

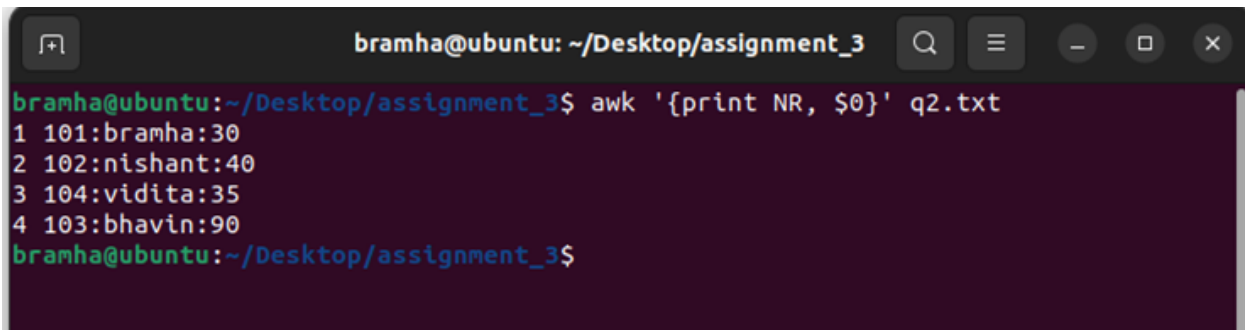
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ASSIGNMENT 3

1. Write an awk command to print the lines and line number in the given input file.

A terminal window titled 'bramha@ubuntu: ~/Desktop/assignment_3' showing the execution of an awk command. The command is 'awk '{print NR, \$0}' q2.txt'. The output displays four lines, each with a line number followed by a colon and the original line content: '1 101:bramha:30', '2 102:nishant:40', '3 104:vidita:35', and '4 103:bhavin:90'. The prompt 'bramha@ubuntu:~/Desktop/assignment_3\$' is visible at the bottom.

```
bramha@ubuntu:~/Desktop/assignment_3$ awk '{print NR, $0}' q2.txt
1 101:bramha:30
2 102:nishant:40
3 104:vidita:35
4 103:bhavin:90
bramha@ubuntu:~/Desktop/assignment_3$
```

2. Write an awk command to print first field and second field only if third field value is ≥ 50 in the given input file. (input field separator is “:” and output field separator is “,”)

Code-

```
BEGIN {
    FS = ":"
    OFS = ","
}
```

```
$3 >= 50 {  
    print $1, $2  
}
```

Text -

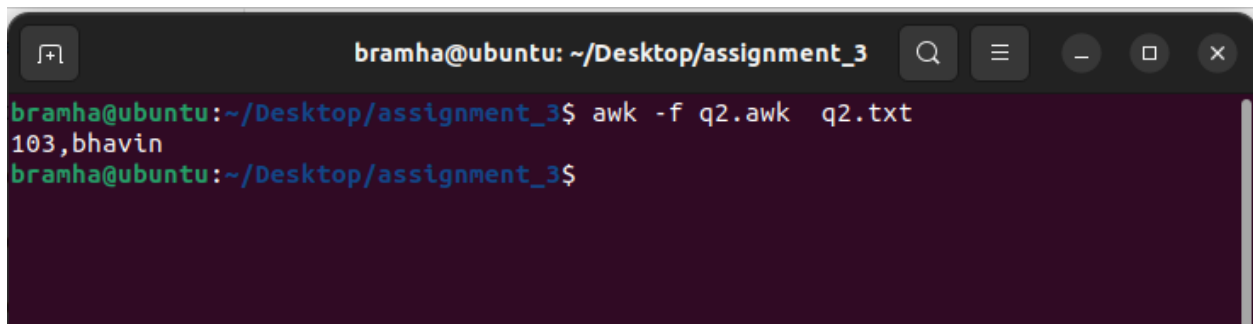
101:bramha:30

102:nishant:40

104:vidita:35

103:bhavin:90

Output-

A terminal window with a dark background. The title bar shows 'bramha@ubuntu: ~/Desktop/assignment_3'. The prompt is 'bramha@ubuntu:~/Desktop/assignment_3\$'. The command 'awk -f q2.awk q2.txt' has been entered and executed. The output '103,bhavin' is displayed on the next line. The prompt is now 'bramha@ubuntu:~/Desktop/assignment_3\$' again.

```
bramha@ubuntu: ~/Desktop/assignment_3  
bramha@ubuntu:~/Desktop/assignment_3$ awk -f q2.awk q2.txt  
103,bhavin  
bramha@ubuntu:~/Desktop/assignment_3$
```

3. Consider the marks.txt is a file that contains one record per line(comma separate fields) of the student data in the form of studentid, student name, Telugu marks, English marks, Maths Marks, Science marks, Social Marks. Write an awk script to generate result for every students in the form of studentid, studentname, Total Marks and result. Result is PASS if marks is >=30 in TELUGU and English, and if marks>=40 in other subjects. Result is fail otherwise.

