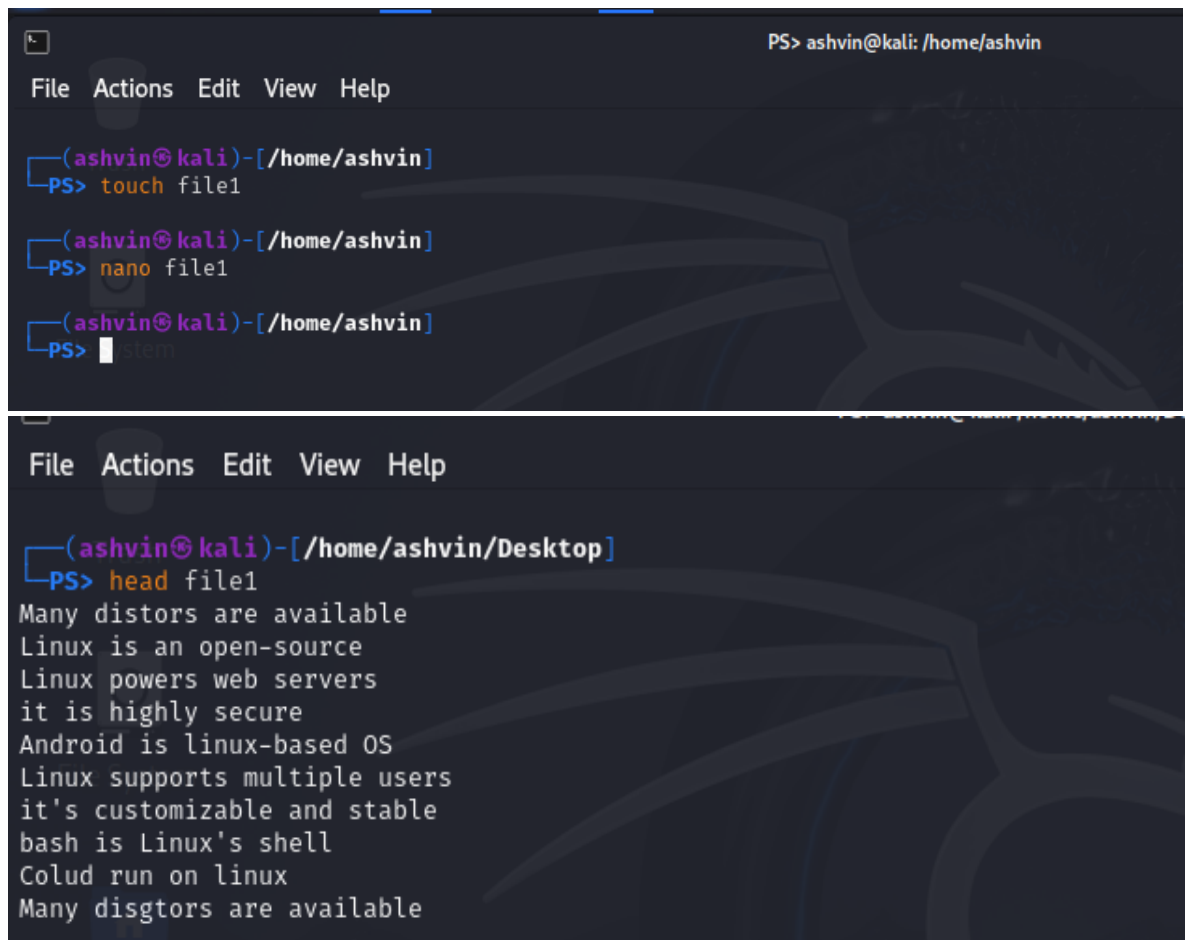


Lab 4

Filter commands

1. head command (create file1. see the end of the page for the content of file1)

- give command which prints first 10 lines without specifying any number.
- give the command which prints first 5 lines.



