Q3.

Node Info:

scontrol show nodes

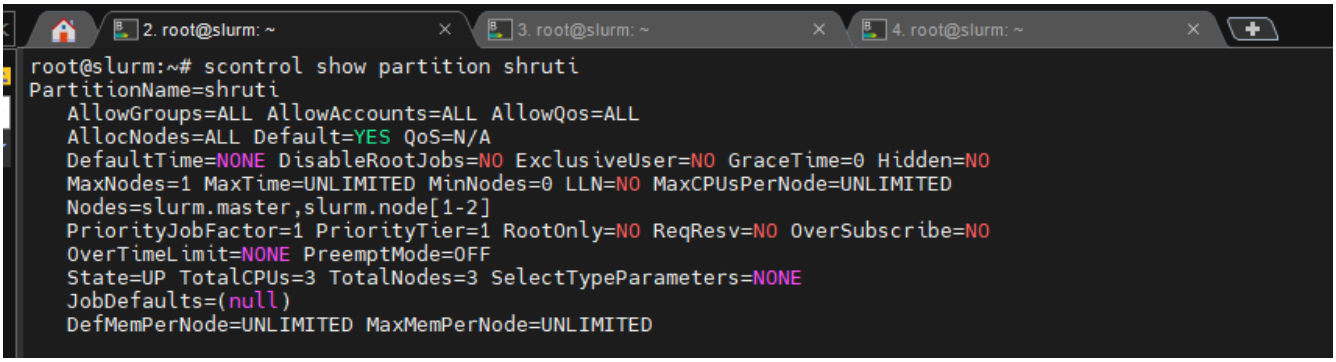
```
root@slurm:~# scontrol show nodes
NodeName=slurm.master Arch=x86_64 CoresPerSocket=1
   CPUAlloc=0 CPUTot=1 CPULoad=0.47
   AvailableFeatures=(null)
   ActiveFeatures=(null)
   Gres=(null)
   NodeAddr=slurm.master NodeHostName=slurm.master Version=21.08.8
   OS=Linux 6.5.0-14-generic #14~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Mon Nov 20 18:15:30 UTC 2
   RealMemory=1 AllocMem=0 FreeMem=3962 Sockets=1 Boards=1
   State=IDLE ThreadsPerCore=1 TmpDisk=0 Weight=1 Owner=N/A MCS_label=N/A
   Partitions=mansi,dhananjay,shruti
   BootTime=2024-01-22T16:33:31 SlurmdStartTime=2024-01-22T16:33:43
   LastBusyTime=2024-01-22T16:33:43
   CfgTRES=cpu=1,mem=1M,billing=1
   AllocTRES=
   CapWatts=n/a
   CurrentWatts=0 AveWatts=0
   ExtSensorsJoules=n/s ExtSensorsWatts=0 ExtSensorsTemp=n/s

NodeName=slurm.node1 CoresPerSocket=1
   CPUAlloc=0 CPUTot=1 CPULoad=0.98
   AvailableFeatures=(null)
   ActiveFeatures=(null)
   Gres=(null)
   NodeAddr=slurm.node1 NodeHostName=slurm.node1
   RealMemory=1 AllocMem=0 FreeMem=2023 Sockets=1 Boards=1
   State=IDLE ThreadsPerCore=1 TmpDisk=0 Weight=1 Owner=N/A MCS_label=N/A
   Partitions=mansi,dhananjay,shruti
   BootTime=None SlurmdStartTime=None
   LastBusyTime=2024-01-22T16:37:06
   CfgTRES=cpu=1,mem=1M,billing=1
   AllocTRES=
   CapWatts=n/a
   CurrentWatts=0 AveWatts=0
   ExtSensorsJoules=n/s ExtSensorsWatts=0 ExtSensorsTemp=n/s

NodeName=slurm.node2 CoresPerSocket=1
   CPUAlloc=0 CPUTot=1 CPULoad=0.87
   AvailableFeatures=(null)
   ActiveFeatures=(null)
   Gres=(null)
   NodeAddr=slurm.node2 NodeHostName=slurm.node2
   RealMemory=1 AllocMem=0 FreeMem=1999 Sockets=1 Boards=1
   State=IDLE ThreadsPerCore=1 TmpDisk=0 Weight=1 Owner=N/A MCS_label=N/A
   Partitions=mansi,dhananjay,shruti
   BootTime=None SlurmdStartTime=None
   LastBusyTime=2024-01-22T16:37:06
   CfgTRES=cpu=1,mem=1M,billing=1
   AllocTRES=
   CapWatts=n/a
   CurrentWatts=0 AveWatts=0
   ExtSensorsJoules=n/s ExtSensorsWatts=0 ExtSensorsTemp=n/s
```

