

**Roll No : 205224014**

**M.Tech Data Analytics**

**DevOps HOME-WORK 2**

## **Effort Estimation and Observability**

Q1 : Write a HEARTBEAT job using BASH using the system log of your choice on your desired operating system.

### **Step 1: Create the Heartbeat Script**

1. Open a terminal and navigate to the desired directory:
2. Create a new Bash script:



```
het@het:~$ cd Desktop/  
het@het:~/Desktop$ mkdir hw2  
het@het:~/Desktop$ cd hw2  
het@het:~/Desktop/hw2$ touch heartbeat.sh  
het@het:~/Desktop/hw2$
```

3. Add the following content to the script:



```
1 #!/bin/bash  
2 logger -t HEARTBEAT "System is alive - $(date)"  
3  
4 # Send to syslog  
5 logger -t HEARTBEAT "$LOG_MESSAGE"  
6
```

4. Save the file and exit (CTRL+X, then Y, then Enter).
5. Make the script executable:

**chmod +x heartbeat.sh**

## Step 2: Schedule the Script with Cron

1. Open the crontab editor:

```
het@het:~/Desktop/hw2$ crontab -e
```

2. Add the following line at the end of the file:

```
* * * * * /home/het/Desktop/hw2/heartbeat.sh
```

This schedules the script to run every minute.

```
GNU nano 4.8 /tmp/crontab.upjPGu/crontab
# 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).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow   command
* * * * * /home/het/Desktop/hw2/heartbeat.sh
```

3. Save and exit the crontab editor.

## Step 3: Verify Execution

1. Check if the script runs by viewing system logs:

```
journalctl -t HEARTBEAT -f
```

2. Output:

```
het@het:~/Desktop/hw2$ journalctl -t HEARTBEAT -f
-- Logs begin at Sat 2022-01-29 13:21:21 IST. --
Mar 24 15:41:01 het HEARTBEAT[3992]: System is alive - Monday 24 March 2025 03:41:01 PM IST
Mar 24 15:42:01 het HEARTBEAT[4061]: System is alive - Monday 24 March 2025 03:42:01 PM IST
Mar 24 15:43:01 het HEARTBEAT[4077]: System is alive - Monday 24 March 2025 03:43:01 PM IST
Mar 24 15:44:01 het HEARTBEAT[4084]: System is alive - Monday 24 March 2025 03:44:01 PM IST
Mar 24 15:45:01 het HEARTBEAT[4096]: System is alive - Monday 24 March 2025 03:45:01 PM IST
```