

## String Processing:

```
[root@naggar-Inspiron:~]# wc /etc/passwd
[root@naggar-Inspiron:~]# wc -l /etc/passwd
[root@naggar-Inspiron:~]# wc -w /etc/passwd
[root@naggar-Inspiron:~]# wc -c /etc/passwd

[root@naggar-Inspiron:~]# grep root /etc/passwd
[root@naggar-Inspiron:~]# grep -n root /etc/passwd      (Precedes each line with
relative line number in the file)
[root@naggar-Inspiron:~]# grep -c root /etc/passwd      (Counts the line that
contains the pattern)
[root@naggar-Inspiron:~]# grep -i root /etc/passwd      (Ignore case sensitive)
[root@naggar-Inspiron:~]# grep -w root /etc/passwd      (Search for the expression
as a complete word)
[root@naggar-Inspiron:~]# grep -i root /etc/passwd      (Ignore case sensitive)

[root@naggar-Inspiron:~]# cut -f 3 -d: /etc/passwd      (-f specifies field or
column.) (-d specifies field delimiter (default is TAB))

[root@naggar-Inspiron:~]# sort -t: -k1 /etc/passwd      (-t field separator -k for
key )
[root@naggar-Inspiron:~]# sort -t: -k3 /etc/passwd
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```

## Standard input, standard output, and standard error:

```
[root@naggar-Inspiron:~]# date > timestamp
[root@naggar-Inspiron:~]# tail -n 100 /var/log/dmesg > last-100-boot-messages
[root@naggar-Inspiron:~]# tail -n 20 /var/log/dmesg > last-20-boot-messages

[root@naggar-Inspiron:~]# cat last-100-boot-messages last-20-boot-messages 1> merged
[root@naggar-Inspiron:~]# ls -a > my-file-names

[root@naggar-Inspiron:~]# echo "new line of information" >> append-file
[root@naggar-Inspiron:~]# echo "new line2 of information" >> append-file

[root@naggar-Inspiron:~]# find /etc -name passwd 2> errors
[root@naggar-Inspiron:~]# find /etc -name passwd > output 2> errors
[root@naggar-Inspiron:~]# find /etc -name passwd > output 2> /dev/null      (git rid of
stderr)
[root@naggar-Inspiron:~]# find /etc -name passwd &> save-both      (redirect
both err and stdout)
[root@naggar-Inspiron:~]# find /etc -name passwd >> save-both 2>&1
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```

## Piping:

```
[root@naggar-Inspiron:~]# ls -l /usr/bin | less
[root@naggar-Inspiron:~]# ls -lR / | wc -l > how-many-files
[root@naggar-Inspiron:~]# ls -lR / | tee root-list-output | more
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```

## Editing files with gedit:

```
[root@naggar-Inspiron:~]# gedit file1
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```

## Editing files with Vim:

```
[root@naggar-Inspiron:~]# vim file1
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```

Editing files with nano:

```
[root@naggar-Inspiron:~]# nano file1
```

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Environment Vars:

```
[root@naggar-Inspiron:~]# env
[root@naggar-Inspiron:~]# echo $HOME
[root@naggar-Inspiron:~]# su root
[root@naggar-Inspiron:~]# echo $HOME
```

Variable substitution:

```
[root@naggar-Inspiron:~]# x=5
[root@naggar-Inspiron:~]# echo x
[root@naggar-Inspiron:~]# echo $x                (The value of variable x)
```

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Quoting:

```
[root@naggar-Inspiron:~]# echo "Path is $PATH"    ($PATH will be expanded)
[root@naggar-Inspiron:~]# echo 'Path is $PATH'    ($PATH will not be expanded)
[root@naggar-Inspiron:~]# echo "Path is \ $PATH"
```

Command substitution:

```
[root@naggar-Inspiron:~]# echo "Today is $(date)"
[root@naggar-Inspiron:~]# echo "Today is `date`"
```

Arithmetic substitution:

```
[root@naggar-Inspiron:~]# echo "Sum of 1 plus 2 is $[1+2]"
[root@naggar-Inspiron:~]# echo "Sum of 1 plus 2 is $((1+2))"
```

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Command Alias

```
[root@naggar-Inspiron:~]# alias                    (list all aliased commands)
[root@naggar-Inspiron:~]# alias l.='ls .*'
[root@naggar-Inspiron:~]# alias ll='ls -l'
[root@naggar-Inspiron:~]# alias ls='ls'
[root@naggar-Inspiron:~]# unalias ls
[root@naggar-Inspiron:~]# alias ls='ls -al'
[root@naggar-Inspiron:~]# \ls                      (bypass alias)
```

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Command history:

```
[root@naggar-Inspiron:~]# cat .bash_history
[root@naggar-Inspiron:~]# history
[root@naggar-Inspiron:~]# !!
[root@naggar-Inspiron:~]# !3
[root@naggar-Inspiron:~]# !-4
[root@naggar-Inspiron:~]# !ca
```