

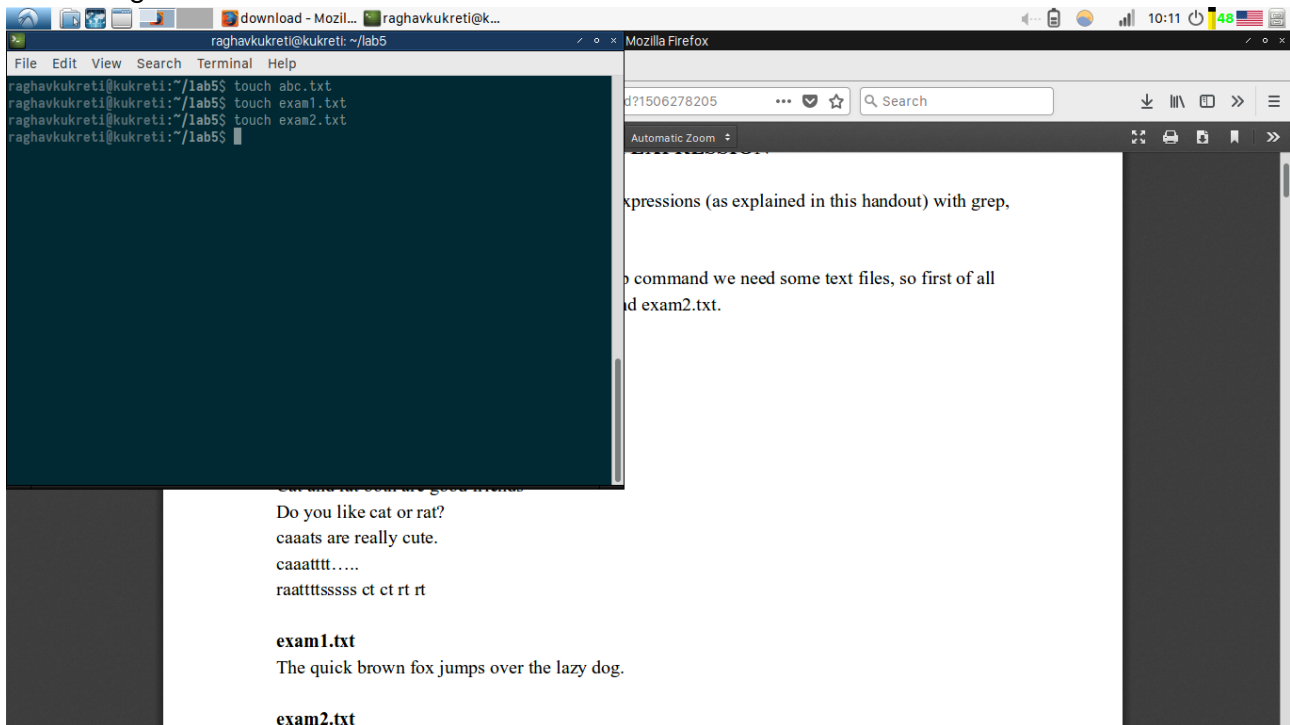
# Laboratory Report

## Regular Expressions using grep, sed and awk

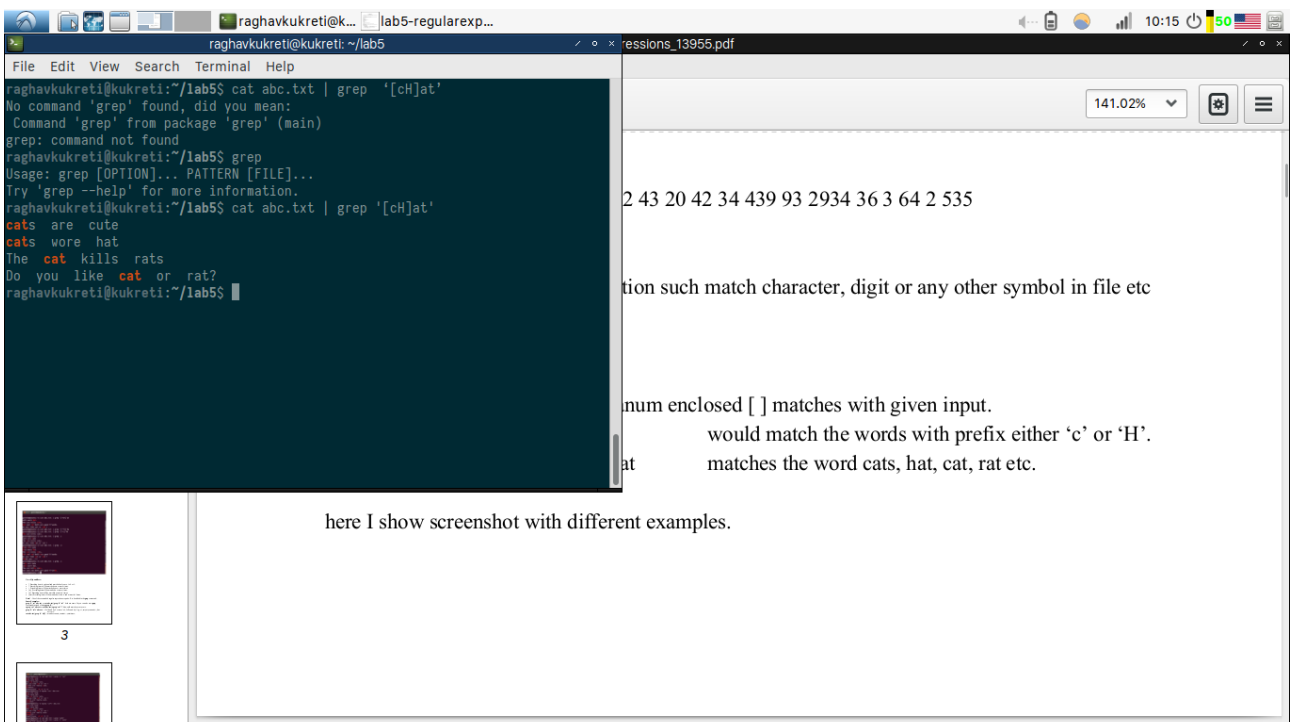
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Group : B1

**grep** is a terminal command which allows us to do some sort of operation to match characters, digits, patterns, etc.

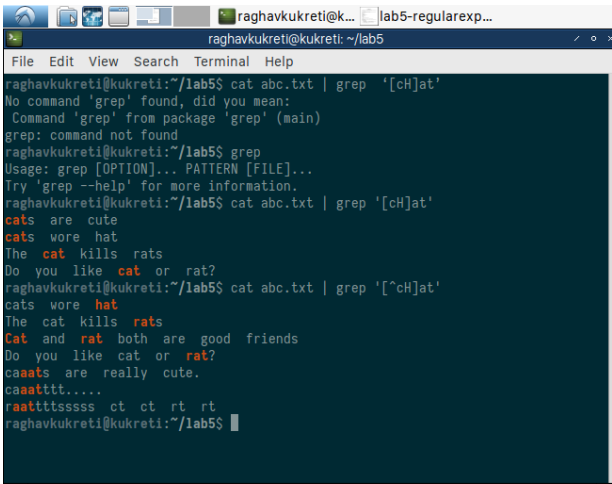
### 1. Creating all three files.



