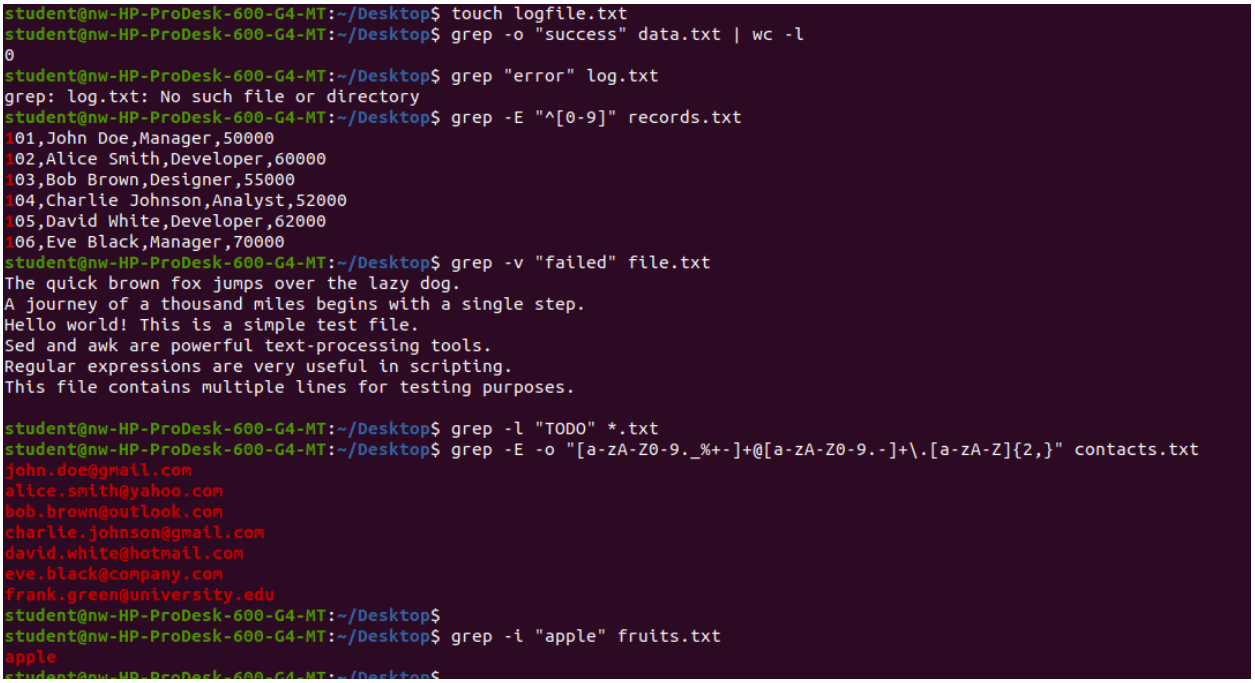
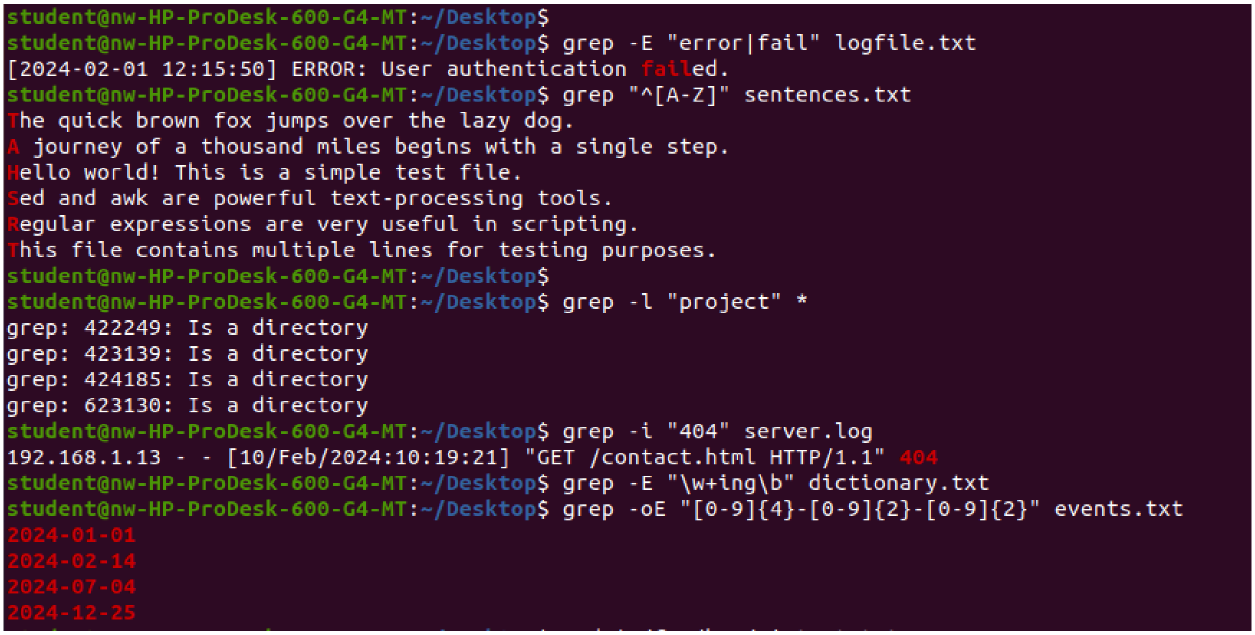
Unix shell and scripting lab
Rollno . 422249