Partition Info:

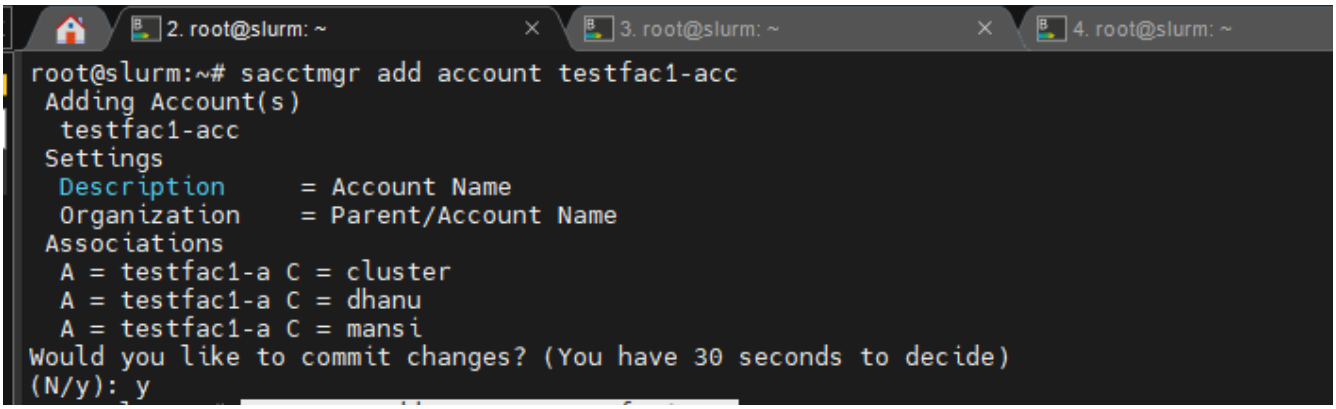
scontrol show partition < partition name >



Q4.

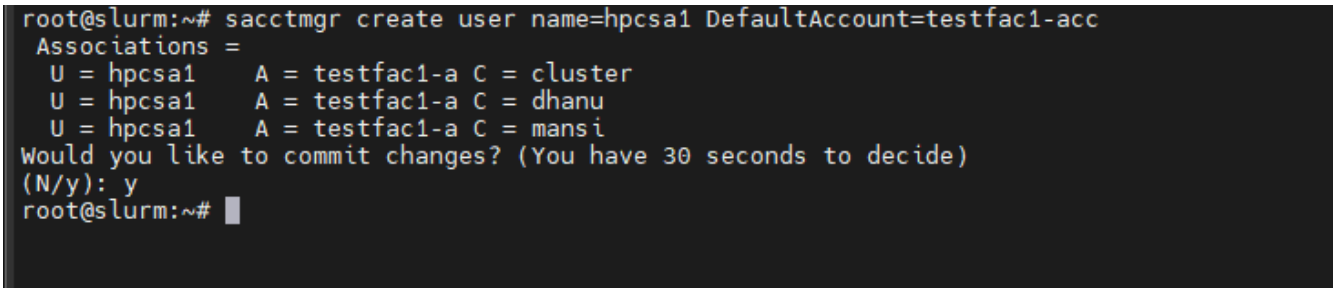
Create Account:

sacctmgr add account testfac1-acc

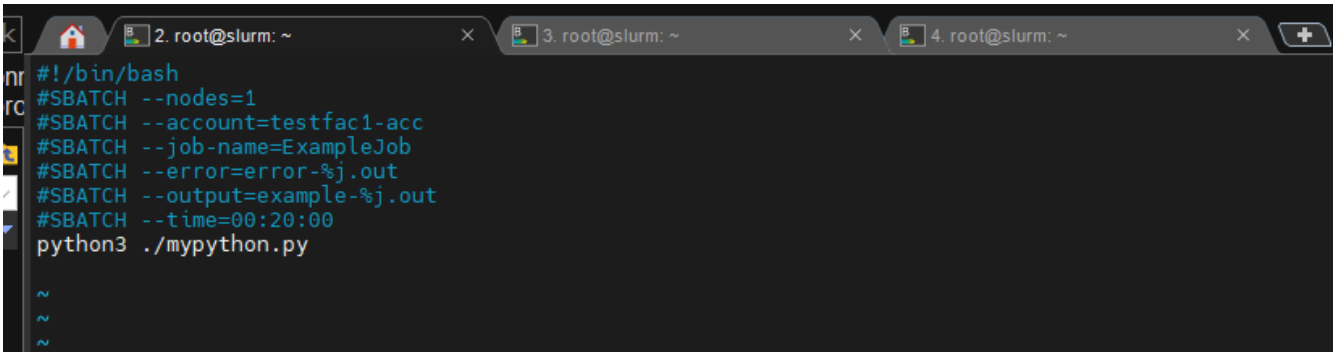


Create User:

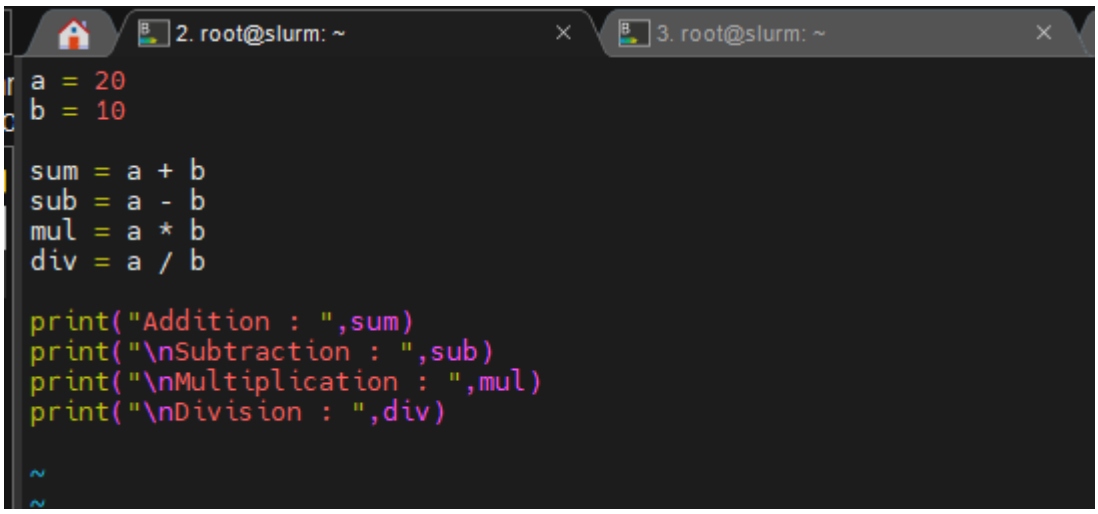
sacctmgr create user name=hpcsa1 DefaultAccount=testfac1-acc



BATCH Script:



Python Code:



Batch Job run :