### 2. Matching words with prefix either 'c' or 'H'



### 3. Using '^' operator to match characters not in the list



raghavkukreti@kukreti: ~/lab5

```
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep '[cH]at'
No command 'grep' found, did you mean:
  Command 'grep' from package 'grep' (main)
grep: command not found
raghavkukreti@kukreti:~/lab5$ grep
Usage: grep [OPTION]... PATTERN [FILE]...
Try 'grep --help' for more information.
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep '[cH]at'
cats are cute
cats wore hat
The cat kills rats
Do you like cat or rat?
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep '^[cH]at'
cats wore hat
The cat kills rats
Cat and rat both are good friends
Do you like cat or rat?
caaats are really cute.
caaattttttt....
raattttttssss ct ct rt rt
raghavkukreti@kukreti:~/lab5$
```

any character not in the list.  
matches hat,chat and hats.  
acket here  
two characters separated by a hyphen) - matches any single  
e two characters. Period (.) represents any single character.

it will matches the any string in which any single character appear before character 'a'.

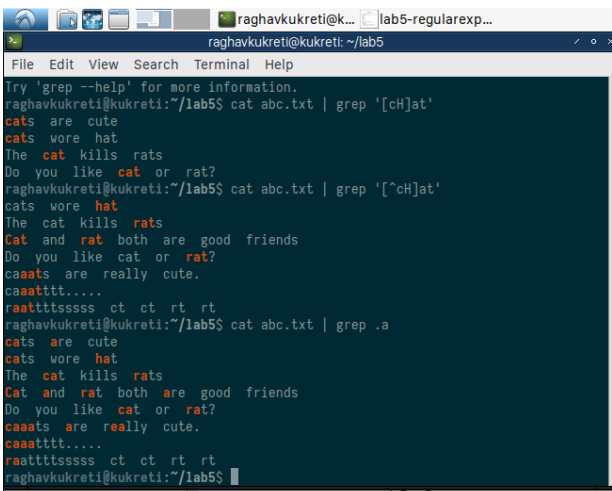
**Some examples :**

cat abc.txt | grep 'c[aeiou]t' : would match all words starting with 'c', followed by a lower case vowel, any letter and ending with 't' like cat, cut.

cat abc.txt | grep '[^a-zA-Z]' : would match any character other than a letter such as any symbol/digit etc (eg: -+32?^{}.,!,543)

cat abc.txt | grep '[2-5]' : what is the output pattern ? Think about it !

### 4. Matching strings in which a single character appears before a.



raghavkukreti@kukreti: ~/lab5

```
Try 'grep --help' for more information.
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep '[cH]at'
cats are cute
cats wore hat
The cat kills rats
Do you like cat or rat?
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep '^[cH]at'
cats wore hat
The cat kills rats
Cat and rat both are good friends
Do you like cat or rat?
caaats are really cute.
caaattttttt....
raattttttssss ct ct rt rt
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep .a
cats are cute
cats wore hat
The cat kills rats
Cat and rat both are good friends
Do you like cat or rat?
caaats are really cute.
caaattttttt....
raattttttssss ct ct rt rt
raghavkukreti@kukreti:~/lab5$
```

acket here  
two characters separated by a hyphen) - matches any single  
e two characters. Period (.) represents any single character.

h any single character appear before character 'a'.

atch all words starting with 'c', followed by a lower case vowel,  
r and ending with 't' like cat, cut.  
match any character other than a letter such as any symbol/digit  
etc (eg: -+32?^{}.,!,543)

cat abc.txt | grep '[2-5]' : what is the output pattern ? Think about it !

## 5. Using quantifiers to match strings

raghavkukreti@kukreti: ~/lab5

```
File Edit View Search Terminal Help
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep -E 'ca?'
cats are cute
cats wore hat
The cat kills rats
Do you like cat or rat?
caats are really cute.
caaat...
raatttssss ct ct rt rt
raghavkukreti@kukreti:~/lab5$
```

atched only once. i.e 0 or 1.  
zero or more times.  
one or more times.  
d n or more times.  
d exactly 'n' times.  
hed at least 'n' and at most 'm' times.

expressions require -E to be added in the **grep** command .

