

Assignments:12

Module:- COSA(SHELL SCRIPT)

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Lab Assignment :-

Q1. How to write shell script that will add two numbers, which are supplied as command line argument, and if these two numbers are not given in command line argument then show error and its usage.

step-1: - create a new file ‘if-add’

```
root@xyz:/script
File Edit View Search Terminal Help
[root@xyz script]# vi if-add
```

```
root@xyz:/script
File Edit View Search Terminal Help
#!/bin/bash
x=$1
y=$2
c=` expr $x + $y `
if test $c != $c
then
echo " error:please give Argument "
else
echo " the output = $c "
fi
~
```

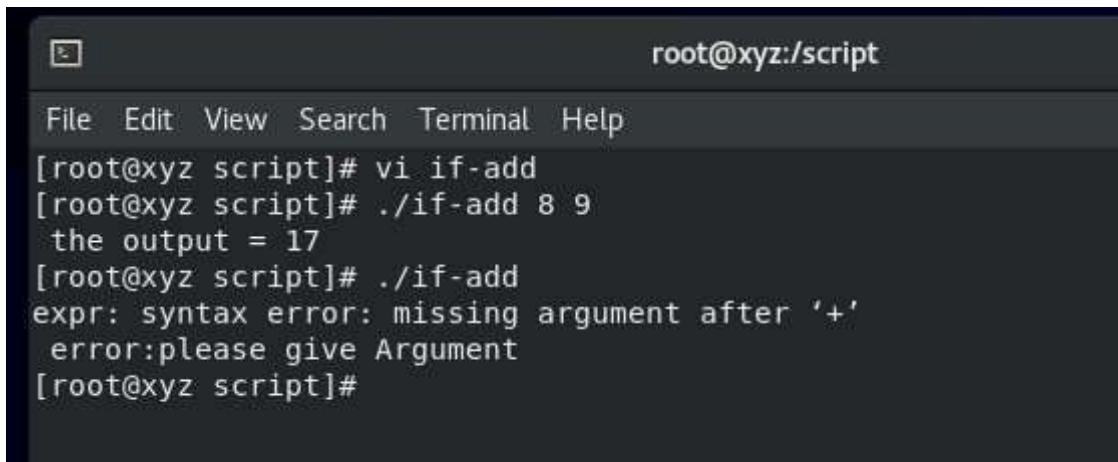
Step-2:- give execute permission to file

```
[root@xyz script]# ls -l if-add
-rwxr-xr-x. 1 root root 134 Nov 17 17:38 if-add
[root@xyz script]#
```

Step -3:- show file content

```
[root@xyz script]# cat if-add
#!/bin/bash
x=$1
y=$2
c=`expr $x + $y `
if test $c != $c
then
echo " error:please give Argument "
else
echo " the output = $c "
fi
[root@xyz script]#
```

Step-5:- Find output

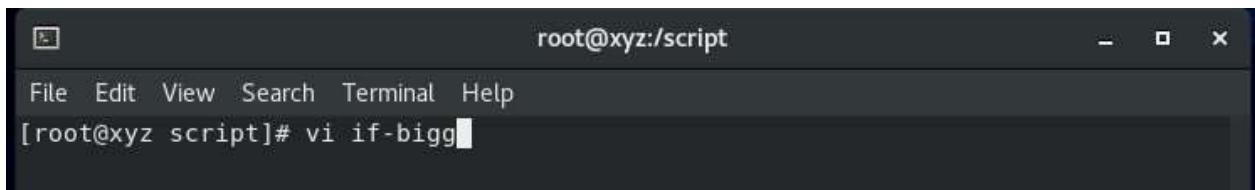


The screenshot shows a terminal window titled 'root@xyz:/script'. The window has a dark theme with white text. The menu bar includes 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal prompt is '[root@xyz script]#'. The user runs the command 'vi if-add' to edit the script. Then, they run './if-add 8 9', which outputs 'the output = 17'. Finally, they run 'expr: syntax error: missing argument after '+'', which outputs 'error:please give Argument'.

```
root@xyz:/script
File Edit View Search Terminal Help
[root@xyz script]# vi if-add
[root@xyz script]# ./if-add 8 9
the output = 17
[root@xyz script]# expr: syntax error: missing argument after '+'
error:please give Argument
[root@xyz script]#
```

Q.2 Write Script to find out biggest number from the given three Numbers. Numbers are supplies as command line argument. Print error if sufficient arguments are not supplied.