The image consists of two screenshots of a terminal window. The top screenshot shows the user creating a file named 'file1' using the 'touch' command and then opening it with 'nano'. The bottom screenshot shows the user running the 'head' command on 'file1', which displays the first 10 lines of the file's content.

```
PS> ashvin@kali: /home/ashvin  
File Actions Edit View Help  
(ashvin@kali)-[/home/ashvin]  
PS> touch file1  
(ashvin@kali)-[/home/ashvin]  
PS> nano file1  
(ashvin@kali)-[/home/ashvin]  
PS>   
  
File Actions Edit View Help  
(ashvin@kali)-[/home/ashvin/Desktop]  
PS> head file1  
Many distors are available  
Linux is an open-source  
Linux powers web servers  
it is highly secure  
Android is linux-based OS  
Linux supports multiple users  
it's customizable and stable  
bash is Linux's shell  
Colud run on linux  
Many disgtors are available
```

```
PS> ashvin@kali: /  
File Actions Edit View Help  
  
(ashvin@kali)-[/home/ashvin/Desktop]  
PS> head -n 5 file1  
Many distros are available  
Linux is an open-source  
Linux powers web servers  
it is highly secure  
Android is linux-based OS
```

2.tail command (use file1)

- give command which prints last 10 lines without specifying any number.
- give the command which prints last 5 lines.

```
PS> ashvin@kali: /  
File Actions Edit View Help  
  
(ashvin@kali)-[/home/ashvin/Desktop]  
PS> tail file1  
Android is linux-based OS  
Linux supports multiple users  
it's customizable and stable  
bash is Linux's shell  
Could run on linux  
Many distros are available  
Linux manages system processes  
Cloud run on linux  
Linux uses package managers  
it supports virtualization tools
```

```
PS> ashvin@  
File Actions Edit View Help  
  
(ashvin@kali)-[/home/ashvin/Desktop]  
PS> tail -n 5 file1  
Many distros are available  
Linux manages system processes  
Cloud run on linux  
Linux uses package managers  
it supports virtualization tools
```

3.sort command (use file1)

- sort the file
- sort a file by using column 2
- sort a file by numbers which in column 3

```

PS> ashvin@kali: /home
File Actions Edit View Help

(ashvin@kali)-[/home/ashvin/Desktop]
PS> sort file1
Android in linux-based OS
Clouds run on Linux
Clouds run on Linux
Linux is an open source
Linux manages system processes
Linux powers web servers
Linux support multiple users
Linux usages package manangers
Many distors are available
Many distors are available
bash is Linux's shell
it is highly secure
it supports virtulization tools
it's customizable and stable

```

```

PS> ashvin@kali: /home
File Actions Edit View Help

(ashvin@kali)-[/home/ashvin/Desktop]
PS> sort -k2 file1
it's customizable and stable
Many distors are available
Many distors are available
Android in linux-based OS
bash is Linux's shell
Linux is an open source
it is highly secure
Linux manages system processes
Linux powers web servers
Clouds run on Linux
Clouds run on Linux
Linux support multiple users
it supports virtulization tools
Linux usages package manangers

```

```
(ashvin@kali)-[/home/ashvin/Desktop]
PS> sort -n -k3 file1
Android in linux-based OS
Clouds run on Linux
Clouds run on Linux
Linux is an open source
Linux manages system processes
Linux powers web servers
Linux support multiple users
Linux usages package manangers
Many distors are available
Many distors are available
bash is Linux's shell
it is highly secure
it supports virtulization tools
it's customizable and stable
```

4. uniq command (use file1)

