

Sowmya.R
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Assignment-4

Filter commands

1. Create a file containing the following data. Use tabs to separate the fields.

1234 Juan 14.25

4321 George 21.11

6781 Anna 16.77

1451 Ben 21.77

2277 Tuan 18.77

```
sowmya@sowmya-VirtualBox:~$ cat>sample.txt
```

```
1234 Juan 14.25
```

```
4321 George 21.11
```

```
6781 Anna 16.77
```

```
1451 Ben 21.77
```

```
2277 Tuan 18.77
```

```
^Z
```

```
[1]+ Stopped cat > sample.txt
```

2. Sort the file according to the first field

```
sowmya@sowmya-VirtualBox:~$ sort -k1 sample
```

```
1234 Juan 14.25
```

```
1451 Ben 21.77
```

```
2277 Tuan 18.77
```

```
4321 George 21.11
```

```
6781 Anna 16.77
```

3. Swap fields 2 and 3 store it in another file.

```
sowmya@sowmya-VirtualBox:~$ paste <(cut -f3 sample) <(cut -f2 sample)>new.txt
```

```
sowmya@sowmya-VirtualBox:~$ cat new.txt
```

14.25 Juan

21.11 George

16.77 Anna

21.77 Ben

18.77 Tuan

4. Encrypt this file line by line(the last line becomes the first, the line before the last line becomes the second and so on) , store the result in another file

```
sowmya@sowmya-VirtualBox:~$ tac new.txt >reverse.txt
```

```
sowmya@sowmya-VirtualBox:~$ cat reverse.txt
```

18.77 Tuan

21.77 Ben

16.77 Anna

21.11 George

14.25 Juan

5. Copy the last line of the above file into another file.

```
sowmya@sowmya-VirtualBox:~$ cat reverse.txt|tail -1>lastline.txt
```

```
sowmya@sowmya-VirtualBox:~$ cat lastline.txt
```

14.25 Juan

6. Create the following file. (Need not type the headings)

ID Hourly Rate Hours Worked

1420 12.56 45

3456 14.56 22

2341 45.12 34

1122 23.56 28

1443 23.23 19

2351 67.90 56

8001 7.00 14

```
sowmya@sowmya-VirtualBox:~$ cat>workers.txt
```

1420 12.56 45

3456 14.56 22

2341 45.12 34

1122 23.56 28

1443 23.23 19

2351 67.90 56

8001 7.00 14

^Z

[2]+ Stopped cat > workers.txt

(a). Print the number of workers

sowmya@sowmya-VirtualBox:~\$ wc -l workers.txt

7 workers.txt

(b). Show the worker who is paid the highest hourly rate.

sowmya@sowmya-VirtualBox:~\$ sort -n -r -k2 workers.txt|head -1|cut -f1|more

2351

(c). Sort the file based on ID

sowmya@sowmya-VirtualBox:~\$ sort -n -k1 workers.txt

1122 23.56 28

1420 12.56 45

1443 23.23 19

2341 45.12 34

2351 67.90 56

3456 14.56 22

8001 7.00 14

7. Write a command to change all lowercase letters in a file to uppercase

sowmya@sowmya-VirtualBox:~\$ cat sample|tr '[:lower:]' '[:upper:]'

1234 JUAN 14.25

4321 GEORGE 21.11

6781 ANNA 16.77

1451 BEN 21.77

2277 TUAN 18.77

Regular expression

1. Write regular expression for the following and demonstrate each with example contents in a file

```
root@wpl24:~# cat>file.txt
```

apple

bat

cry

dry

fry

mat

more

try

^Z

```
[1]+ Stopped          cat > file.txt
```

a. Words containing vowels

```
root@wpl24:~# grep -E [aeiou] file.txt
```

apple

bat

mat

more

b. Words containing consonants

```
root@wpl24:~# grep -E "[^aeiou]" file.txt
```

apple

bat

cry

dry

fry

mat

more

try

2. Write regular expression for the following and demonstrate each with example contents in a file

```
root@wpl24:~# cat>ex.txt
```

a1

12s

1s

apple256

mn98

m3333

^Z

[2]+ Stopped cat > ex.txt

a. Variable name starts with letter followed by any number of letter or digits

root@wpl24:~# grep "^[a-zA-Z][0-9 A-Z a-z]*" ex.txt

a1

apple256

mn98

m3333

b. List all files in the default directory that others can read or write

root@wpl24:~# ls -l|grep "\{7\}rw"

```
drw-rw-rw- 2 root root 4096 Jul 18 09:17 S
-rw-rw-rw- 1 root root 10 Jul 18 08:52 sample.txt
```

```
drwxrwxrwx 2 root root 4096 Jul 18 08:36 SSN
drwxrwxrwx 2 root root 4096 Jul 18 09:22 SSN1
drwxrwxrwx 2 root root 4096 Jul 18 09:22 SSN2
drwxrwxrwx 2 root root 4096 Jul 18 09:22 SSN3
-rw-rw-rw- 1 root root 0 Jul 18 09:17 s.txt
```