sbatch < batch script >
scontrol show job < job-id >

```
root@slurm:~# sbatch myscript.sh
Submitted batch job 34
root@slurm:~# scontrol show job 34
JobId=34 JobName=ExampleJob
   UserId=root(0) GroupId=root(0) MCS_label=N/A
   Priority=4294901759 Nice=0 Account=root QOS=normal
   JobState=COMPLETED Reason=None Dependency=(null)
   Requeue=1 Restarts=0 BatchFlag=1 Reboot=0 ExitCode=0:0
   RunTime=00:00:00 TimeLimit=00:20:00 TimeMin=N/A
   SubmitTime=2024-01-22T16:55:39 EligibleTime=2024-01-22T16:55:39
   AccrueTime=2024-01-22T16:55:39
   StartTime=2024-01-22T16:55:40 EndTime=2024-01-22T16:55:40 Deadline=N/A
   SuspendTime=None SecsPreSuspend=0 LastSchedEval=2024-01-22T16:55:40 Scheduler=Main
   Partition=shruti AllocNode:Sid=slurm:4180
   ReqNodeList=(null) ExcNodeList=(null)
   NodeList=slurm.master
   BatchHost=slurm.master
   NumNodes=1 NumCPUs=1 NumTasks=1 CPUs/Task=1 ReqB:S:C:T=0:0:*:*
   TRES=cpu=1,node=1,billing=1
   Socks/Node=* NtasksPerN:B:S:C=0:0:*:* CoreSpec=*
   MinCPUsNode=1 MinMemoryNode=0 MinTmpDiskNode=0
   Features=(null) DelayBoot=00:00:00
   OverSubscribe=OK Contiguous=0 Licenses=(null) Network=(null)
   Command=/root/myscript.sh
   WorkDir=/root
   StdErr=/root/error-34.out
   StdIn=/dev/null
   StdOut=/root/example-34.out
   Power=


root@slurm:~#
```

Output of JOB:

```
root@slurm:~# cat example-34.out
Addition :  30

Subtraction :  10

Multiplication :  200

Division :  2.0
root@slurm:~#
```

Show Association:

sacctmgr show associations

```
root@slurm:~# sacctmgr show associations
   Cluster    Account       User  Partition     Share   Priority GrpJobs       GrpTRES GrpSubmit     GrpWall   GrpTRESMins MaxJobs       MaxTRES MaxTRESPerNode MaxSubmit     MaxWall   MaxTRESMins                  QOS   Def QOS Gr
pTRESRunMin
---------- ---------- ---------- ---------- --------- ---------- ------- ------------- --------- ----------- ------------- ------- ------------- -------------- --------- ----------- ------------- -------------------- --------- --
-----------
   cluster       root                            1                                                                                                                                                                 normal
   cluster       root       root                 1                                                                                                                                                                 normal
   cluster  rmalab-99                            1                                                                                                                                                                 normal
   cluster  rmalab-99    hpcsa99                 1                       node=1                                                                                                                                    normal
   cluster rmalab-acc                            1                                                                                                                                                                 normal
   cluster rmalab-hp+                            1                                                                                                                                                                 normal
   cluster rmalab-hp+   hpcsa100                 1                                                                                                                                                                 normal
   cluster testfac1-+                            1                                                                                                                                                                 normal
   cluster testfac1-+     hpcsa1                 1                                                                                                                                                                 normal
     dhanu       root                            1                                                                                                                                                                 normal
     dhanu       root       root                 1                                                                                                                                                                 normal
     dhanu  rmalab-99                            1                                                                                                                                                                 normal
     dhanu  rmalab-99    hpcsa99                 1                       node=1                                                                                                                                    normal
     dhanu rmalab-acc                            1                                                   cpu=1200000                                                                                               normal
     dhanu rmalab-hp+                            1                                                                                                                                                                 normal
     dhanu rmalab-hp+   hpcsa100                 1                                                                                                                                                                 normal
     dhanu testfac1-+                            1                                                                                                                                                                 normal
     dhanu testfac1-+     hpcsa1                 1                                                                                                                                                                 normal
     mansi       root                            1                                                     cpu=60000                                                                                               normal
     mansi       root       root                 1                                                                                                                                                                 normal
     mansi  rmalab-99                            1                                                                                                                                                                 normal
     mansi  rmalab-99    hpcsa99                 1                       node=1                                                                                                                                    normal
     mansi rmalab-acc                            1                                                     cpu=60000                                                                                               normal
     mansi rmalab-acc     hpcsa1                 1                       node=1                                                                  10000                                                             normal
     mansi rmalab-hp+                            1                                                                                                                                                                 normal
     mansi rmalab-hp+   hpcsa100                 1                                                                                                                                                                 normal
     mansi testfac1-+                            1                                                                                                                                                                 normal
```