Using grep
1. Find all lines containing the word &quot;error&quot; in a log file (log.txt).
2. Count the occurrences of the word &quot;success&quot; in a file (data.txt).
3. Extract all lines from a file (records.txt) that start with a digit.
4. Display all lines in file.txt that do not contain the word &quot;failed&quot;.
5. Find all .txt files in the current directory that contain the word &quot;TODO&quot;.
6. Extract email addresses from contacts.txt (Hint: Use regex).
7. Find all occurrences of &quot;apple&quot;, case-insensitive, in fruits.txt.
8. Find all lines in logfile.txt that contain either &quot;error&quot; or &quot;fail&quot;.
9. Display lines that start with a capital letter from sentences.txt.
10. List only filenames from the current directory that contain the word
&quot;project&quot;.(you
can pick any word here that is being repeated)
11. Find lines in server.log that contain &quot;404&quot;, but ignore case sensitivity.
12. Find all words in dictionary.txt that end with &quot;ing&quot;.
13. Extract dates (YYYY-MM-DD format) from events.txt.



```
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ touch logfile.txt
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -o "success" data.txt | wc -l
0
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep "error" log.txt
grep: log.txt: No such file or directory
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -E "^[0-9]" records.txt
101,John Doe,Manager,50000
102,Alice Smith,Developer,60000
103,Bob Brown,Designer,55000
104,Charlie Johnson,Analyst,52000
105,David White,Developer,62000
106,Eve Black,Manager,70000
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -v "failed" file.txt
The quick brown fox jumps over the lazy dog.
A journey of a thousand miles begins with a single step.
Hello world! This is a simple test file.
Sed and awk are powerful text-processing tools.
Regular expressions are very useful in scripting.
This file contains multiple lines for testing purposes.

student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -l "TODO" *.txt
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -E -o "[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}" contacts.txt
john.doe@gmail.com
alice.smith@yahoo.com
bob.brown@outlook.com
charlie.johnson@gmail.com
david.white@hotmail.com
eve.black@company.com
frank.green@university.edu
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -i "apple" fruits.txt
apple
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
```