Step-1:- Create new file 'if-bigg'



The screenshot shows a terminal window titled 'root@xyz:/script'. The window has a dark theme with white text. The menu bar includes 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal prompt is '[root@xyz script]#'. The user runs the command 'vi if-bigg', which is shown in the input field.

```
root@xyz:/script
File Edit View Search Terminal Help
[root@xyz script]# vi if-bigg
```

```
root@xyz:/script
File Edit View Search Terminal Help
#!/bin/bash
x=$1
y=$2
z=$3
if test $x -gt $y -a $x -gt $z
then
echo " $x "
elif test $y -gt $x -a $y -gt $z
then
echo " $y "
elif test $z -gt $x -a $z -gt $y
then
echo " $z "
elif test $x!= $x -a $y!= $y -a $z!= $z
then
echo " Error:Please Give Argument "
fi
```

Step-2:-give execute permission to file

```
root@xyz:/script
File Edit View Search Terminal Help
[root@xyz script]# ls -l if-bigg
-rwxr-xr-x. 1 root root 261 Nov 17 19:52 if-bigg
[root@xyz script]#
```

Step-3:- to show the file content

```
[root@xyz script]# cat if-add
#!/bin/bash
x=$1
y=$2
c=` expr $x + $y `
if test $c != $c
then
echo " error:please give Argument "
else
echo " the output = $c "
fi
[root@xyz script]#
```

Step-4:- find the output

```
[root@xyz script]# ./if-bigg 4 6 9
9
[root@xyz script]# ./if-bigg
[root@xyz script]#
```

Q.3 Write script to print Numbers as 5,4,3,2,1 using while loop.

Step-1:-Create new file ‘while-loop’

```
root@localhost:/script
File Edit View Search Terminal Help
[root@localhost script]# vi while-loop
[root@localhost script]# 
```



```
root@localhost:/script
File Edit View Search Terminal Help
#!/bin/bash
i=5
while test $i !=0
do
echo "$i"
i=`expr $i - 1`
done
```

Step-2:- to give file execute permission

```
[root@localhost script]# ls -l while-loop
-rw-r--r--. 1 root root 66 Nov 17 22:43 while-loop
[root@localhost script]# chmod +x while-loop
[root@localhost script]# ls -l while-loop
-rwxr-xr-x. 1 root root 66 Nov 17 22:43 while-loop
[root@localhost script]# 
```

Step-3:-to show file content and output

```
File Edit View Search Terminal Help
[root@localhost script]# cat while-loop
#!/bin/bash
i=5
while test $i != 0
do
echo " $i "
i=`expr $i - 1`
done
[root@localhost script]# ./while-loop
5
4
3
2
1
[root@localhost script]#
```

Q.4 Write Script to see current date, time, username, and current directory.

Step-1:- Create a new file ‘current’ and give execute permission

```
root@localhost:~/script
File Edit View Search Terminal Help
[root@localhost script]# vi current
[root@localhost script]# ls -l current
-rw-r--r--. 1 root root 43 Nov 17 22:57 current
[root@localhost script]# chmod +x current
[root@localhost script]# ls -l current
-rwxr-xr-x. 1 root root 43 Nov 17 22:57 current
[root@localhost script]#
```

Step- 2:- to show file content and output

```
[root@localhost script]# cat current
#!/bin/bash
echo " Current date is `date` "
echo " Current time is `time` "
echo " Username is `whoami` "
echo " Current directory `pwd` "

[root@localhost script]# ./current
Current date is Thu Nov 17 23:02:35 IST 2022

real    0m0.000s
user    0m0.000s
sys     0m0.000s
Current time is
Username is root
Current directory /root/script
[root@localhost script]#
```

Q.5 Write script to determine whether given file exist or not, file name is supplied as command line argument, also check for sufficient number of command line argument

Step-1:- create new file ‘file-exist’ and give execute permission

```
root@localhost:~/script

File Edit View Search Terminal Help
[root@localhost script]# vi file-exist
[root@localhost script]# ls -l file-exist
-rw-r--r--. 1 root root 104 Nov 17 23:10 file-exist
[root@localhost script]# chmod +x file-exist
[root@localhost script]# ls -l file-exist
-rwxr-xr-x. 1 root root 104 Nov 17 23:10 file-exist
[root@localhost script]#
```

Step -2:- show all exist file in current directory using ‘ls’ command

```
root@localhost:~/script
File Edit View Search Terminal Help
[root@localhost script]# ls
current file-exist while-loop
[root@localhost script]#
```

Step-3:- to show file content and output

```
root@localhost:~/script
File Edit View Search Terminal Help
[root@localhost script]# cat file-exist
#!/bin/bash
if test -e /root/script
then
echo " File is exist "
else
echo " File not exist "
fi

[root@localhost script]# ./file-exist while loop
File is exist
[root@localhost script]#
```

Q.6 Write shell script to show various system configuration like

- 1) Currently logged user and his logname
- 2) Your current shell
- 3) Your home directory
- 4) Your operating system type
- 5) Your current path setting
- 6) Your current working directory
- 7) Show Currently logged number of users
- 8) About your os and version ,release number , kernel version
- 9) Show all available shells

