

B.Tech. (Computer Science And Engineering)

Submitted to

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PHAGWARA, PUNJAB



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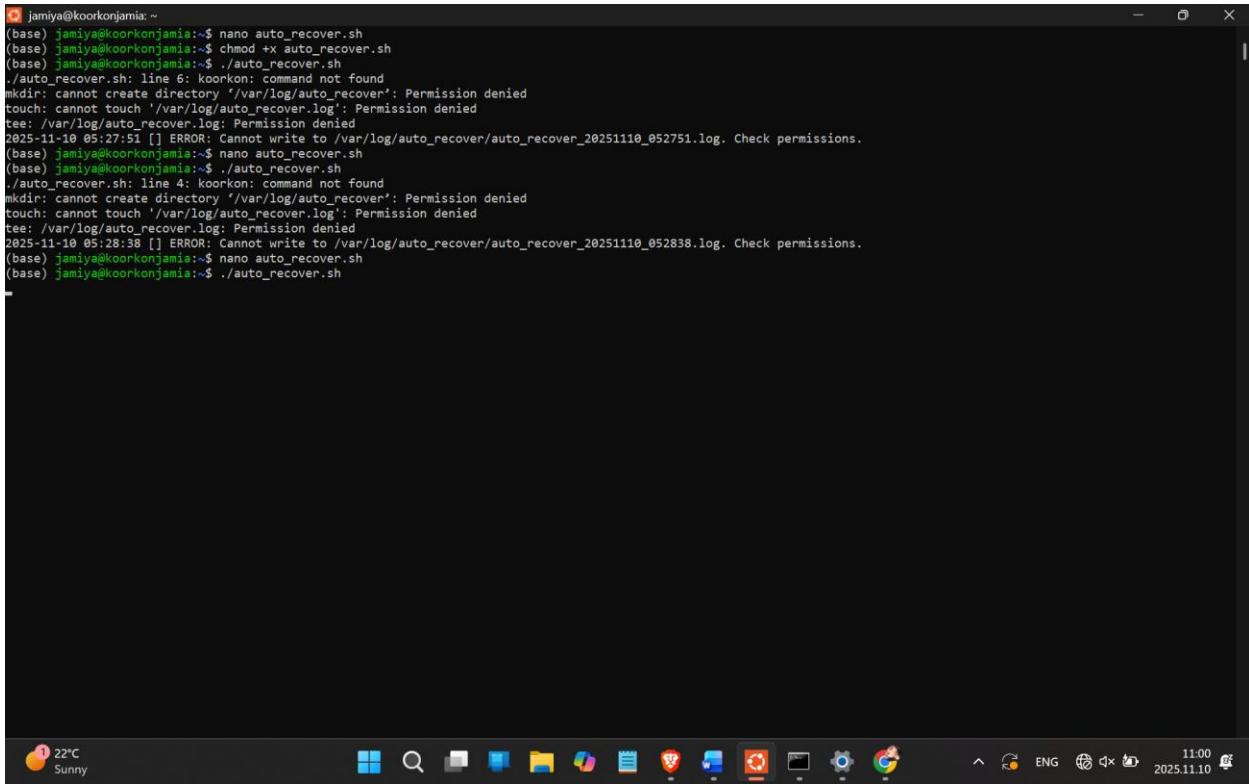
From June 4, 2025 to July 15, 2025