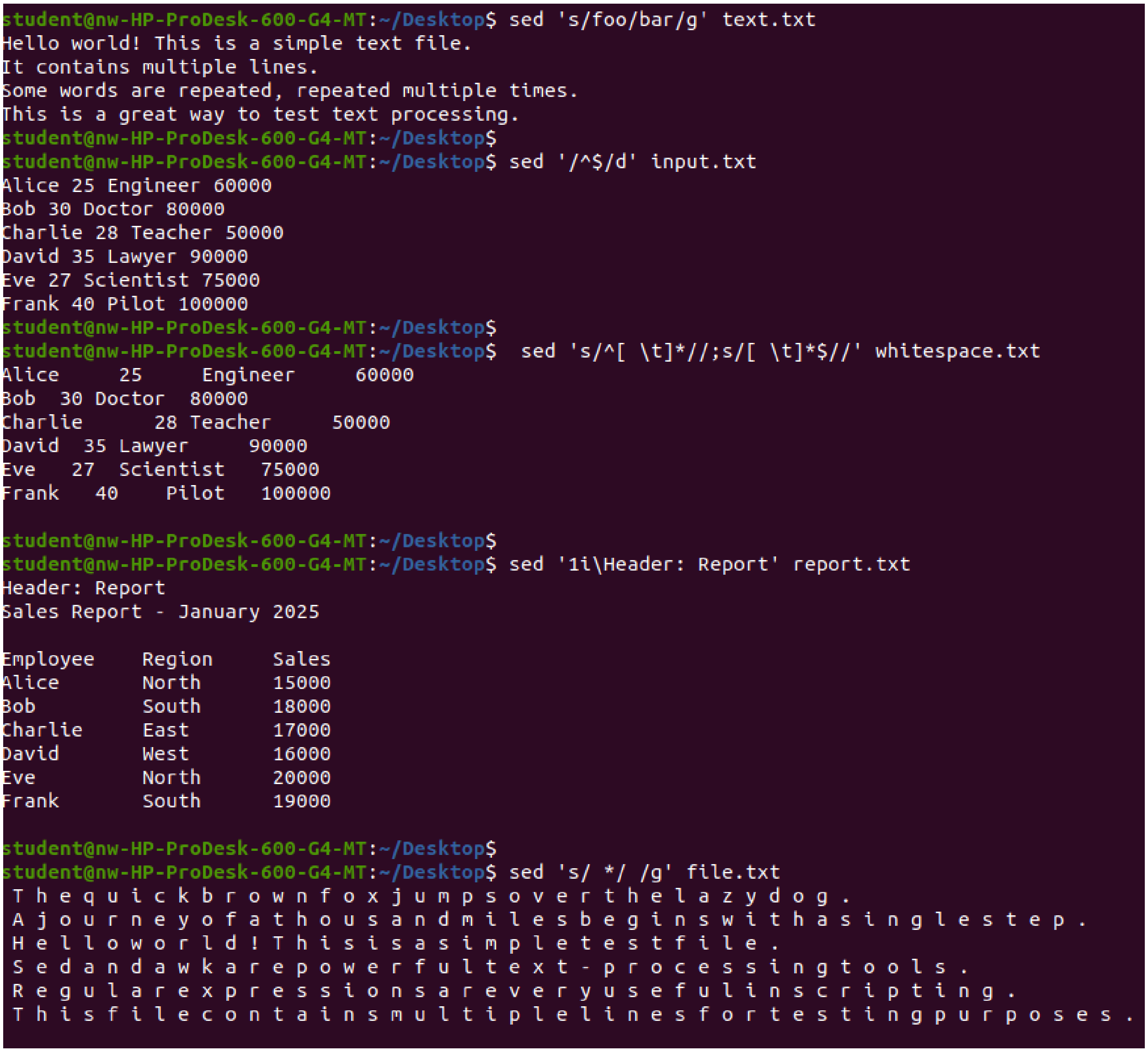


```
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -E "error|fail" logfile.txt
[2024-02-01 12:15:50] ERROR: User authentication failed.
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep "^[A-Z]" sentences.txt
The quick brown fox jumps over the lazy dog.
A journey of a thousand miles begins with a single step.
Hello world! This is a simple test file.
Sed and awk are powerful text-processing tools.
Regular expressions are very useful in scripting.
This file contains multiple lines for testing purposes.
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -l "project" *
grep: 422249: Is a directory
grep: 423139: Is a directory
grep: 424185: Is a directory
grep: 623130: Is a directory
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -i "404" server.log
192.168.1.13 - - [10/Feb/2024:10:19:21] "GET /contact.html HTTP/1.1" 404
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -E "\w+ing\b" dictionary.txt
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ grep -oE "[0-9]{4}-[0-9]{2}-[0-9]{2}" events.txt
2024-01-01
2024-02-14
2024-07-04
2024-12-25
```

Using sed

1. Replace all occurrences of &quot;foo&quot; with &quot;bar&quot; in text.txt.
2. Delete all blank lines from input.txt.
3. Remove leading and trailing spaces from each line in whitespace.txt.

4. Insert a new line with the text &quot;Header: Report&quot; at the beginning of report.txt.
5. Replace all instances of multiple spaces with a single space in file.txt.
6. Swap the first and second word in each line of swap.txt.
7. Remove everything after the first comma in each line of csv_data.txt.
8. Replace the word &quot;old&quot; with &quot;new&quot;, but only on lines that contain the word &quot;update&quot;.
9. Delete all occurrences of a number from text.txt.
10. Convert all lowercase letters to uppercase in names.txt.
11. Replace all dates in DD-MM-YYYY format with YYYY-MM-DD in dates.txt.
12. Add line numbers at the beginning of each line in story.txt.
13. Surround all words in title.txt with double quotes (&quot;).