3. Write a regular expression that matches the emails of the form userid@domain.edu, where userid starts with character followed by zero or more character | digit and the domain is one or more characters.

root@wpl24:~# cat>mail.txt

123@gmail.com

sowmya@yahoo.edu

1So@gmail.edu

Ram234@geek.edu

^Z

[3]+ Stopped cat > mail.txt

root@wpl24:~# grep "^[a-zA-Z][a-zA-Z0-9]*@[a-zA-Z]*.edu" mail.txt

sowmya@yahoo.edu

[Ram234@geek.edu](#)

4. Write a command that selects lines from file1 that have exactly 3 characters

root@wpl24:~# cat>file1.txt

cat

bat

rat

is

am

katty

dange

cliffhanger

ri

^Z

[2]+ Stopped cat > ex.txt

root@wpl24:~# grep "^...\$" file1.txt

cat

bat

rat

5. Write a command that selects lines from file1 that have at least 3 characters

root@wpl24:~# grep "^.{3,}" file1.txt

cat

bat

rat

fatty

katty

dange

cliffhanger

6. Write a command that selects lines from file1 that have 3 or fewer characters

root@wpl24:~# grep "^.{0,3}\$" file1.txt

cat

bat

rat

is

am

ri

7. Counting the number of blank lines

```
root@wpl24:~# cat>>file1.txt
```

hey

end

^Z

```
[5]+ Stopped          cat >> file1.txt
```

```
root@wpl24:~# grep -c "^$" file1.txt
```

2

8. Write a command to retrieve lines that starts with capital letter

```
root@wpl24:~# cat>lines.txt
```

Hey there!

You don't know who I am but I know you.

I first say you in July.

july was a nice month, july Embers.

signing off

^Z

```
[6]+ Stopped          cat > lines.txt
```

```
root@wpl24:~# grep "^[A-Z]*" lines.txt
```

Hey there!

You don't know who I am but I know you.

I first say you in July.

9. Write a command to list the lines containing words that begin with capital letter.

```
root@wpl24:~# grep "\<[A-Z]*" lines.txt
```

Hey there!

You don't know who I am but I know you.

I first say you in July.

july was a nice month, july Embers.

10. Write command to the list the lines that end with a period from the file

```
root@wpl24:~# grep "\.$" lines.txt
```

You don't know who I am but I know you.

I first say you in July.

july was a nice month, july Embers.

11. Write a command to print the lines that has the pattern "July" in all the files in a particular directory?

```
root@wpl24:~# mkdir line
```

```
root@wpl24:~# cp line*.txt line
```

```
root@wpl24:~# cd line
```

```
root@wpl24:~/line# grep -r "July"
```

```
lines.txt:I first say you in July.
```

```
lines1.txt:July was a nice month.
```

12. Write a command to print the lines that has the word "July" while ignoring the case.

```
root@wpl24:~# grep -i "July" lines.txt
```

I first say you in July.

july was a nice month, july Embers.

13. Write a Unix command to display the lines in a file that do not contain the word "July"?

```
root@wpl24:~# grep -v "July" lines.txt
```

Hey there!

You don't know who I am but I know you.

july was a nice month, july Embers.

signing off

14. Are the following commands equivalent? Briefly explain `grep "^a-z" foo` `grep -v "^a-z" foo`

```
sowmya@sowmya-VirtualBox:~$ cat>foo
hey there
I am fine
```

```
how are you
See you
^Z
[1]+  Stopped                  cat > foo
```

```
sowmya@sowmya-VirtualBox:~$ grep "^a-z" foo
I am fine
See you
sowmya@sowmya-VirtualBox:~$ grep -v "^a-z" foo
I am fine
```

```
See you
```

Both the commands will match any line in the file “foo” that **does not** begin with a lowercase letter. But the -v option displays blank lines too.

15. Write a command to display all the lines in a given file that ends with " ; " or " ." character.

```
root@wpl24:~# cat>>lines.txt
```

```
hello;
```

```
^Z
```

```
[9]+  Stopped                  cat >> lines.txt
```

```
root@wpl24:~# grep -e "\.$" -e ";$" lines.txt
```

```
You don't know who I am but I know you.
```

```
I first say you in July.
```

```
july was a nice month, july Embers.
```

```
hello;
```
