Lab Assignment - 7
(Operating Systems Practice)

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1)
a) Included the department name to narrow down the results.
b) Used a conditional "==" along with a "$" to find if the 4th column element is equal to 30000. If yes, then include them.
c) Used length function to find the length of the whole row and iterated from 2 to 6.
d) Begin and END are used to print the string before the code is executed and after it is done executing.
e) Used conditional and dollar.
f) iterated over 1 to 7 and added all the salaries and stored it in VAL and finally divided it with the last row number to get the average.

2) a) Used a for loop and rand
b) for loop with multiplication, input is taken from text file

1)

```
1  1 emp1 dep1 35000
2  2 emp2 dep2 35000
3  3 emp3 dep3 46000
4  4 emp4 dep1 40000
5  5 emp5 dep2 47000
6  6 emp6 dep3 30000
7  7 emp7 dep1 20000
```

a)

```
kuries@Beast:~/.../osp/lab7$ awk '/dep2/' fi.txt
2 emp2 dep2 35000
5 emp5 dep2 47000
kuries@Beast:~/.../osp/lab7$
```

b)

```
kuries@Beast:~/.../osp/lab7$ awk '$4==35000 {print NR" "$0}' fi.txt
1 1 emp1 dep1 35000
2 2 emp2 dep2 35000
kuries@Beast:~/.../osp/lab7$
```

c)

```
kuries@Beast:~/.../osp/lab7$ awk 'NR==2, NR==6 \
{if(length($0) > max) \
max=length($0)} \
END {print max}' fi.txt
17
kuries@Beast:~/.../osp/lab7$
```

d)

```
kuries@Beast:~/.../osp/lab7$ awk 'BEGIN{print "\nEmployee Details"}; \
{print}; \
END{print "END"};' fi.txt

Employee Details
1 emp1 dep1 35000
2 emp2 dep2 35000
3 emp3 dep3 46000
4 emp4 dep1 40000
5 emp5 dep2 47000
6 emp6 dep3 30000
7 emp7 dep1 20000
END
```

e)

```
kuries@Beast:~/.../osp/lab7$ awk '$4>45000 {print $1" "$2" "$4}' fi.txt
3 emp3 46000
5 emp5 47000
kuries@Beast:~/.../osp/lab7$
```

f)

```
kuries@Beast:~/.../osp/lab7$ awk 'NR==1, NR==7 \
{val+=$4} \
END {print val/NR}' fi.txt
36142.9
kuries@Beast:~/.../osp/lab7$
```

2)

a)

```
kuries@Beast:~/.../osp/lab7$ cat n.txt
10
kuries@Beast:~/.../osp/lab7$ awk '{for(i=0; i<$0; i++) print rand()}' n.txt
0.924046
0.593909
0.306394
0.578941
0.740133
0.786926
0.43637
0.332195
0.77888
0.100887
kuries@Beast:~/.../osp/lab7$
```

b)