- remove duplicates line from file (you can only remove duplicates line while it is sorted if it is not sorted you have to use sort command along with the pipe)
- change First letter uppercase to lowercase in **one** of the two similar lines.
- write the uniq command which ignores the case differences
- again change the cases as original content
- prefixes the line by number of occurrences.
- Prints only duplicate line.
- Print only uniq line.

```
PS> ashvin@kali: /home/ashvin/Desktop
File Actions Edit View Help
PS> sort file1 | uniq
Android in linux-based OS
Clouds run on Linux
Linux is an open source
Linux manages system processes
Linux powers web servers
Linux support multiple users
Linux usages package manangers
Many distors are available
bash is Linux's shell
it is highly secure
it supports virtulization tools
it's customizable and stable

(ashvin@kali)-[/home/ashvin/Desktop]
PS> sort file1 | uniq -i
Android in linux-based OS
Clouds run on Linux
Linux is an open source
Linux manages system processes
Linux powers web servers
Linux support multiple users
Linux usages package manangers
Many distors are available
bash is Linux's shell
it is highly secure
it supports virtulization tools
it's customizable and stable
```

```
PS> ashvin@kali: /home/ashvin/Desktop
File Actions Edit View Help
PS> sort file1 | uniq -c
  1 Android in linux-based OS
  2 Clouds run on Linux
  1 Linux is an open source
  1 Linux manages system processes
  1 Linux powers web servers
  1 Linux support multiple users
  1 Linux usages package manangers
  2 Many distors are available
  1 bash is Linux's shell
  1 it is highly secure
  1 it supports virtulization tools
  1 it's customizable and stable

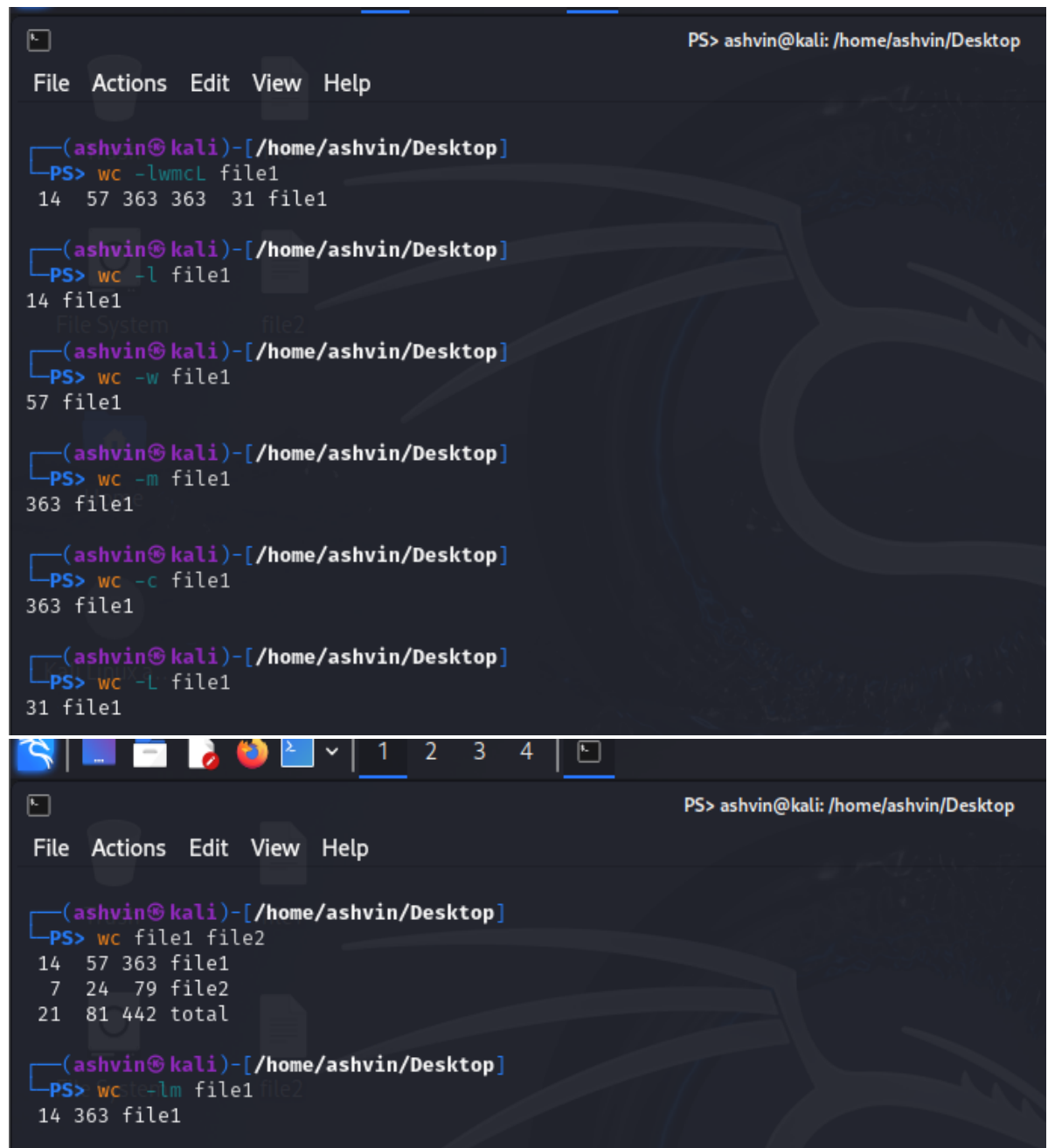
(ashvin@kali)-[/home/ashvin/Desktop]
PS> sort file1 | uniq -d
Clouds run on Linux
Many distors are available

(ashvin@kali)-[/home/ashvin/Desktop]
PS> sort file1 | uniq -u
Android in linux-based OS
Linux is an open source
Linux manages system processes
Linux powers web servers
Linux support multiple users
Linux usages package manangers
bash is Linux's shell
it is highly secure
it supports virtulization tools
it's customizable and stable
```