**grep -E 'ca?'** both are same. Or you can also use **egrep**

**rep 'ca?'** This would match cat, cute, cats.  
y 0 or more 'a' s, followed by 't'. eg: ct, cat,cats, caaat... , but

**cat abc.txt | grep -E 'a{2}':** matches caats, caaat... ,raatttssss.

raghavkukreti@kukreti: ~/lab5

```
File Edit View Search Terminal Help
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep -E 'a{2}'
caats are really cute.
caaat...
raatttssss ct ct rt rt
raghavkukreti@kukreti:~/lab5$
```

Use

Not

Some

gre

con

egr

gre

cat

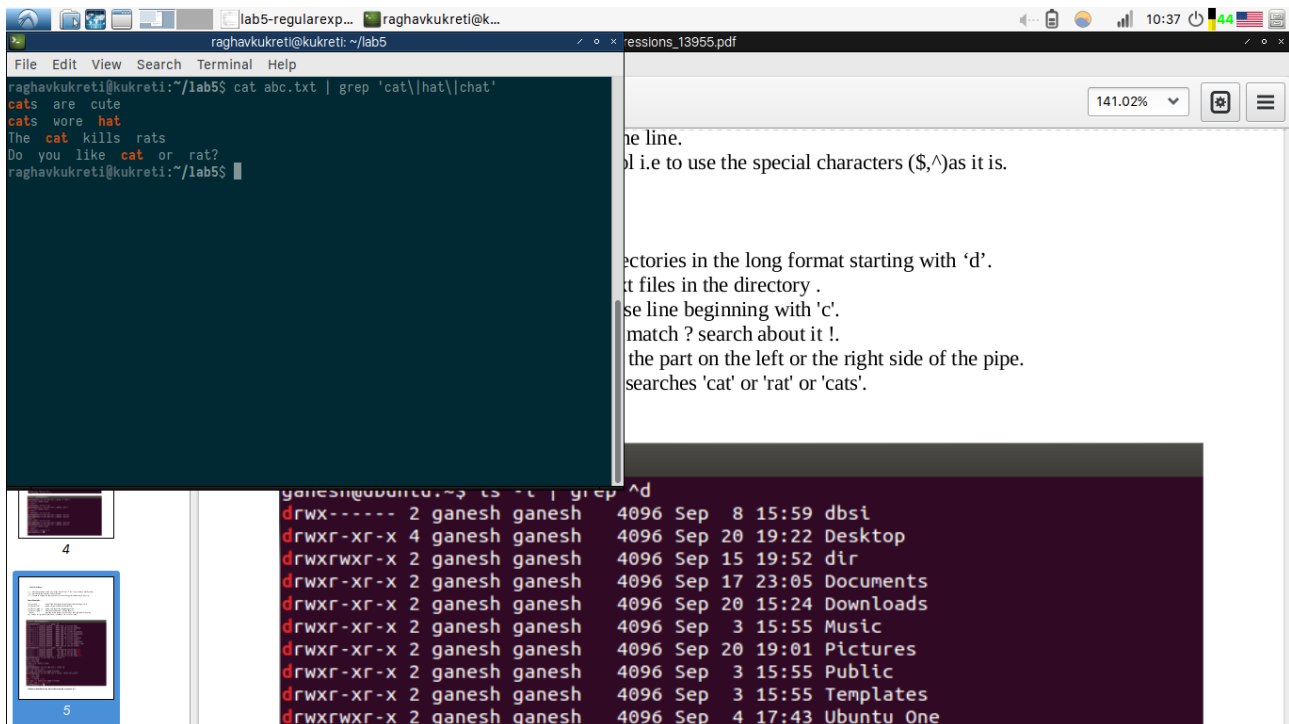
the **grep** command .

can also use **egrep**

cats.

cat,cats, caaat... , but

## 6. Using anchors



raghavkukreti@kukreti: ~/lab5

```
raghavkukreti@kukreti:~/lab5$ cat abc.txt | grep 'cat\|hat\|chat'
```

cats are cute  
cats wore hat  
The cat kills rats  
Do you like cat or rat?  
raghavkukreti@kukreti:~/lab5\$

the line.  
i.e to use the special characters (\$,^ )as it is.