Code –

```

BEGIN {
    FS = ","
    OFS = ","

}

{
    stuID = $1
    stuName = $2
    telMarks = $3
    engMarks = $4
    mathMarks = $5
    sciMarks = $6
    socMarks = $7

    Marks = telMarks + engMarks + mathMarks + sciMarks + socMarks

    if (telMarks >= 30 && engMarks >= 30 && mathMarks >= 40 && sciMarks >=
40 && socMarks >= 40) {
        result = "PASS"
    } else {
        result = "FAIL"
    }

    print stuID, stuName, Marks, result
}

```

Text -

```

1,bramha,85,72,65,92,78
2,bhavin,78,89,94,88,76
3,vidita,60,45,78,50,68
4,maaz,92,85,72,89,94
5,hiya,45,60,55,42,38

```

Output -

```
bramha@ubuntu: ~/Desktop/assignment_3
bramha@ubuntu:~/Desktop/assignment_3$ awk -f q3.awk q3.txt
1,bramha,392,PASS
2,bhavin,425,PASS
3,vidita,301,PASS
4,maaz,432,PASS
5,hiya,240,FAIL
bramha@ubuntu:~/Desktop/assignment_3$
```

4. Write an awk program to print the fields 1 and 4 of a file that is passed as command line argument. The file contains lines of information that is separated by “,” as delimiter. The awk program must print at the end the average of all 4th field data.

Code -

```
BEGIN {
    FS = ","
    total = 0
    count = 0
}

{
    if (NF >= 4) {
        print "Field 1: " $1 ", Field 4: " $4
        total += $4
        count++
    }
}

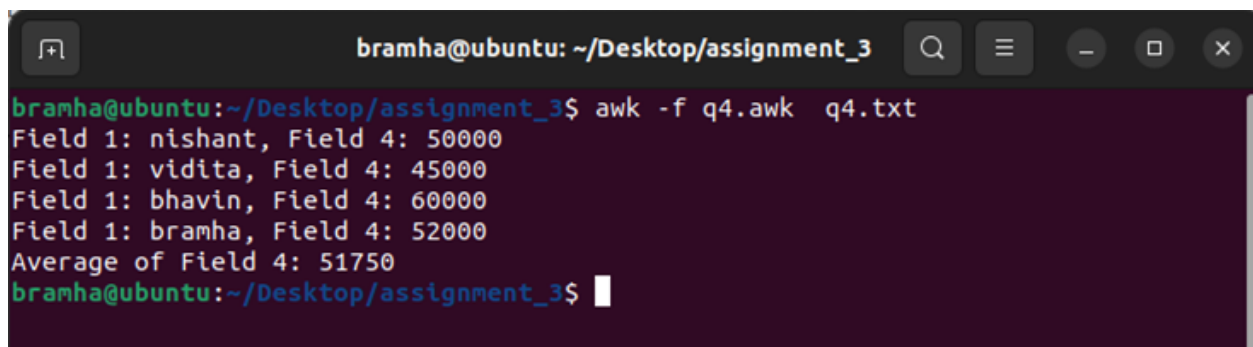
END {
    if (count > 0) {
        average = total / count
        print "Average of Field 4:", average
    }
}
```

```
    } else {  
        print "No valid lines found in the input file."  
    }  
}
```

Text -

```
nishant,28,Male,50000  
vidita,24,Female,45000  
bhavin,35,Male,60000  
bramha,29,Female,52000
```

Output -

A terminal window with a dark background. The title bar shows 'bramha@ubuntu: ~/Desktop/assignment_3'. The prompt is 'bramha@ubuntu:~/Desktop/assignment_3\$'. The command 'awk -f q4.awk q4.txt' has been executed. The output is: 'Field 1: nishant, Field 4: 50000', 'Field 1: vidita, Field 4: 45000', 'Field 1: bhavin, Field 4: 60000', 'Field 1: bramha, Field 4: 52000', and 'Average of Field 4: 51750'. The prompt is now 'bramha@ubuntu:~/Desktop/assignment_3\$' with a cursor.

```
bramha@ubuntu:~/Desktop/assignment_3$ awk -f q4.awk q4.txt  
Field 1: nishant, Field 4: 50000  
Field 1: vidita, Field 4: 45000  
Field 1: bhavin, Field 4: 60000  
Field 1: bramha, Field 4: 52000  
Average of Field 4: 51750  
bramha@ubuntu:~/Desktop/assignment_3$
```