5. wc command (use file1)

- give the command which prints number of lines, word, and characters/bytes.
- Count only lines
- Count only words
- Count only characters
- Count only bytes
- Count maximux line length
- List the lines, words, and characters of multiple files

- Print only lines and characters of particular file using combine option.



```
PS> ashvin@kali: /home/ashvin/Desktop

File Actions Edit View Help

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -lwmcL file1
14  57 363 363  31 file1

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -l file1
14 file1

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -w file1
57 file1

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -m file1
363 file1

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -c file1
363 file1

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -L file1
31 file1

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc file1 file2
14  57 363 file1
 7  24  79 file2
21  81 442 total

(ashvin@kali)-[/home/ashvin/Desktop]
PS> wc -lm file1 file2
14 363 file1
```

6.tac command

Use file2 Content which is at the end of the page

```
PS> ashvin@kali: /home/ashvin/Desktop
File Actions Edit View Help
(ashvin@kali)-[/home/ashvin/Desktop]
PS> touch file2
(ashvin@kali)-[/home/ashvin/Desktop]
PS> nano file2
(ashvin@kali)-[/home/ashvin/Desktop]
PS> tac file2
Eve : 92
Bob : 75 Bob : 78
David : 88
Carol : 95
Bob : 80 Bob : 85
Alice : 90
```

7.sed command : It allows us to apply search and replace operation on our data effectively. Use the following data throughout this command.

Alice : 90
Bob : 85 Bob : 80
Carol : 95
David: 88
Bob: 75
Eve: 92

- **Substitute** : sed 's/Bob/Charlie/' file2 :
Replace first occurrence of each line
- sed 's/Bob/Charlie/2' file2 : Replace second occurrence of each line

- sed 's/Bob/Charlie/g' file2 : Replace all occurrences(all Bobs) exist on file1. 'g' means globally.
- sed '2s/Bob/Charlie/' file2: Replace first occurrence of line 2 only.
- sed '2s/Bob/Charlie/2' file2 : Replace second occurrence(Second Bob) of line 2 only.
- sed '2s/Bob/Charlie/g' file2 : Replace all Bob on line2
- **Delete** : sed '/Bob/d' file2 : delete the whole line which matches specific word.
- **Print** : sed -n '/David/p' file2 : Print the whole line which matches the word David
- **Insert**: sed '/Eve/i\Zara : 80 ' file2 : Insert a new line before a pattern.
- **Append**: sed '/Eve/a\Alisa : 80' file2: Append a new line after a matching pattern.
- **Replace**: sed '/David/c\David : 100' file2 : This Replace the entire line that matches the pattern.

File Actions Edit View Help

(ashvin@kali)-[/home/ashvin/Desktop]

PS> sed 's/Bob/Charlie/' file2

Alice : 90
Charlie : 80 Bob : 85
Carol : 95
David : 88
Charlie : 75 Bob : 78
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]

PS> sed 's/Bob/Charlie/2' file2

Alice : 90
Bob : 80 Charlie : 85
Carol : 95
David : 88
Bob : 75 Charlie : 78
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]

PS> sed '2s/Bob/Charlie/' file2

Alice : 90
Charlie : 80 Bob : 85
Carol : 95
David : 88
Bob : 75 Bob : 78
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]

PS> sed '2s/Bob/Charlie/2' file2

Alice : 90
Bob : 80 Charlie : 85
Carol : 95
David : 88
Bob : 75 Bob : 78
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]

