

Shell and Shell Scripting Session No.4.2

- **Shopt** command is used for shell setting
 - **Shopt -s** will tell all the options that are on

```
[root@ip-172-31-6-112 ~]# shopt -s
checkwinsize      on
cmdhist           on
expand_aliases    on
extglob           on
extquote          on
force_fignore     on
histappend        on
interactive_comments  on
login_shell       on
progcomp          on
promptvars        on
sourcepath        on
[root@ip-172-31-6-112 ~]# |
```

History verification option

- Turning on the history verification option

```
[root@ip-172-31-6-112 ~]# shopt histverify
histverify        off
[root@ip-172-31-6-112 ~]# shopt -s histverify
[root@ip-172-31-6-112 ~]#
[root@ip-172-31-6-112 ~]# !1000
[root@ip-172-31-6-112 ~]# vi /etc/ssh/sshd_config |
[root@ip-172-31-6-112 ~]#
```

- **Column** command is used for seeing output column-wise

```
[root@ip-172-31-6-112 ~]# shopt | column
autocd      off      expand_aliases  on      lithist      off
cdable_vars off      extdebug       off     login_shell  on
cdspell     on       extglob        on      mailwarn     off
checkhash   off      extquote       on      no_empty_cmd_completion off
checkjobs   off      failglob       off     nocasematch  off
checkwinsize on       force_ignore   on      nullglob     off
cmdhist     on       globstar       off     progcomp     on
compat31    off      gnu_errfmt     off     promptvars   on
compat32    off      histappend     on      restricted_shell off
compat40    off      histreedit     off     shift_verbose off
compat41    off      histverify     on      sourcepath   on
direxand    off      hostcomplete   off     syslog_history off
dirspell    off      huponexit      off     xpg_echo     off
dotglob     off      interactive_comments on
execfail    off      lastpipe       off
```

- Any command output if we want to print on command prompt & the same time save in a file then we can use the **Tee** command

```
[root@ip-172-31-6-112 ~]# date | tee b.txt
Sun Sep 11 11:23:43 UTC 2022
[root@ip-172-31-6-112 ~]# cat b.txt
Sun Sep 11 11:23:43 UTC 2022
```

- **Export** keyword is used for sharing variables with the other program

```
[root@ip-172-31-6-112 ~]# echo $city
jaipur
[root@ip-172-31-6-112 ~]#
[root@ip-172-31-6-112 ~]# export city
[root@ip-172-31-6-112 ~]# echo $city
jaipur
[root@ip-172-31-6-112 ~]#
[root@ip-172-31-6-112 ~]# bash a1.sh
jaipur
[root@ip-172-31-6-112 ~]#
```

- `()` is used for creating variables in a subshell

```
[root@ip-172-31-6-112 ~]# ( country=india )
[root@ip-172-31-6-112 ~]#
[root@ip-172-31-6-112 ~]# echo $country

[root@ip-172-31-6-112 ~]# ( echo hi )
hi
[root@ip-172-31-6-112 ~]# ( echo $$ )
21104
[root@ip-172-31-6-112 ~]# echo $$
21104
[root@ip-172-31-6-112 ~]# |
```

- Running two jobs/programs in parallel

```
echo "start all jobs..."

/root/p1.sh &

/root/p2.sh &

wait

echo "all job done"
~
```

- Awk command is used for data manipulation

- Printing data in awk

```
[root@ip-172-31-6-112 ~]# who | awk '{ print "hi" }'
hi
hi
[root@ip-172-31-6-112 ~]# who | awk '{ print $1 }'
ec2-user
ec2-user
[root@ip-172-31-6-112 ~]# who | awk '{ print $2 }'
```

- **NF** is a predefined variable whose value is the number of fields in the current record. No matter how many fields there are, the last field in a record can be represented by **\$NF**.

```
[root@ip-172-31-6-112 ~]# who | awk '{ print $1 " : " $NF }'
ec2-user : (49.36.237.112)
ec2-user : (49.36.237.112)
[root@ip-172-31-6-112 ~]#
```

- **OFS** is a built-in variable in the awk command used for separating fields. By default field separator is space

```
[root@ip-172-31-6-112 ~]# date | awk '{ print $3,$2,$NF}'
11 Sep 2022
[root@ip-172-31-6-112 ~]#
[root@ip-172-31-6-112 ~]# date | awk 'OFS="/" { print $3,$2,$NF}'
11/Sep/2022
[root@ip-172-31-6-112 ~]# date | awk 'OFS="-" { print $3,$2,$NF}'
11-Sep-2022
```

- **Begin** is a kind of function in awk that will execute the action before the input lines

```
[root@ip-172-31-6-112 ~]# ps | awk 'BEGIN { print "now process list start.." } { print $1}'
now process list start..
PID
21102
21103
21104
21776
21777
```

- Creating conditions in the awk command

```
[root@ip-172-31-6-112 ~]# cat /etc/passwd | awk -F: '$3 >= 1000 { print $1}'
nfsnobody
ec2-user
vimal
tom
mybashnew
pop
rahu1
pppp
jack
[root@ip-172-31-6-112 ~]# |
```

- // symbol is used for searching in the awk command

```
[root@ip-172-31-6-112 ~]# awk -F: '/bash/ { print $1 }' /etc/passwd
root
ec2-user
vimal
tom
mybashnew
pop
rahu1
pppp
jack
[root@ip-172-31-6-112 ~]# |
```

- **Sort** command is used for sorting the data & **Unique** command tells the unique lines in the file

```
[root@ip-172-31-6-112 ~]# awk -F: '{ print $7 }' /etc/passwd | sort | uniq
/bin/bash
/bin/sync
/sbin/halt
/sbin/nologin
/sbin/shutdown
[root@ip-172-31-6-112 ~]# |
```

- **SCP** command is used for transferring files from one system to another

```
Vimal Daga@DESKTOP-3E1AGGT MINGW64 ~/Downloads
$ scp -i "aws_training_2022_key.pem" vimal.sh ec2-user@ec2-13-126-140-227.ap-south-1.compute.amazonaws.com:/tmp
vimal.sh
100% 20 0.6KB/s 00:00
```

- Running script with SSh command

```
Vimal Daga@DESKTOP-3E1AGGT MINGW64 ~/Downloads
$ ssh -i "aws_training_2022_key.pem" ec2-user@ec2-13-126-140-227.ap-south-1.compute.amazonaws.com
bash /tmp/vimal.sh
hi i m vimal
```