



Faculty of Engineering & Technology
Electrical & Computer Engineering Department

ENCS313

Report

Shell Script Project

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Code & Idea

First, We asked the user to enter if he wants Encryption(e) or Decryption(d), then we read the name of the text file (Encryption = plaintext, Decryption = ciphertext), the name will be checked if it is exists or not. If there is any character isn't space or an alphabet character, then it will be removed from the sentence, all the Capital characters in sentences will convert to small characters.

```
sed 's/[^a-zA-Z ]/''/g' line | tr '[A-Z]' '[a-z]'> temp
mv temp line # return contents of temp to line
max=0 # to store the max
for x in $(cat line) # $x moves between words
do
echo $x > word # put contents of variable x in word
counter=0 # to count char's frequency
for char1 in $(grep -o . word) # $char1 moves into all characters in word
do
for char2 in $(grep -o . line) # $char2 moves into all char.s without spaces
do
if [ "$char1" = "$char2" ] # when they be same..
then
counter=$(( counter + 1 )) # counter++
fi
done
done
echo "the sum of '$x' word characters frequencies: $counter"
counter=$(( counter%26 )) # mod 26
```

Calculate max value of sum frequencies, print it then shift the sentence.

```
if [ "$counter" -gt "$max" ] # check if the frequency greater than max
then
max=$counter # put in max
fi
done
echo "Shift Value: $max"
# put in $shifted the content of line with shifting the char.s
shifted=$(cat line | tr "${alpha:0:26}" "${alpha:${max}:26}")
if [ "$choose" = 'e' -o "$choose" = 'E' ]
then
```

Store the shifted sentence in a text file which the user will specify it after check that the name of file is correct.

```
if [ "$schoose" = 'e' -o "$schoose" = 'E' ]
then
echo "Please Input the name of the cipher text"
elif [ "$schoose" = 'd' -o "$schoose" = 'D' ]
then
echo "Please Input the name of the plain text"
fi
read Destfile
if [ ! -f "$Destfile" ] # Check if the file it is not ordinary
then
echo "Wrong Name!"
exit
fi
echo "Check $Destfile to see the output"
echo "$shifted" > $Destfile
fi
```

Examples

```
tareqshannak@Tareq:~$ cat plain.txt
Welcome to Linux Lab
tareqshannak@Tareq:~$ ./SimpleEncryption
Choose Between Encryption (e) & Decryption (d)
e
Please Input the name of the plain text
plain.txt
the sum of 'welcome' word characters frequencies: 12
the sum of 'to' word characters frequencies: 3
the sum of 'linux' word characters frequencies: 7
the sum of 'lab' word characters frequencies: 5
Shift Value: 12
Please Input the name of the cipher text
cipher.txt
Check cipher.txt to see the output
tareqshannak@Tareq:~$ cat cipher.txt
iqxoayq fa xuzgj xmn
tareqshannak@Tareq:~$ █
```

```
tareqshannak@Tareq:~$ cat cipher.txt
a$ b#b c.cc dd/dd
tareqshannak@Tareq:~$ ./SimpleEncryption
Choose Between Encryption (e) & Decryption (d)
d
Please Input the name of the cipher text
cipher.txt
the sum of 'a' word characters frequencies: 1
the sum of 'bb' word characters frequencies: 4
the sum of 'ccc' word characters frequencies: 9
the sum of 'dddd' word characters frequencies: 16
Shift Value: 16
Please Input the name of the plain text
plain.txt
Check plain.txt to see the output
tareqshannak@Tareq:~$ cat plain.txt
k ll mmm nnnn
tareqshannak@Tareq:~$
```

```
tareqshannak@Tareq:~$ ./SimpleEncryption
Choose Between Encryption (e) & Decryption (d)
f
Wrong Input!
tareqshannak@Tareq:~$ ./SimpleEncryption
Choose Between Encryption (e) & Decryption (d)
e
Please Input the name of the plain text
p
p not found!
tareqshannak@Tareq:~$ ./SimpleEncryption
Choose Between Encryption (e) & Decryption (d)
e
Please Input the name of the plain text
Documents
no ordinary file with this name!
tareqshannak@Tareq:~$
```