SUBMITTED BY

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Registration Number: 12325947

```
jamiya@koorkonjamia: ~
(base) jamiya@koorkonjamia:~$ nano auto_recover.sh
(base) jamiya@koorkonjamia:~$ chmod +x auto_recover.sh
(base) jamiya@koorkonjamia:~$ ./auto_recover.sh
./auto_recover.sh: line 6: koorkon: command not found
mkdir: cannot create directory '/var/log/auto_recover': Permission denied
touch: cannot touch '/var/log/auto_recover.log': Permission denied
tee: /var/log/auto_recover.log: Permission denied
2025-11-10 05:27:51 [] ERROR: Cannot write to /var/log/auto_recover/auto_recover_20251110_052751.log. Check permissions.
(base) jamiya@koorkonjamia:~$ nano auto_recover.sh
(base) jamiya@koorkonjamia:~$ ./auto_recover.sh
./auto_recover.sh: line 4: koorkon: command not found
mkdir: cannot create directory '/var/log/auto_recover': Permission denied
touch: cannot touch '/var/log/auto_recover.log': Permission denied
tee: /var/log/auto_recover.log: Permission denied
2025-11-10 05:28:38 [] ERROR: Cannot write to /var/log/auto_recover/auto_recover_20251110_052838.log. Check permissions.
(base) jamiya@koorkonjamia:~$ nano auto_recover.sh
(base) jamiya@koorkonjamia:~$ ./auto_recover.sh
```



```
jamiya@koorkonjamia: ~
root@koorkonjamia:~# sudo tee /usr/local/bin/auto_recover.sh > /dev/null <<'EOF'
#!/usr/bin/env bash
#
## auto_recover.sh
# Monitors CPU/MEM, kills offending processes, restarts critical services, logs actions and sends alerts.
#
# Install path suggestion: /usr/local/bin/auto_recover.sh
# Ensure executable: chmod 750 /usr/local/bin/auto_recover.sh
#
set -o pipefail
IFS=$'\n\t'

### CONFIGURATION (edit as needed) #####
LOG_DIR="/var/log/auto_recover"
LOG_FILE="${LOG_DIR}/auto_recover.log"
LOCKFILE="/var/run/auto_recover.lock"
CPU_THRESHOLD=80          # percent CPU per-process threshold
MEM_THRESHOLD=80          # percent MEM per-process threshold
TOP_COUNT=5               # top N processes to log
ADMIN_EMAIL="admins@example.com" # change to real admin email
WEBHOOK_URL=""            # if using webhook (Slack/Discord), set URL e.g. "https://hooks.slack.com/services/..."
# Services to attempt restart when we kill user-space processes (space-separated)
SERVICES_TO_RESTART=(nginx apache2)

# Exclude list: user names or process names that must not be killed
EXCLUDE_USERS=(`root` `syslog` `mysql` `postgres`)
EXCLUDE_NAMES=(`sshd` `systemd` `kthreadd` `kworker` `rcu_sched` `init` `Docker`)
# Minimum safe PID (avoid killing very low PIDs)
MIN_SAFE_PID=100

# Mail program preference: "mail" (mailutils/mailx) or "curl" to webhook
MAIL_CMD="mail" # "mail" or "webhook"
#####
timestamp() { date '+%Y-%m-%d %H:%M:%S %z'; }
host() { hostname -f 2>/dev/null || hostname; }

# Ensure running as root (needed to inspect and kill other users' processes and restart services)
if [[ $EUID -ne 0 ]]; then
    echo "$timestamp [ERROR] Script must be run as root (or with sudo)" >&2
    main "@NFO" auto_recover run completed" $(host) at $(timestamp)" | sed -n '1,
>
> EOF
root@koorkonjamia:~# ls -l /usr/local/bin/auto_recover.sh

```



```
jamiya@koorkonjamia: ~
root@koorkonjamia:~# ls -l /usr/local/bin/auto_recover.sh
-rw-r--r-- 1 root root 9069 Nov 10 05:51 /usr/local/bin/auto_recover.sh
root@koorkonjamia:~# su ubuntu
su: user ubuntu does not exist or the user entry does not contain all the required fields
root@koorkonjamia:~# sudo chmod 750 /usr/local/bin/auto_recover.sh
root@koorkonjamia:~# sudo chown root:root /usr/local/bin/auto_recover.sh
root@koorkonjamia:~# sudo apt update
sudo apt install -y mailutils curl
Hit:1 https://download.docker.com/linux/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:4 http://mirror.math.princeton.edu/pub/ubuntu noble InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:6 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
117 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
mailutils is already the newest version (1:3.17-1.1build3).
curl is already the newest version (8.5.0-2ubuntu10.6).
0 upgraded, 0 newly installed, 0 to remove and 117 not upgraded.
root@koorkonjamia:~# sudo yum install -y mailx curl
sudo: yum: command not found
root@koorkonjamia:~# sudo crontab -e
crontab: installing new crontab
root@koorkonjamia:~# sudo crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#