- 10) Show mouse settings**
- 11) Show computer cpu information like processor type, speed etc**
- 12) Show memory information**
- 13) Show hard disk information like size of hard-disk, cache memory, model etc**
- 14) File system (Mounted)**

Step-1:- Create a new file ‘sy-conf’ and give its execute permission

```
File Edit View Search Terminal Help
[root@localhost script]# vi sy-conf
[root@localhost script]# ls -l sy-conf
-rw-r--r--. 1 root root 646 Nov 18 00:38 sy-conf
[root@localhost script]# chmod +x sy-conf
[root@localhost script]# ls -l sy-conf
-rwxr-xr-x. 1 root root 646 Nov 18 00:38 sy-conf
[root@localhost script]#
```

Step-2:- show file content

```
root@localhost:~/script
File Edit View Search Terminal Help
[root@localhost script]# cat sy-conf
#!/bin/bash
echo " logged in user: "
who
echo " current shell: " $SHELL
echo " home directory: " $HOME
echo " operating System type: " $OSTYPE
echo " current path: " $PATH
echo " current working directory: `pwd` "
echo " current logged user : `w -h|wc -l` "
echo " current os and version,release number,kernel version : `uname -o`   `uname -r` "
echo " show available shells: `chsh -l` "
echo " show mouse setting : "
echo " show computer CPU information: `cat /proc/cpuinfo` "
echo " show memory information : `cat /proc/meminfo` "
echo " show hard disk information : `sudo lshw -class disk` "
echo " show Mounted File system : `cat /etc/mtab` "

[root@localhost script]#
```