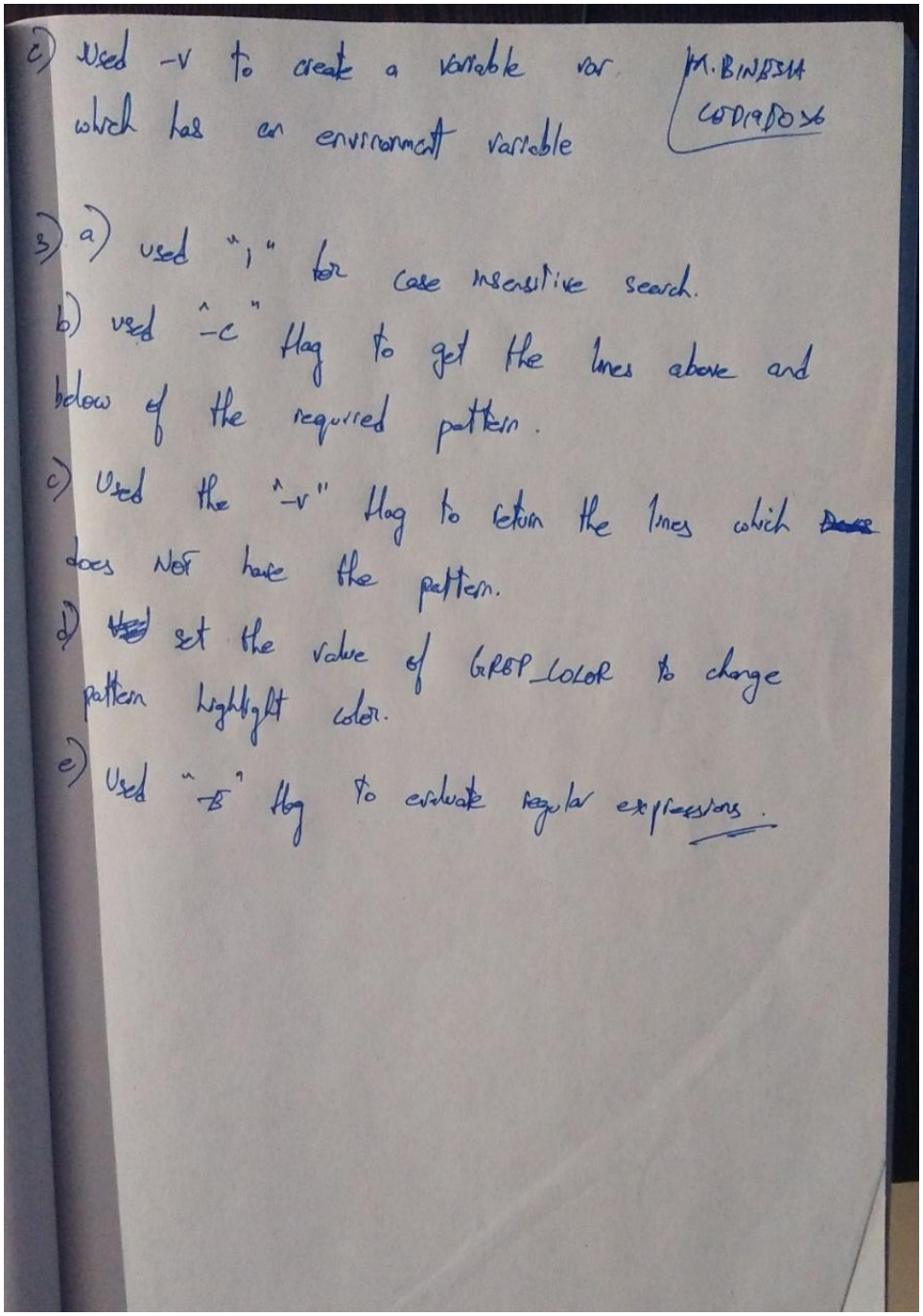
```
kuries@Beast:~/.../osp/lab7$ cat n.txt
10
kuries@Beast:~/.../osp/lab7$ awk '{for(i=0; i<2*$0; i+=2) print i*i*i}' n.txt
0
8
64
216
512
1000
1728
2744
4096
5832
kuries@Beast:~/.../osp/lab7$
```

c)

```
kuries@Beast:~/.../osp/lab7$ awk -v var="$PATH" 'BEGIN{print var}'
/home/kuries/.nvm/versions/node/v16.7.0/bin:/home/kuries/.local/bin:/home/kuries/
.cargo/bin:/home/kuries/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/
bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/home/kuries/.local/share/so
lana/install/active_release/bin:/home/kuries/Downloads/applications/cmake-3.21.0-
rc2-linux-x86_64/bin:/home/kuries/.local/bin:/home/kuries/.local/share/solana/ins
tall/active_release/bin:/home/kuries/Downloads/applications/cmake-3.21.0-rc2-linu
x-x86_64/bin:/home/kuries/.local/bin
kuries@Beast:~/.../osp/lab7$
```

d)

```
kuries@Beast:~/.../osp/lab7$ awk -v var="$HOME" 'BEGIN{print var}'
/home/kuries
kuries@Beast:~/.../osp/lab7$
```



3) a)

```
kuries@Beast:~/.../osp/lab7$ grep -i "error" t1.txt t2.txt t3.txt
t1.txt:1) Syntax error
t2.txt:Latent Dirichlet Allocation. The purpose of LDA is to learn the representa
tion of a error number of topics,
t2.txt:and given this number of error learn the topic distribution that each docu
ment in a
t3.txt:d. Print lines that match the given pattern in specific error.
kuries@Beast:~/.../osp/lab7$
```

b)

```
kuries@Beast:~/.../osp/lab7$ grep -C 2 "error" t1.txt t2.txt t3.txt
t1.txt:1) Syntax error
t1.txt-2) not valid data type/ too many arguments / variable not intialized.
t1.txt-3) documentation not set/ variable property not set
--
t2.txt:Latent Dirichlet Allocation. The purpose of LDA is to learn the represent
ation of a error number of topics,
t2.txt:and given this number of error learn the topic distribution that each doc
ument in a
t2.txt-collection of documents has.
t2.txt-
--
t3.txt-b. Print “n” lines “Previous” and “Next” to the matching pattern with mat
ching line.
t3.txt-c. Print a0234 the lines that do not match the given 34920
t3.txt:d. Print lines that match the given pattern in specific error.
t3.txt-e. Print all patterns that match A-Z and 0-9 from the file.
kuries@Beast:~/.../osp/lab7$
```