PS> sed '2s/Bob/Charlie/g' file2

Alice : 90
Charlie : 80 Charlie : 85
Carol : 95
David : 88
Bob : 75 Bob : 78
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]

PS> █

```
PS> ashvin@kali: /home/ashvin/Desktop

File Actions Edit View Help

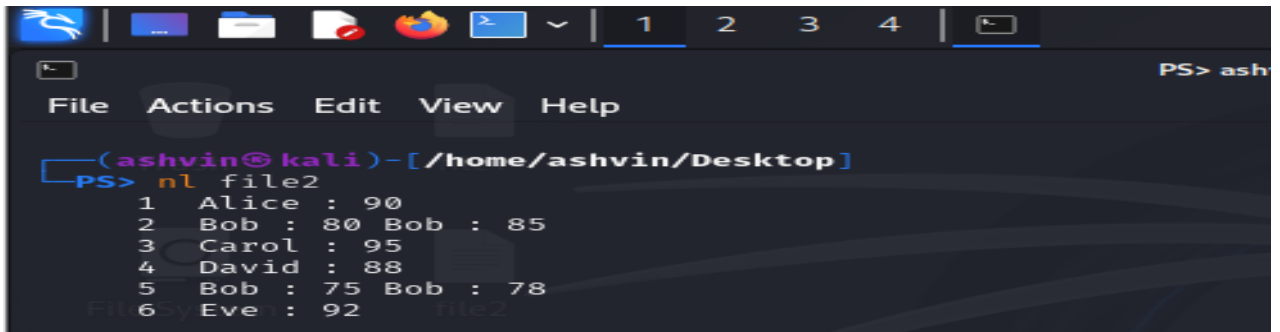
(ashvin@kali)-[/home/ashvin/Desktop]
PS> sed '/Bob/d' file2
Alice : 90
Carol : 95
David : 88
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]
PS> sed '/Eve/i\Zara : 80' file2
Alice : 90
Bob : 80 Bob : 85
Carol : 95
David : 88
Bob : 75 Bob : 78
Zara : 80
Eve : 92

(ashvin@kali)-[/home/ashvin/Desktop]
PS> sed '/Eve/a\Alisa : 80' file2
Alice : 90
Bob : 80 Bob : 85
Carol : 95
David : 88
Bob : 75 Bob : 78
Eve : 92
Alisa : 80

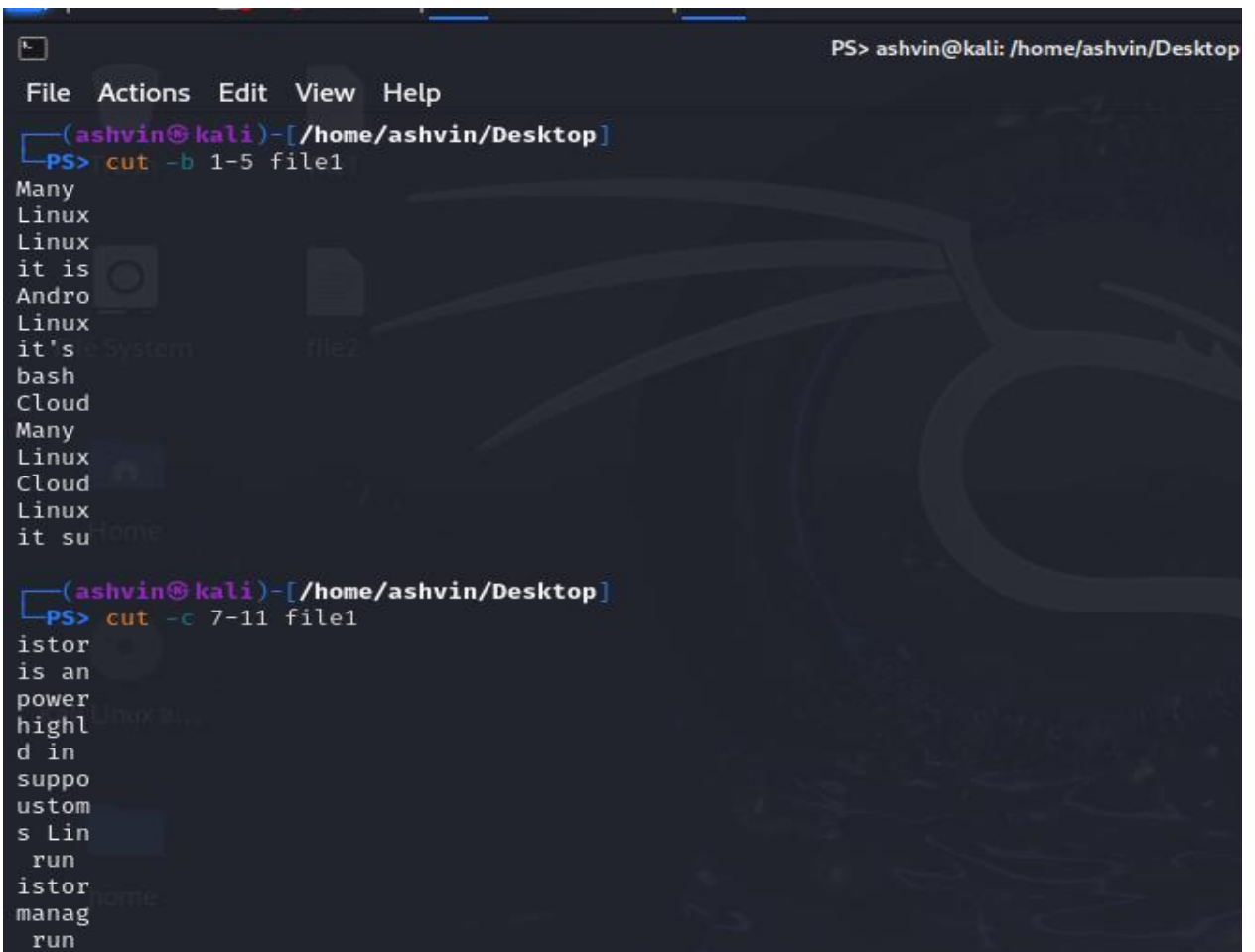
(ashvin@kali)-[/home/ashvin/Desktop]
PS> sed '/David/c\David : 100' file2
Alice : 90
Bob : 80 Bob : 85
Carol : 95
David : 100
Bob : 75 Bob : 78
Eve : 92
```

