NAME: ADARSH P NAYAK
CLASS: CSE AIML B
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LAB: 2
REG NO: 240962518

1. Execute all the commands explained in this section and write the output.

```
mca@computinglab24-14:~/240962518/Lab2$ cat > fruitlist.txt << 'EOF'
apple
apples
pineapple
fruit-apple
banana
pear
peach
orange
1234
EOF
mca@computinglab24-14:~/240962518/Lab2$ grep apple fruitlist.txt
apple
apples
pineapple
fruit-apple
mca@computinglab24-14:~/240962518/Lab2$ grep -x apple fruitlist.txt
apple
mca@computinglab24-14:~/240962518/Lab2$ grep ^p apple fruitlist.txt
grep: apple: No such file or directory
fruitlist.txt:pineapple
fruitlist.txt:pear
fruitlist.txt:peach
mca@computinglab24-14:~/240962518/Lab2$ grep ^p fruitlist.txt
pineapple
pear
peach
mca@computinglab24-14:~/240962518/Lab2$ grep -E [0-4] fruitlist.txt
1234
mca@computinglab24-14:~/240962518/Lab2$ sort fruitlist.txt
1234
apple
apples
banana
fruit-apple
orange
peach
pear
pineapple
mca@computinglab24-14:~/240962518/Lab2$ sort -r fruitlist.txt
pineapple
pear
peach
orange
fruit-apple
banana
apples
apple
1234
mca@computinglab24-14:~/240962518/Lab2$ sort -n fruitlist.txt
apple
apples
banana
fruit-apple
orange
peach
```

```
mca@computinglab24-14:~/240962518/Lab2$ sort -n fruitlist.txt
apple
apples
banana
fruit-apple
orange
peach
pear
pineapple
1234
mca@computinglab24-14:~/240962518/Lab2$ wc fruitlist.txt
 9  9 65 fruitlist.txt
mca@computinglab24-14:~/240962518/Lab2$ wc -l fruitlist.txt
9 fruitlist.txt
mca@computinglab24-14:~/240962518/Lab2$ cut -c 1-3 fruitlist.txt
app
app
pin
fru
ban
pea
pea
ora
123
mca@computinglab24-14:~/240962518/Lab2$ cut -c 3- fruitlist.txt
ple
ples
neapple
uit-apple
nana
ar
ach
ange
34
mca@computinglab24-14:~/240962518/Lab2$ sed 's/apple/MANGO/' fruitlist.txt
MANGO
MANGOs
pineMANGO
fruit-MANGO
banana
pear
peach
orange
1234
mca@computinglab24-14:~/240962518/Lab2$ sed '/apple/d' fruitlist.txt
banana
pear
peach
orange
1234
mca@computinglab24-14:~/240962518/Lab2$ tr "[a-z]" "[A-Z]" < fruitlist.txt
APPLE
APPLES
PINEAPPLE
FRUIT-APPLE
BANANA
```

```
mca@computinglab24-14:~/240962518/Lab2$ tr "[a-z]" "[A-Z]" < fruitlist.txt
APPLE
APPLES
PINEAPPLE
FRUIT-APPLE
BANANA
PEAR
PEACH
ORANGE
1234
mca@computinglab24-14:~/240962518/Lab2$ tr -d "[:digit:]" < fruitlist.txt
apple
apples
pineapple
fruit-apple
banana
pear
peach
orange

mca@computinglab24-14:~/240962518/Lab2$ ps
    PID TTY          TIME CMD
   6141 pts/0    00:00:00 bash
   6642 pts/0    00:00:00 ps
mca@computinglab24-14:~/240962518/Lab2$ chmod 444 < fruitlist.txt
chmod: missing operand after '444'
Try 'chmod --help' for more information.
mca@computinglab24-14:~/240962518/Lab2$ chmod 444  fruitlist.txt
mca@computinglab24-14:~/240962518/Lab2$ ls -l fruitlist.txt
-r--r--r-- 1 mca mca 65 Jan 12 10:11 fruitlist.txt
mca@computinglab24-14:~/240962518/Lab2$
```

