Assignment - 4

Filter commands and Regular expressions

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

2. Sort the file according to the first field

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

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

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

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

(a). Print the number of workers

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

(c). Sort the file based on ID

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

root@wpl10:~# cat>Problem.txt

1234 Juan 14.25

4321 George 21.11

6781 Anna 16.77

1451 Ben 21.77

2277 Tuan 18.77

root@wpl10:~# sort -k 1n Problem.txt> Temp.txt

root@wpl10:~# cp Temp.txt Problem.txt

root@wpl10:~# cat Problem.txt

1234 Juan 14.25

1451 Ben 21.77

2277 Tuan 18.77

4321 George 21.11

6781 Anna 16.77

root@wpl10:~# cut -f1 Problem.txt>Col.txt

root@wpl10:~# cut -f2 Problem.txt>Col2.txt

root@wpl10:~# cut -f3 Problem.txt>Col3.txt

root@wpl10:~# paste Col.txt Col3.txt Col2.txt > Problem.txt

root@wpl10:~# cat Problem.txt

1234 14.25 Juan

1451 21.77 Ben

2277 18.77 Tuan

4321 21.11 George

6781 16.77 Anna

root@wpl10:~# tac Problem.txt > Encrypted.txt

root@wpl10:~# cat Encrypted.txt

6781 16.77 Anna

4321 21.11 George

2277 18.77 Tuan

1451 21.77 Ben

1234 14.25 Juan

root@wpl10:~# tail -1 Encrypted.txt > LastLine.txt

root@wpl10:~# cat LastLine.txt

1234 14.25 Juan

root@wpl10:~# cat>Hours.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

root@wpl10:~# wc -l Hours.txt

7 Hours.txt

root@wpl10:~# sort -k 2nr Hours.txt|head -1

2351 67.90 56

root@wpl10:~# sort -k 1n Hours.txt > Temp.txt

root@wpl10:~# cp Temp.txt Hours.txt

root@wpl10:~# cat Hours.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

root@wpl10:~# cat Problem.txt | tr "[:lower:]" "[:upper:]"

1234 14.25 JUAN

1451 21.77 BEN

2277 18.77 TUAN

4321 21.11 GEORGE

6781 16.77 ANNA

Regular expression

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

in a file

a.Words containing vowels

b.Words containing consonants

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

a file

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

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

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.

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

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

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

7.Counting the number of blank lines

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

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

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

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

directory?

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

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

14.Are the following commands equivalent? Briefly explain

grep “^[^a-z]” foo

grep –v “^[a-z]” foo

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

shivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ cat > RegExp.txt

rhythm

slp

gth

cmdy

satya

kinky fag

shivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ grshivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ grep "[aeiou]" RegExp.txt

satya

kinky fag

shivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ grep "[^aeiou]" RegExp.txt

rhythm

slp

gth

cmdy

satya

kinky fag

shivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ grep "[a-z A-Z][a-z A-Z 0-9]\*" RegExp.txt

rhythm

slp

gth

cmdy

satya

kinky fag

shivanirudh@shiva-ideapad:~$ ls -l

total 52

drwxr-xr-x 6 shivanirudh shivanirudh 4096 Jul 27 22:13 Desktop

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Jul 18 22:01 Documents

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Aug 5 12:49 Downloads

-rw-r--r-- 1 shivanirudh shivanirudh 8980 Jul 18 16:22 examples.desktop

drwxr-xr-x 3 shivanirudh shivanirudh 4096 Jul 27 22:04 home

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Jul 18 22:01 Music

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Aug 1 22:07 Pictures

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Jul 18 22:01 Public

drwxr-xr-x 3 shivanirudh shivanirudh 4096 Jul 27 20:42 snap

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Jul 18 22:01 Templates

drwxr-xr-x 2 shivanirudh shivanirudh 4096 Jul 18 22:01 Videos

shivanirudh@shiva-ideapad:~$ ls -l | grep ".\{7\}r--\|.\{7\}-w-\|.\{7\}rw-"

-rw-r--r-- 1 shivanirudh shivanirudh 8980 Jul 18 16:22 examples.desktop

shivanirudh@shiva-ideapad:~$ cat > Email.txt

abc@xyz.com

xyz@abc.in

[123@456.edu](mailto:123@456.edu)

shivanirudh@shiva-ideapad:~$ grep "[a-z A-Z][a-z A-Z 0-9]\*@[a-z A-Z]." Email.txt

abc@xyz.com

[xyz@abc.in](mailto:xyz@abc.in)

shivanirudh@shiva-ideapad:~$ cat>file1

123

45678

as

asdfg

asd

dfg

a

ASD

WERT

QRy

agggg

asdfghjjk

zxcv

shivanirudh@shiva-ideapad:~$ grep -n "^$" file1| wc -l

3

shivanirudh@shiva-ideapad:~$ grep "^.\{3\}$" file1

123

asd

dfg

ASD

Qry

shivanirudh@shiva-ideapad:~$ grep ".\{3,\}" file1

123

45678

asdfg

asd

dfg

ASD

WERT

QRy

agggg

asdfghjjk

zxcv

shivanirudh@shiva-ideapad:~$ grep "^.\{,3\}$" file1

123

as

asd

dfg

a

ASD

QRy

shivanirudh@shiva-ideapad:~$ grep -n "^$" file1| wc -l

3

shivanirudh@shiva-ideapad:~$ grep "^[A-Z]" file1

ASD

WERT

QRy

shivanirudh@shiva-ideapad:~$ grep "^[A-Z]" file1

ASD

WERT

QRy

shivanirudh@shiva-ideapad:~$ grep "\.\,$" file1

shivanirudh@shiva-ideapad:~/Desktop$ cd Desktop/UNIX/FiltersRegularExpressions/

shivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ grep "July" \*

shivanirudh@shiva-ideapad:~/Desktop/UNIX/FiltersRegularExpressions$ grep -i "July" \*

shivanirudh@shiva-ideapad:~$ grep -v "July" file1

123

45678

as

asdfg

asd

dfg

a

ASD

WERT

QRy

agggg

asdfghjjk

zxcv

Yes, the given commands are equivalent.

grep “^[^a-z]” foo prints all lines that do not begin with a lower case character denoted by the exclusion operator

grep –v “^[a-z]” foo prints all lines that do not match with the given substring, namely, starteing with lower case alphabets

shivanirudh@shiva-ideapad:~$ grep "\.\;$" file1