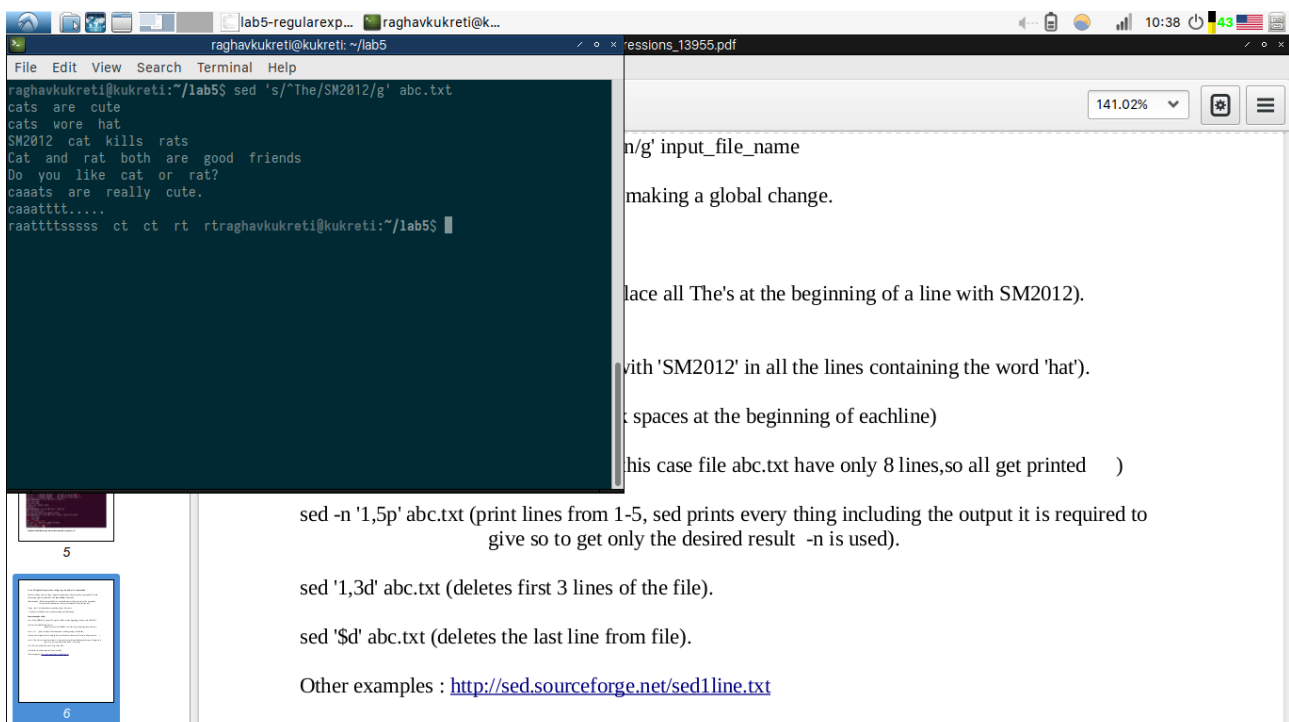
directories in the long format starting with 'd'.  
t files in the directory .  
se line beginning with 'c'.  
match ? search about it !.  
the part on the left or the right side of the pipe.  
searches 'cat' or 'rat' or 'cats'.

