log file with today's date
LOG_FILE="$LOG_DIR/log_$(date +"%Y-%m-%d").txt"
```

```bash
# Record system information
{
    echo "====== Daily System Log ======"
    echo "Date: $(date)"
    echo "User: $USER"
    echo

    echo "====== Top 5 Running Processes (by CPU) ======"
    ps -eo pid,user,comm,%cpu,%mem --sort=-%cpu | head -n 6
    echo

    echo "====== Disk Usage ======"
    df -h
    echo

    echo "====== Memory Usage ======"
    free -h
} > "$LOG_FILE"

# Delete logs older than 7 days
find "$LOG_DIR" -type f -name "log_*.txt" -mtime +7 -exec rm {} \;

echo "Log saved to: $LOG_FILE"
```

Output Screenshot:

Exercise 2: Scheduling the Script Using Cron

Task:

Schedule the script to run daily.

Steps:

1. Open crontab:

```
crontab -e
```

2. Add this line:

```
0 20 * * * /home/lakshay42/daily_log.sh
```

This runs the script.

Cron Format Reminder:

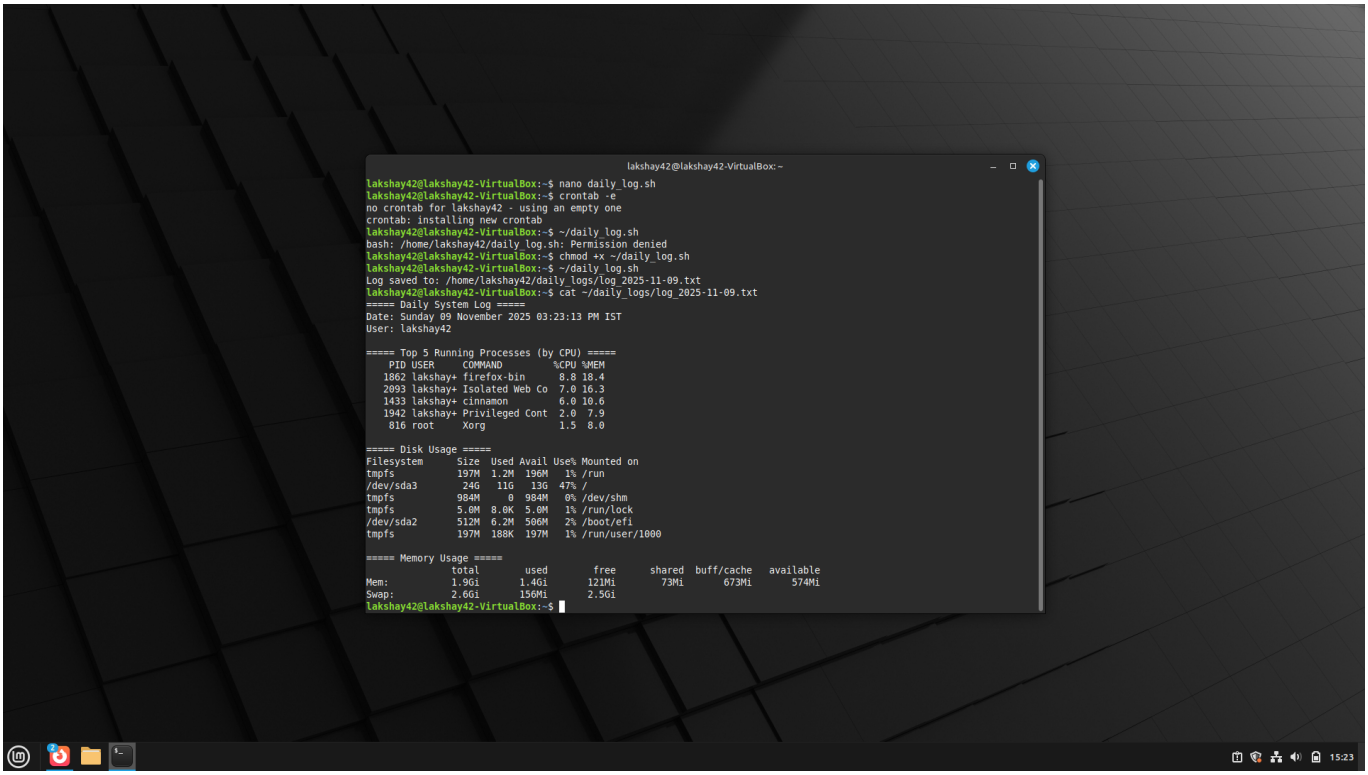
```
m h dom mon dow command
```

Cron Screenshot:

Final Output

The script successfully:

- Creates a new log file daily
- Shows running processes, memory usage, disk usage
- Deletes old logs (older than 7 days)
- Runs automatically via cron



Conclusion

This experiment demonstrates automation using shell scripting and cron. The daily log script efficiently captures system information and maintains a clean log directory by removing older log files. Cron ensures the script runs consistently without manual intervention.