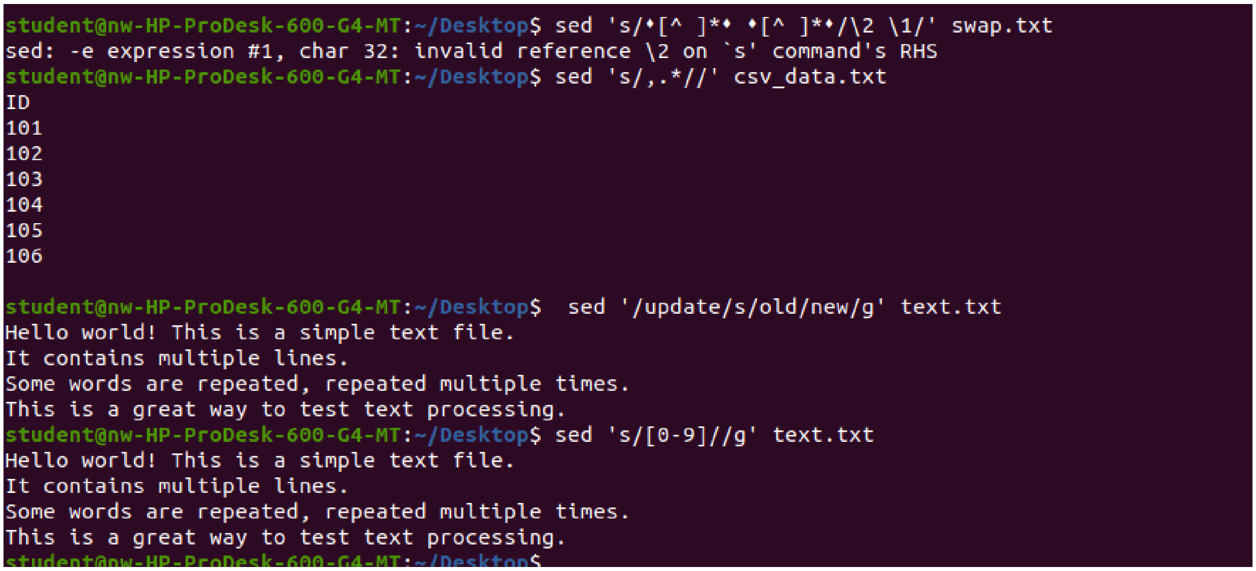


```
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed 's/foo/bar/g' text.txt
Hello world! This is a simple text file.
It contains multiple lines.
Some words are repeated, repeated multiple times.
This is a great way to test text processing.
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed '/^$/d' input.txt
Alice 25 Engineer 60000
Bob 30 Doctor 80000
Charlie 28 Teacher 50000
David 35 Lawyer 90000
Eve 27 Scientist 75000
Frank 40 Pilot 100000
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$  sed 's/^[ \t]*//;s/[ \t]*$//' whitespace.txt
Alice     25     Engineer     60000
Bob  30 Doctor  80000
Charlie      28 Teacher      50000
David  35 Lawyer     90000
Eve   27  Scientist   75000
Frank   40    Pilot   100000

student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed '1i\Header: Report' report.txt
Header: Report
Sales Report - January 2025

Employee    Region     Sales
Alice       North      15000
Bob         South      18000
Charlie     East       17000
David       West       16000
Eve         North      20000
Frank       South      19000

student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed 's/ */ /g' file.txt
 T h e q u i c k b r o w n f o x j u m p s o v e r t h e l a z y d o g .
 A j o u r n e y o f a t h o u s a n d m i l e s b e g i n s w i t h a s i n g l e s t e p .
 H e l l o w o r l d ! T h i s i s a s i m p l e t e s t f i l e .
 S e d a n d a w k a r e p o w e r f u l t e x t - p r o c e s s i n g t o o l s .
 R e g u l a r e x p r e s s i o n s a r e v e r y u s e f u l i n s c r i p t i n g .
 T h i s f i l e c o n t a i n s m u l t i p l e l i n e s f o r t e s t i n g p u r p o s e s .
```