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drwxr-xr-x 2 ganesh ganesh 4096 Sep 8 15:59 dbst  
drwxr-xr-x 4 ganesh ganesh 4096 Sep 20 19:22 Desktop  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 15 19:52 dir  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 17 23:05 Documents  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 20 15:24 Downloads  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 3 15:55 Music  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 20 19:01 Pictures  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 3 15:55 Public  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 3 15:55 Templates  
drwxr-xr-x 2 ganesh ganesh 4096 Sep 4 17:43 Ubuntu One

## 7. Using sed to match strings



raghavkukreti@kukreti: ~/lab5

```
raghavkukreti@kukreti:~/lab5$ sed 's/^The/SM2012/g' abc.txt
```

cats are cute  
cats wore hat  
SM2012 cat kills rats  
Cat and rat both are good friends  
Do you like cat or rat?  
caaatstt...  
raattttsssss ct ct rt r

raghavkukreti@kukreti:~/lab5\$

n/g' input\_file\_name

making a global change.

place all The's at the beginning of a line with SM2012).

with 'SM2012' in all the lines containing the word 'hat').

c spaces at the beginning of eachline)

this case file abc.txt have only 8 lines,so all get printed )

sed -n '1,5p' abc.txt (print lines from 1-5, sed prints every thing including the output it is required to give so to get only the desired result -n is used).

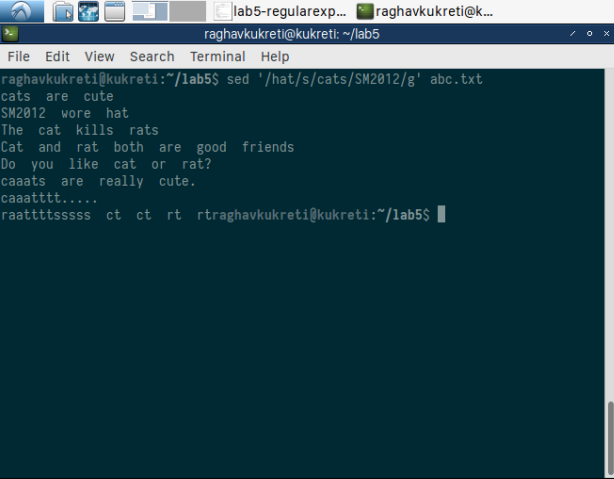
sed '1,3d' abc.txt (deletes first 3 lines of the file).

sed '\$d' abc.txt (deletes the last line from file).

Other examples : <http://sed.sourceforge.net/sed1line.txt>

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File Edit View Search Terminal Help

```

raghavkukreti@kukreti:~/lab5$ sed '/hat/s/cats/SM2012/g' abc.txt
cats are cute
SM2012 wore hat
The cat kills rats
Cat and rat both are good friends
Do you like cat or rat?
caaats are really cute.
caaatttt.....
raattttsssss ct ct rt rtraghavkukreti@kukreti:~/lab5$

```

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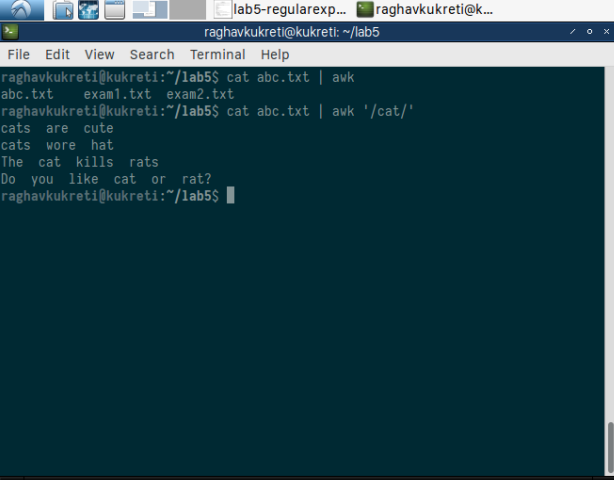
raghavkukreti@kukreti:~/lab5\$ sed -n '1,5p' abc.txt (print lines from 1-5, sed prints every thing including the output it is required to give so to get only the desired result -n is used).

sed '1,3d' abc.txt (deletes first 3 lines of the file).

sed '\$d' abc.txt (deletes the last line from file).