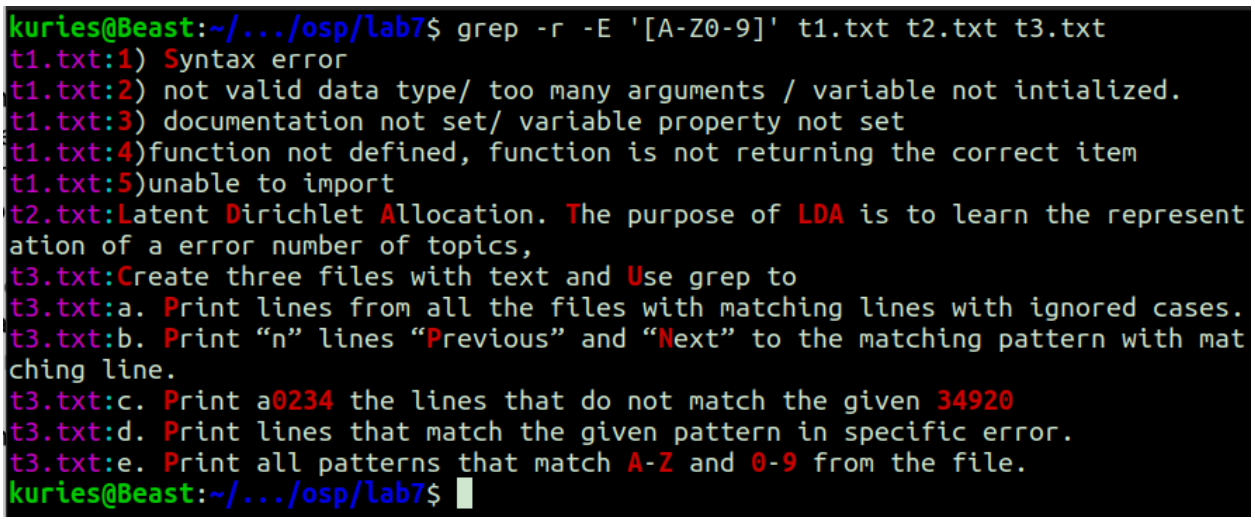
c)

```
kuries@Beast:~/.../osp/lab7$ grep -hvi "error" t1.txt t2.txt t3.txt
2) not valid data type/ too many arguments / variable not intialized.
3) documentation not set/ variable property not set
4)function not defined, function is not returning the correct item
5)unable to import

collection of documents has.

Create three files with text and Use grep to
a. Print lines from all the files with matching lines with ignored cases.
b. Print “n” lines “Previous” and “Next” to the matching pattern with matching li
ne.
c. Print a0234 the lines that do not match the given 34920
e. Print all patterns that match A-Z and 0-9 from the file.
kuries@Beast:~/.../osp/lab7$
```

d)

```
kuries@Beast:~/.../osp/lab7$ export GREP_COLOR='1;37;41'
kuries@Beast:~/.../osp/lab7$ grep -i "error" t1.txt t2.txt t3.txt
t1.txt:1) Syntax error
t2.txt:Latent Dirichlet Allocation. The purpose of LDA is to learn the represent
ation of a error number of topics,
t2.txt:and given this number of error learn the topic distribution that each doc
ument in a
t3.txt:d. Print lines that match the given pattern in specific error.
kuries@Beast:~/.../osp/lab7$
```

e)


kuries@Beast:~/.../osp/lab7$ grep -r -E '[A-Z0-9]' t1.txt t2.txt t3.txt
t1.txt:1) Syntax error
t1.txt:2) not valid data type/ too many arguments / variable not intialized.
t1.txt:3) documentation not set/ variable property not set
t1.txt:4)function not defined, function is not returning the correct item
t1.txt:5)unable to import
t2.txt:Latent Dirichlet Allocation. The purpose of LDA is to learn the represent
ation of a error number of topics,
t3.txt:Create three files with text and Use grep to
t3.txt:a. Print lines from all the files with matching lines with ignored cases.
t3.txt:b. Print “n” lines “Previous” and “Next” to the matching pattern with mat
ching line.
t3.txt:c. Print a0234 the lines that do not match the given 34920
t3.txt:d. Print lines that match the given pattern in specific error.
t3.txt:e. Print all patterns that match A-Z and 0-9 from the file.
kuries@Beast:~/.../osp/lab7$