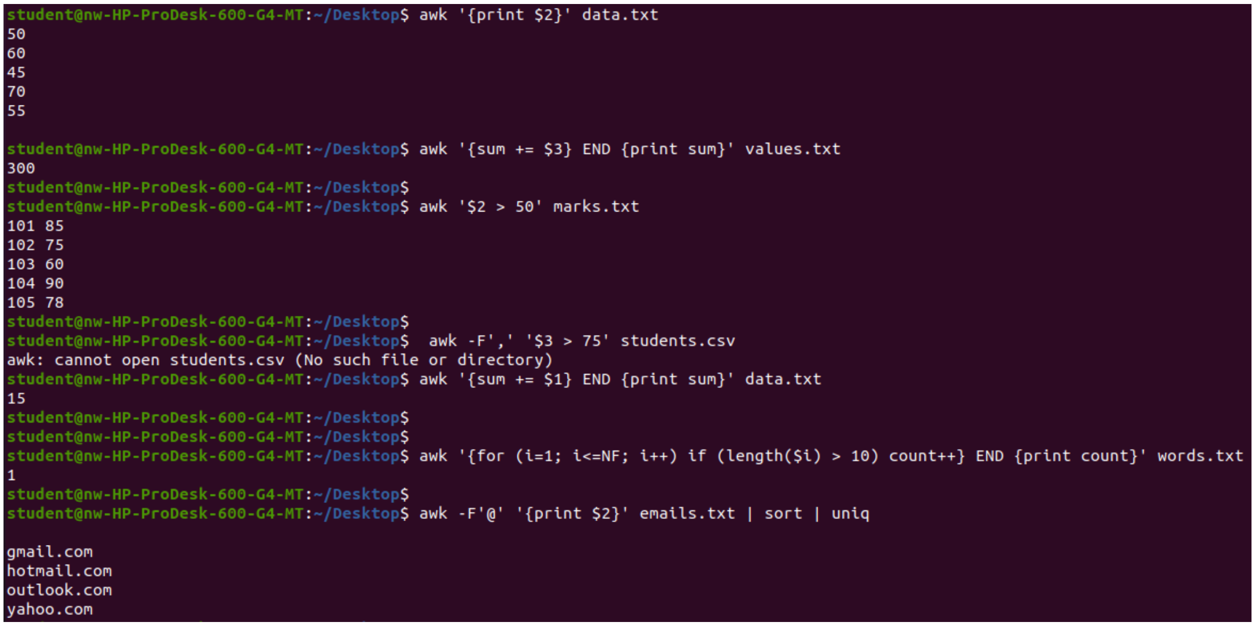


```
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed 's/•[^ ]*• •[^ ]*•/\2 \1/' swap.txt
sed: -e expression #1, char 32: invalid reference \2 on `s' command's RHS
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed 's/,.*//' csv_data.txt
ID
101
102
103
104
105
106

student@nw-HP-ProDesk-600-G4-MT:~/Desktop$  sed '/update/s/old/new/g' text.txt
Hello world! This is a simple text file.
It contains multiple lines.
Some words are repeated, repeated multiple times.
This is a great way to test text processing.
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ sed 's/[0-9]//g' text.txt
Hello world! This is a simple text file.
It contains multiple lines.
Some words are repeated, repeated multiple times.
This is a great way to test text processing.
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
```

Using awk

1. Print only the second column from a space-separated file (data.txt).
2. Sum the numbers in the third column of values.txt.
3. Count the number of lines in log.txt that contain the word &quot;warning&quot;.
4. Print all lines in marks.txt where the second column is greater than 50.
5. Print only the first and last columns from a tab-separated file (data.csv).
6. Calculate and print the average of the numbers in the second column of Numbers.csv.
7. Print all lines in students.csv where the third column (marks) is greater than 75.
8. Print the sum of all numbers in the first column of data.txt.
9. Display the last column of students.csv, where columns are separated by commas.
10. Print lines where the second column starts with the letter &quot;A&quot;.
11. Find the highest number in the third column of stats.txt.
12. Count how many lines contain a word longer than 10 characters in words.txt.
13. Extract domain names from an email list (emails.txt).



```
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ awk '{print $2}' data.txt
50
60
45
70
55

student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ awk '{sum += $3} END {print sum}' values.txt
300
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ awk '$2 > 50' marks.txt
101 85
102 75
103 60
104 90
105 78
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$  awk -F',' '$3 > 75' students.csv
awk: cannot open students.csv (No such file or directory)
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ awk '{sum += $1} END {print sum}' data.txt
15
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ awk '{for (i=1; i<=NF; i++) if (length($i) > 10) count++} END {print count}' words.txt
1
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$
student@nw-HP-ProDesk-600-G4-MT:~/Desktop$ awk -F'@' '{print $2}' emails.txt | sort | uniq

gmail.com
hotmail.com
outlook.com
yahoo.com
```