Step-3:- find output

```
root@localhost:~/script
File Edit View Search Terminal Help
[root@localhost script]# ./sy-conf
logged in user:
root      tty2          2022-11-17 22:39 (tty2)
current shell: /bin/bash
home directory: /root
operating System type: linux-gnu
current path: /usr/local/bin:/usr/local/sbin:/usr/bin:/usr/sbin:/root/bin
current working directory: /root/script
current logged user : 1
current os and version,release number,kernel version : GNU/Linux 4.18.0-193.
el8.x86_64
show available shells: /bin/sh
/bin/bash
/usr/bin/sh
/usr/bin/bash
show mouse setting :
show computer CPU information: processor      : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 69
model name     : Intel(R) Core(TM) i3-4030U CPU @ 1.90GHz
stepping        : 1
```

```
microcode      : 0x25
cpu MHz        : 1895.615
cache size     : 3072 KB
physical id    : 0
siblings        : 1
core id         : 0
cpu cores       : 1
apicid          : 0
initial apicid : 0
fpu             : yes
fpu_exception   : yes
cpuid level    : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
                  pat pse36 clflush mmx fxsr sse sse2 ss syscall nx pdpe1gb rdtscp lm constant_t
                  sc arch_perfmon nopl xtopology tsc_reliable nonstop_tsc cpuid pnpi pclmulqdq sss
                  e3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
                  avx f16c rdrand hypervisor lahf lm abm cpuid fault invpcid single pti ssbd ibr
                  s ibpb stibp fsgsbase tsc_adjust bmi1 avx2 smep bmi2 invpcid xsaveopt arat md_c
                  lear flush_l1d arch_capabilities
bugs            : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds
                  swapgs itlb multihit
```

```
s ibpb stibp fsgsbase tsc_adjust bmi1 avx2 smep bmi2 invpcid xsaveopt arat md_c  
clear flush_l1d arch_capabilities  
bugs : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds  
swapgs itlb_multihit  
bogomips : 3791.23  
clflush size : 64  
cache_alignment : 64  
address sizes : 45 bits physical, 48 bits virtual  
power management:  
    show memory information : MemTotal: 2007040 kB  
MemFree: 222720 kB  
MemAvailable: 596692 kB  
Buffers: 2148 kB  
Cached: 496476 kB  
SwapCached: 0 kB  
Active: 1052544 kB  
Inactive: 360236 kB  
Active(anon): 916560 kB  
Inactive(anon): 23444 kB  
Active(file): 135984 kB  
Inactive(file): 336792 kB  
Unevictable: 0 kB
```

```
Mlocked: 0 kB  
SwapTotal: 4194300 kB  
SwapFree: 4194300 kB  
Dirty: 264 kB  
Writeback: 0 kB  
AnonPages: 889904 kB  
Mapped: 268680 kB  
Shmem: 25848 kB  
KReclaimable: 65268 kB  
Slab: 178360 kB  
SReclaimable: 65268 kB  
SUnreclaim: 113092 kB  
KernelStack: 11336 kB  
PageTables: 49656 kB  
NFS_Unstable: 0 kB  
Bounce: 0 kB  
WritebackTmp: 0 kB  
CommitLimit: 5197820 kB  
Committed_AS: 4624308 kB  
VmallocTotal: 34359738367 kB  
VmallocUsed: 0 kB  
VmallocChunk: 0 kB
```

```
Percpu:           64000 kB
HardwareCorrupted:    0 kB
AnonHugePages:   387072 kB
ShmemHugePages:    0 kB
ShmemPmdMapped:    0 kB
HugePages_Total:    0
HugePages_Free:     0
HugePages_Rsvd:     0
HugePages_Surp:     0
Hugepagesize:      2048 kB
Hugetlb:          0 kB
DirectMap4k:       227200 kB
DirectMap2M:       1869824 kB
DirectMap1G:        0 kB
show hard disk information :  *-cdrom
    description: DVD-RAM writer
    product: VMware IDE CDR10
    vendor: NECVMWar
    physical id: 0.0.0
    bus info: scsi@1:0.0.0
    logical name: /dev/cdrom
    logical name: /dev/sr0
```

```
logical name: /dev/cdrom
logical name: /dev/sr0
version: 1.00
capabilities: removable audio cd-r cd-rw dvd dvd-r dvd-ram
configuration: ansiversion=5 status=open
show Mounted File system : sysfs /sys sysfs rw,seclabel,nosuid,nodev,noexec,relatime 0 0
proc /proc proc rw,nosuid,nodev,noexec,relatime 0 0
devtmpfs /dev devtmpfs rw,seclabel,nosuid,size=975256k,nr_inodes=243814,mode=755 0 0
securityfs /sys/kernel/security securityfs rw,nosuid,nodev,noexec,relatime 0 0
tmpfs /dev/shm tmpfs rw,seclabel,nosuid,nodev 0 0
devpts /dev/pts devpts rw,seclabel,nosuid,noexec,relatime,gid=5,mode=620,ptmxmode=000 0 0
tmpfs /run tmpfs rw,seclabel,nosuid,nodev,mode=755 0 0
tmpfs /sys/fs/cgroup tmpfs ro,seclabel,nosuid,nodev,noexec,mode=755 0 0
cgroup /sys/fs/cgroup/systemd cgroup rw,seclabel,nosuid,nodev,noexec,relatime,xattr,release_agent=/usr/lib/systemd/systemd-cgroups-agent,name=systemd 0 0
pstore /sys/fs/pstore pstore rw,seclabel,nosuid,nodev,noexec,relatime 0 0
bpf /sys/fs/bpf bpf rw,nosuid,nodev,noexec,relatime,mode=700 0 0
cgroup /sys/fs/cgroup/cpu,cpuacct cgroup rw,seclabel,nosuid,nodev,noexec,relatime,cpu,cpuacct 0 0
```

```
cgroup /sys/fs/cgroup/blkio cgroup rw,seclabel,nosuid,nodev,noexec,relatime,blk
io 0 0
configfs /sys/kernel/config configfs rw,relatime 0 0
/dev/nvme0n1p2 / xfs rw,seclabel,relatime,attr2,inode64,noquota 0 0
selinuxfs /sys/fs/selinux selinuxfs rw,relatime 0 0
debugfs /sys/kernel/debug debugfs rw,seclabel,relatime 0 0
mqueue /dev/mqueue mqueue rw,seclabel,relatime 0 0
systemd-1 /proc/sys/fs/binfmt_misc autofs rw,relatime,fd=44,pgrp=1,timeout=0,mi
nproto=5,maxproto=5,direct,pipe_ino=22477 0 0
hugetlbfs /dev/hugepages hugetlbfs rw,seclabel,relatime,pagesize=2M 0 0
/dev/nvme0n1p3 /home xfs rw,seclabel,relatime,attr2,inode64,noquota 0 0
/dev/nvme0n1p1 /boot ext4 rw,seclabel,relatime 0 0
sunrpc /var/lib/nfs/rpc_pipefs rpc_pipefs rw,relatime 0 0
tmpfs /run/user/42 tmpfs rw,seclabel,nosuid,nodev,relatime,size=200704k,mode=70
0,uid=42,gid=42 0 0
tracefs /sys/kernel/debug/tracing tracefs rw,seclabel,relatime 0 0
tmpfs /run/user/0 tmpfs rw,seclabel,nosuid,nodev,relatime,size=200704k,mode=700
0 0
gvfsd-fuse /run/user/0/gvfs fuse.gvfsd-fuse rw,nosuid,nodev,relatime,user_id=0,
group_id=0 0 0
fusectl /sys/fs/fuse/connections fusectl rw,relatime 0 0
[root@localhost script]#
```