Assignment – Memory Management

1) Setup additional swap space in the system to solve low memory issue. The swap which you added should be available post reboot.

Create a space with some space you wish to use as swap memory when RAM is full:

 sudo fallocate -l 2G /MySwapSpace

The swap space contains sensitive files used for performance of the system

Make it read and write only by owner:

 sudo chmod 600 /MySwapSpace

Now prepare the space for the use :

 sudo mkswap /MySwapSpace

Now activate the space:

 sudo swapon /MySwapSpace

Make the swap space available post reboot:

 sudo nano /etc/fstab

Add these :

/swapfile none swap sw 0 0

In this : /MySwapFile : The location of the file

None: mount point : since swap space doesnt need to be mounted to any file system so it is set to none

 Swap: refers to the filesystem type , in this case it is swap,

sw means mount options, means the space should be enabled

0 0 : 1st 0 means dump options which is 0(no) that the swap doesnt need any backup

2nd 0 means pass options which is 0(no) means swap doesnt need to be checked while boot by fsck option

 sudo swapon --show

2) Find out the number of process is in run queue and blocking queue.
Use vmstat command

The first r refers to run queue (no of processes ready to be executed by cpu, but waiting for cpu time)

And b refers to blocked queue (no of processes waiting for input/output resources)

```
ubuntu@ip-172-31-7-146:~$ sudo fallocate -l 2G /MySwapSpace
ubuntu@ip-172-31-7-146:~$ sudo chmod 600 /MySwapSpace
ubuntu@ip-172-31-7-146:~$ sudo mkswap /MySwapSpace
Setting up swapspace version 1, size = 2 GiB (2147479552 bytes)
no label, UUID=844af101-1ff3-4af5-aa4a-7862ac4bf013
ubuntu@ip-172-31-7-146:~$ sudo swapon /MySwapSpace
ubuntu@ip-172-31-7-146:~$ sudo nano /etc/fstab
ubuntu@ip-172-31-7-146:~$ sudo swapon --show
NAME          TYPE SIZE USED PRIO
/MySwapSpace file  2G   0B   -2
ubuntu@ip-172-31-7-146:~$ free -h
               total        used        free      shared  buff/cache   available
Mem:           957Mi       360Mi       161Mi       908Ki       624Mi       597Mi
Swap:          2.0Gi          0B       2.0Gi
ubuntu@ip-172-31-7-146:~$ vmstat
procs -----------memory---------- ---swap-- -----io---- -system-- -------cpu-------
 r  b   swpd   free   buff  cache   si   so    bi    bo   in   cs us sy id wa st gu
 1  0      0 165204  58052 581988    0    0   142    66   96    0  1  0 99  0  0  0
ubuntu@ip-172-31-7-146:~$
```