```



```
>Select jamiya@koorkonjamia: ~
# m h dom mon dow   command
#* * * * * /home/jamiya/task1_live.sh >> /var/log/ufw_cron.log 2>&1
*/5 * * * * /usr/local/bin/auto_recover.sh >> /var/log/auto_recover/auto_recover.log 2>&1

root@koorkonjamia:~# sudo tail -n 30 /var/log/auto_recover/auto_recover.log
tail: cannot open '/var/log/auto_recover/auto_recover.log' for reading: No such file or directory
root@koorkonjamia:~# sudo tee /usr/local/bin/auto_recover.sh > /dev/null <<'EOF'
#!/usr/bin/env bash
clear
sudo tee /usr/local/bin/auto_recover.sh > /dev/null <<'EOF'
#!/usr/bin/env bash
clear
sudo tee /usr/local/bin/auto_recover.sh > /dev/null <<'EOF'
#!/usr/bin/env bash
ls -1 /usr/local/bin/auto_recover.sh
sudo tee /usr/local/bin/auto_recover.sh > /dev/null <<'EOF'
root@koorkonjamia:~# cd ~
root@koorkonjamia:~# exit
logout
(base) jamiya@koorkonjamia:~$ sudo tail -n 30 /var/log/auto_recover/auto_recover.log
2025-11-10 05:55:03 +0000 [INFO] auto_recover run started
2025-11-10 05:55:03 +0000 [INFO] auto_recover run started
2025-11-10 05:55:03 +0000 [INFO] Snapshot written to /var/log/auto_recover/snapshot_20251110_055503.log
2025-11-10 05:55:03 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 05:55:03 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 05:55:03 +0000 [INFO] auto_recover run completed
2025-11-10 05:55:03 +0000 [INFO] auto_recover run completed
(base) jamiya@koorkonjamia:~$ sudo grep CRON /var/log/syslog | tail -n 10
2025-11-10T04:43:28.361632+00:00 koorkonjamia cron[316]: (CRON) INFO (pidfile fd = 3)
2025-11-10T04:43:28.361637+00:00 koorkonjamia cron[316]: (CRON) INFO (Running @reboot jobs)
2025-11-10T05:17:01.143910+00:00 koorkonjamia CRON[2040]: (root) CMD (cd / & run-parts --report /etc/cron.hourly)
2025-11-10T05:32:48.396793+00:00 koorkonjamia cron[181]: (CRON) INFO (pidfile fd = 3)
2025-11-10T05:32:48.396797+00:00 koorkonjamia cron[181]: (CRON) INFO (Running @reboot jobs)
2025-11-10T05:55:02.997107+00:00 koorkonjamia CRON[2340]: (root) CMD (/usr/local/bin/auto_recover.sh >> /var/log/auto_recover/auto_recover.log 2>&1)
(base) jamiya@koorkonjamia:~$ sudo chmod +x /usr/local/bin/auto_recover.sh
(base) jamiya@koorkonjamia:~$ ls -l /usr/local/bin/auto_recover.sh
-rwxr-x--x 1 root root 9069 Nov 10 05:51 /usr/local/bin/auto_recover.sh
(base) jamiya@koorkonjamia:~$ sudo mkdir -p /var/log/auto_recover
(base) jamiya@koorkonjamia:~$ sudo /usr/local/bin/auto_recover.sh
2025-11-10 05:57:28 +0000 [INFO] auto_recover run started
2025-11-10 05:57:28 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 05:57:28 +0000 [INFO] auto_recover run completed
(base) jamiya@koorkonjamia:~$ ls /var/log/auto_recover/
auto_recover.log snapshot_20251110_055503.log snapshot_20251110_055728.log
(base) jamiya@koorkonjamia:~$ cat /var/log/auto_recover/auto_recover_*.log
[1] 2776
(base) jamiya@koorkonjamia:~$ sudo /usr/local/bin/auto_recover.sh
2025-11-10 06:05:39 +0000 [INFO] auto_recover run started
2025-11-10 06:05:39 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 06:05:39 +0000 [INFO] auto_recover run completed
(base) jamiya@koorkonjamia:~$ ps aux | grep yes
jamiya  2776  104  0.0  3128 1936 pts/0    R    06:05  0:24 yes
jamiya  2825  0.0  0.0  4092  2016 pts/0    S+   06:05  0:00 grep --color=auto yes
(base) jamiya@koorkonjamia:~$ cat /var/log/auto_recover/auto_recover.log
cat: /var/log/auto_recover/auto_recover.log: Permission denied
(base) jamiya@koorkonjamia:~$ cat /var/log/auto_recover/auto_recover_*.log