Other examples : <http://sed.sourceforge.net/sed1line.txt>

## 10. Using awk to match string patterns



File Edit View Search Terminal Help

```

raghavkukreti@kukreti:~/lab5$ cat abc.txt | awk
abc.txt exam1.txt exam2.txt
raghavkukreti@kukreti:~/lab5$ cat abc.txt | awk '/cat/'
cats are cute
cats wore hat
The cat kills rats
Do you like cat or rat?
raghavkukreti@kukreti:~/lab5$

```

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by white spaces, denoted by \$1, \$2 soon. \$0 denotes

t' in it.

r awk '/cat/' abc.txt

eg : To the print lines with more than 20 characters :

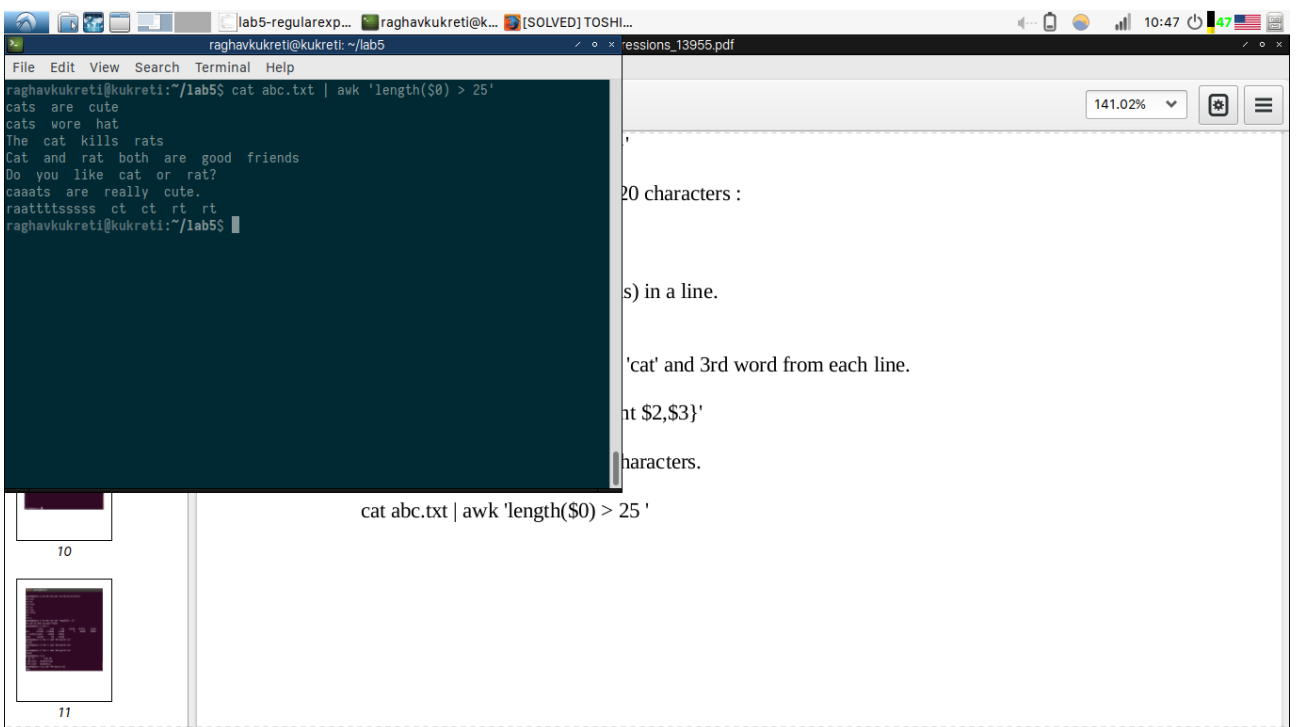
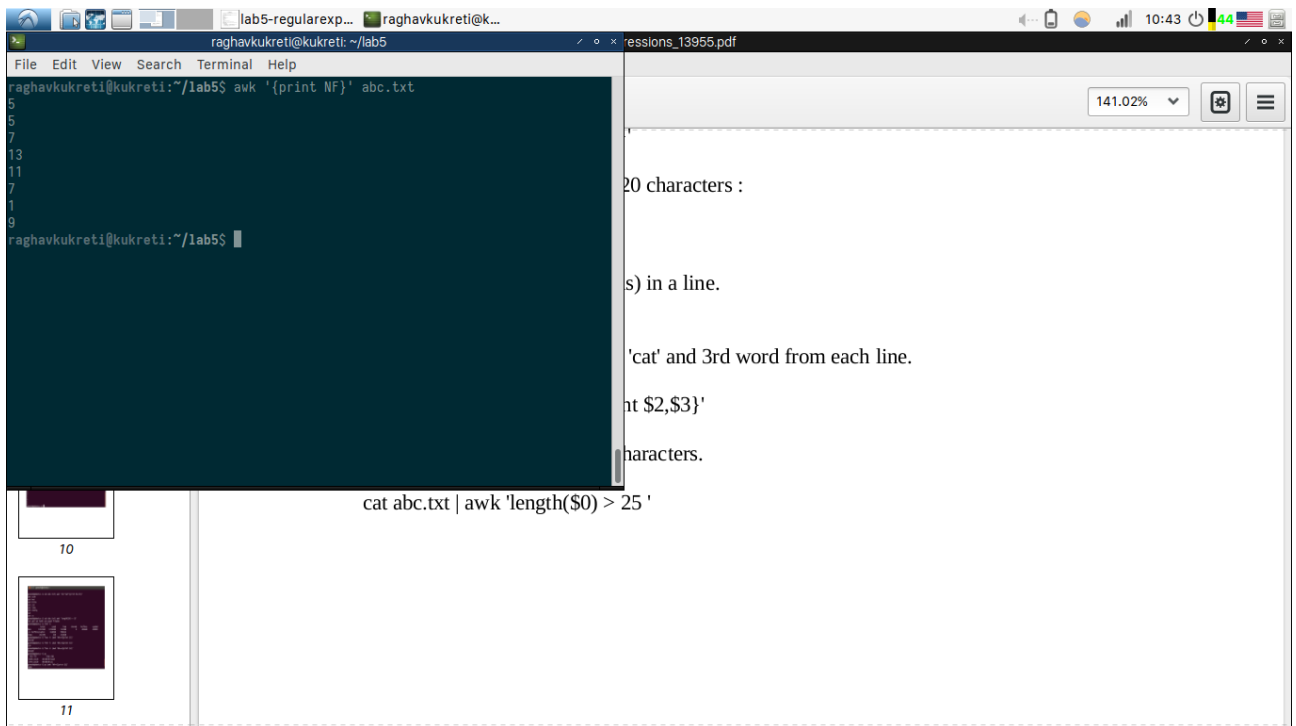
awk 'length(\$0) > 20' abc.txt

eg : To find the number of words(fields) in a line.

awk '{print NF}' abc.txt

eg : Print the word assigned to \$2 i.e. 'cat' and 3rd word from each line.

cat abc.txt | awk 'S2="cat"{print \$2,\$3}'



lab5-regex...raghavkukreti@k...[SOLVED] TOSHI...

raghavkukreti@kukreti: ~/lab5

File Edit View Search Terminal Help

raghavkukreti@kukreti:~/lab5\$ cat abc.txt | awk 'length(\$0) > 25'

cats are cute

cats wore hat

The cat kills rats

Cat and rat both are good friends

Do you like cat or rat?

caaats are really cute.

raattttsssss ct ct rt rt

raghavkukreti@kukreti:~/lab5\$ cat abc.txt | awk 'S2 = "cat"{print \$2,\$3}'

are

wore

cat

and

you

are

ct

raghavkukreti@kukreti:~/lab5\$

essions\_13955.pdf

141.02%

20 characters :

s) in a line.

'cat' and 3rd word from each line.

nt \$2,\$3}'

haracters.

25 '

10

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