2. Write grep commands to do the following activities:
• To select the lines from a file that have exactly two characters.
• To select the lines from a file that start with the upper case letter.
• To select the lines from a file that end with a period.
• To select the lines in a file that has one or more blank spaces.
• To select the lines in a file and direct them to another file which has digits as one of the characters in that line.

```
mca@computinglab24-14:~$ cd 240962518/
mca@computinglab24-14:~/240962518$ LAB2
LAB2: command not found
mca@computinglab24-14:~/240962518$ cd Lab2
mca@computinglab24-14:~/240962518/Lab2$ touch test.txt
mca@computinglab24-14:~/240962518/Lab2$ cat > test.txt
apple
banana
mango
mca@computinglab24-14:~/240962518/Lab2$ grep "apple" test.txt
apple
mca@computinglab24-14:~/240962518/Lab2$ sort test.txt
apple
banana
mango
mca@computinglab24-14:~/240962518/Lab2$ wc test.txt
 3  3 19 test.txt
mca@computinglab24-14:~/240962518/Lab2$ cut -c 1-3 test.txt
app
ban
man
mca@computinglab24-14:~/240962518/Lab2$ tr "[a-z]""[A-Z]"<test
bash: test: No such file or directory
mca@computinglab24-14:~/240962518/Lab2$ tr "[a-z]""[A-Z]"< test.txt
tr: missing operand after '[a-z][A-Z]'
Two strings must be given when translating.
Try 'tr --help' for more information.
mca@computinglab24-14:~/240962518/Lab2$ tr "[a-z]" "[A-Z]" < test.txt
APPLE
BANANA
MANGO
mca@computinglab24-14:~/240962518/Lab2$ ps
   PID TTY          TIME CMD
  5320 pts/0    00:00:00 bash
  5475 pts/0    00:00:00 ps
mca@computinglab24-14:~/240962518/Lab2$
```

```
mca@computinglab24-14:~/240962518/Lab2$ grep -x "....." test.txt
apple
mango
mca@computinglab24-14:~/240962518/Lab2$ grep "^[a-z]" test.txt
apple
banana
mango
mca@computinglab24-14:~/240962518/Lab2$ grep "^[A-Z]" test.txt
mca@computinglab24-14:~/240962518/Lab2$ cat > test.txt
Apple
mca@computinglab24-14:~/240962518/Lab2$ grep "^[A-Z]" test.txt
Apple
mca@computinglab24-14:~/240962518/Lab2$ grep "^[a-z]" test.txt
mca@computinglab24-14:~/240962518/Lab2$ cat > test.txt
Apple
Mango
orange
banana
mca@computinglab24-14:~/240962518/Lab2$ grep "/.$" test.txt
mca@computinglab24-14:~/240962518/Lab2$ echo "strawberry." >> test.txt
mca@computinglab24-14:~/240962518/Lab2$ grep "/.$" test.txt
mca@computinglab24-14:~/240962518/Lab2$ grep "/." test.txt
mca@computinglab24-14:~/240962518/Lab2$ grep "." test.txt
Apple
Mango
orange
banana
strawberry.
mca@computinglab24-14:~/240962518/Lab2$ grep "\.$" test.txt
strawberry.
mca@computinglab24-14:~/240962518/Lab2$ echo "hi how are you" >> test.txt
mca@computinglab24-14:~/240962518/Lab2$ grep " *" test.txt
Apple
Mango
orange
banana
strawberry.
hi how are you
mca@computinglab24-14:~/240962518/Lab2$ echo "23084 Hello world" >> test.txt
mca@computinglab24-14:~/240962518/Lab2$ grep "[0-9]" test.txt > output_digits.txt
mca@computinglab24-14:~/240962518/Lab2$ grep output_digits.txt
mca@computinglab24-14:~/240962518/Lab2$ grep "." output_digits.txt
23084 Hello world
mca@computinglab24-14:~/240962518/Lab2$
```

3. Create file studentInformation.txt using vi editor which contains details in the following format.

RegistrationNo:Name:Department:Branch:Section:Sub1:Sub2:Sub3

1234:XYZ:ICT:CCE:A:80:60:70 … (add atleast 10 rows)

i) Display the number students(only count) belonging to ICT department.

ii) Replace all occurrences of IT branch with "Information Technology" and save

the output to ITStudents.txt

iii) Display the average marks of student with the given registration number "1234" (or any specific existing number).

```
mca@computinglab24-14:~/240962518/Lab2$ vi studentInformation.txt
mca@computinglab24-14:~/240962518/Lab2$ grep -c ":ICT:" studentInformation.txt
7
mca@computinglab24-14:~/240962518/Lab2$ grep "." studentInformation.txt
1234:XYZ:ICT:CCE:A:80:60:70
1235:ABC:ICT:IT:B:70:85:90
1236:LMN:MECH:ME:A:60:50:40
1237:PQR:ICT:IT:C:90:90:95
1238:STU:CSE:CS:B:88:76:82
1239:VWX:ICT:CCE:A:65:75:80
1240:JKL:ICT:IT:A:55:65:75
1241:DEF:ICT:IT:B:100:90:90
1242:GHI:CIVIL:CV:C:70:60:50
1243:MNO:ICT:CCE:B:85:85:85
mca@computinglab24-14:~/240962518/Lab2$ grep -c ":ICT:" studentInformation.txt
7
mca@computinglab24-14:~/240962518/Lab2$ sed 's/:IT:/:Information Technology:/g' studentInformation.txt > ITStudents.txt
mca@computinglab24-14:~/240962518/Lab2$ grep "." studentInformation.txt
1234:XYZ:ICT:CCE:A:80:60:70
1235:ABC:ICT:IT:B:70:85:90
1236:LMN:MECH:ME:A:60:50:40
1237:PQR:ICT:IT:C:90:90:95
1238:STU:CSE:CS:B:88:76:82
1239:VWX:ICT:CCE:A:65:75:80
1240:JKL:ICT:IT:A:55:65:75
1241:DEF:ICT:IT:B:100:90:90
1242:GHI:CIVIL:CV:C:70:60:50
1243:MNO:ICT:CCE:B:85:85:85
mca@computinglab24-14:~/240962518/Lab2$ grep "." ITStudents.txt
1234:XYZ:ICT:CCE:A:80:60:70
1235:ABC:ICT:Information Technology:B:70:85:90
1236:LMN:MECH:ME:A:60:50:40
1237:PQR:ICT:Information Technology:C:90:90:95
1238:STU:CSE:CS:B:88:76:82
1239:VWX:ICT:CCE:A:65:75:80
1240:JKL:ICT:Information Technology:A:55:65:75
1241:DEF:ICT:Information Technology:B:100:90:90
1242:GHI:CIVIL:CV:C:70:60:50
1243:MNO:ICT:CCE:B:85:85:85
mca@computinglab24-14:~/240962518/Lab2$ echo "scale=2; ($(grep "^1234:" studentInformation.txt | cut -d":" -f6-8 | tr ":" "+")) / 3" | bc
70.00
mca@computinglab24-14:~/240962518/Lab2$
```