cat: /var/log/auto_recover/auto_recover_*.log: No such file or directory
(base) jamiya@koorkonjamia:~$ sudo systemctl status nginx | head -n 5
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Mon 2025-11-10 05:32:48 UTC; 33min ago
       Docs: man:nginx(8)
      Process: 191 ExecStartPre=/usr/sbin/nginx -t -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   (base) jamiya@koorkonjamia:~$ cat /var/log/auto_recover.log | tail -n 20
cat: /var/log/auto_recover.log: No such file or directory
(base) jamiya@koorkonjamia:~$ sudo /usr/local/bin/auto_recover.sh
2025-11-10 06:12:36 +0000 [INFO] auto_recover run started
2025-11-10 06:12:37 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 06:12:37 +0000 [INFO] auto_recover run completed
(base) jamiya@koorkonjamia:~$ ls -l /var/log/auto_recover/
total 32
-rw-r--r-- 1 root root 3071 Nov 10 06:12 auto_recover.log
-rw-r--r-- 1 root root 1597 Nov 10 05:55 snapshot_20251110_055503.log
-rw-r--r-- 1 root root 1594 Nov 10 05:57 snapshot_20251110_055728.log
-rw-r--r-- 1 root root 1602 Nov 10 06:00 snapshot_20251110_060001.log
-rw-r--r-- 1 root root 1602 Nov 10 06:05 snapshot_20251110_060504.log
-rw-r--r-- 1 root root 1604 Nov 10 06:05 snapshot_20251110_060539.log
-rw-r--r-- 1 root root 1600 Nov 10 06:10 snapshot_20251110_061005.log
-rw-r--r-- 1 root root 1600 Nov 10 06:12 snapshot_20251110_061236.log
(base) jamiya@koorkonjamia:~$ sudo /usr/local/bin/auto_recover.sh
```

```
>Select jamiya@koorkonjamia: ~
2025-11-10 05:57:28 +0000 [INFO] auto_recover run started
2025-11-10 05:57:28 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 05:57:28 +0000 [INFO] auto_recover run completed
(base) jamiya@koorkonjamia:~$ ls -l /var/log/auto_recover/
auto_recover.log snapshot_20251110_055503.log snapshot_20251110_055728.log
(base) jamiya@koorkonjamia:~$ cat /var/log/auto_recover/auto_recover_*.log
cat: /var/log/auto_recover/auto_recover_*.log: No such file or directory
(base) jamiya@koorkonjamia:~$ sudo systemctl status nginx | head -n 5
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Mon 2025-11-10 05:32:48 UTC; 33min ago
       Docs: man:nginx(8)
      Process: 191 ExecStartPre=/usr/sbin/nginx -t -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   (base) jamiya@koorkonjamia:~$ cat /var/log/auto_recover.log | tail -n 20
cat: /var/log/auto_recover.log: No such file or directory
(base) jamiya@koorkonjamia:~$ sudo /usr/local/bin/auto_recover.sh
2025-11-10 06:12:36 +0000 [INFO] auto_recover run started
2025-11-10 06:12:37 +0000 [INFO] No offending processes found (threshold CPU>=80% or MEM>=80%)
2025-11-10 06:12:37 +0000 [INFO] auto_recover run completed
(base) jamiya@koorkonjamia:~$ ls -l /var/log/auto_recover/
total 32
-rw-r--r-- 1 root root 3071 Nov 10 06:12 auto_recover.log
-rw-r--r-- 1 root root 1597 Nov 10 05:55 snapshot_20251110_055503.log
-rw-r--r-- 1 root root 1594 Nov 10 05:57 snapshot_20251110_055728.log
-rw-r--r-- 1 root root 1602 Nov 10 06:00 snapshot_20251110_060001.log
-rw-r--r-- 1 root root 1602 Nov 10 06:05 snapshot_20251110_060504.log
-rw-r--r-- 1 root root 1604 Nov 10 06:05 snapshot_20251110_060539.log
-rw-r--r-- 1 root root 1600 Nov 10 06:10 snapshot_20251110_061005.log
-rw-r--r-- 1 root root 1600 Nov 10 06:12 snapshot_20251110_061236.log
(base) jamiya@koorkonjamia:~$ sudo /usr/local/bin/auto_recover.sh
```



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baatarjamia@gmail.com

to me ▾

11:28

Test alert from auto_recover.sh

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