8. nl command : number each line



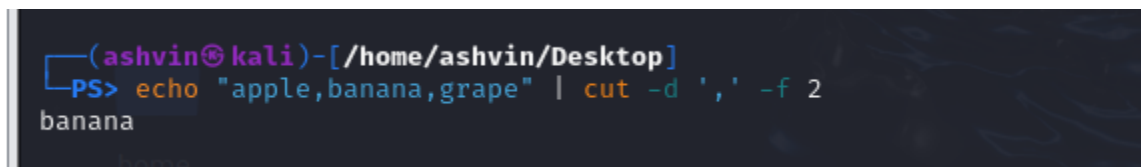
```
(ashvin@kali)-[/home/ashvin/Desktop]
PS> nl file2
1 Alice : 90
2 Bob : 80 Bob : 85
3 Carol : 95
4 David : 88
5 Bob : 75 Bob : 78
6 Even: 92
```

9.cut command :



```
(ashvin@kali)-[/home/ashvin/Desktop]
PS> cut -b 1-5 file1
Many
Linux
Linux
it is
Andro
Linux
it's e System
bash
Cloud
Many
Linux
Cloud
Linux
it su
fome

(ashvin@kali)-[/home/ashvin/Desktop]
PS> cut -c 7-11 file1
istor
is an
power
highl
d in
suppo
ustom
s Lin
run
istor
manag
run
```



```
(ashvin@kali)-[/home/ashvin/Desktop]
PS> echo "apple,banana,grape" | cut -d ',' -f 2
banana
```

File1

Many distros are available.

Linux is an open-source.

Linux powers web servers

it is highly secure.

Android is Linux-based OS.

Linux supports multiple users.

It's customizable and stable.

bash is Linux's shell.

Clouds run on Linux.

Many distros are available.

Linux manages system processes.

Clouds run on Linux.

Linux uses package managers.

It supports virtualization tools.

File2

Alice : 90

Bob : 85 Bob : 80

Carol : 95

David: 88

Bob: 75 Bob : 78

Eve: 92