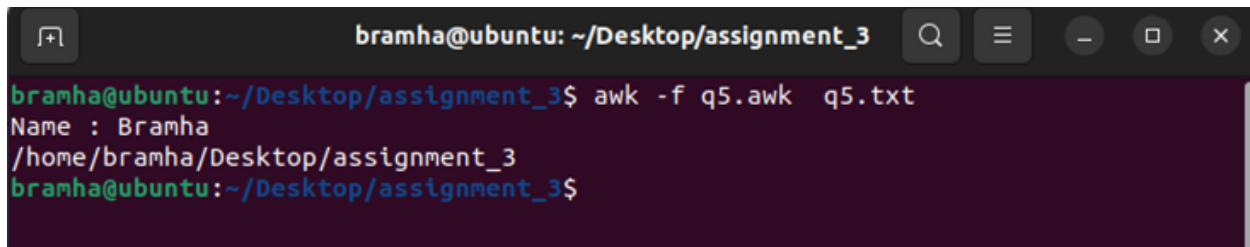
5. Write an awk program to demonstrate user defined functions and system command.

Code -

```
function printName(name) {  
    return name;  
}  
  
BEGIN {  
  
    name = printName("Bramha");  
    print "Name :", name;
```

```
system("pwd");  
}
```

Output -

A terminal window with a dark background. The title bar shows 'bramha@ubuntu: ~/Desktop/assignment_3'. The prompt is 'bramha@ubuntu:~/Desktop/assignment_3\$'. The command 'awk -f q5.awk q5.txt' has been entered. The output shows 'Name : Bramha' followed by the directory path '/home/bramha/Desktop/assignment_3'. The prompt returns to 'bramha@ubuntu:~/Desktop/assignment_3\$'.

6. Write an awk script to count the number of lines in a file that do not contain vowels.

Code -

```
BEGIN {  
  
    count = 0  
}  
  
{  
  
    line = tolower($0)  
  
    if (line !~ /[aeiou]/) {  
        count++  
    }  
}
```

```
}
```

```
END {
```

```
    print "Number of lines:", count
```

```
}
```

Text -

hll

wrtgh

ael

Output –

A terminal window with a dark background. The title bar shows 'bramha@ubuntu: ~/Desktop/assignment_3'. The prompt is 'bramha@ubuntu:~/Desktop/assignment_3\$'. The command 'awk -f q6.awk q6.txt' has been entered and executed. The output 'Number of lines: 2' is displayed. The prompt is now 'bramha@ubuntu:~/Desktop/assignment_3\$' again.

```
bramha@ubuntu: ~/Desktop/assignment_3  
bramha@ubuntu:~/Desktop/assignment_3$ awk -f q6.awk q6.txt  
Number of lines: 2  
bramha@ubuntu:~/Desktop/assignment_3$
```

7. Write an awk script to find the number of characters, words and lines in a file.

```
BEGIN {
```

```
    char = 0
```

```
    word = 0
```

```
    line = 0
```

```
}
```

```
{  
  
    char += length($0)  
  
    word += NF  
  
    line++  
  
}  
  
END {  
  
    print "Characters:", char  
  
    print "Words:", word  
  
    print "Lines:", line  
  
}
```

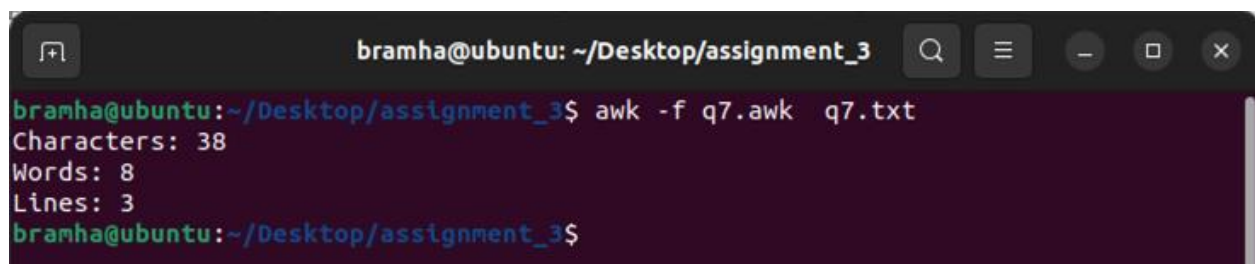
Text -

hello there

my name is bramha

im good

Output -

A terminal window with a dark background. The title bar shows 'bramha@ubuntu: ~/Desktop/assignment_3'. The prompt is 'bramha@ubuntu:~/Desktop/assignment_3\$'. The command 'awk -f q7.awk q7.txt' has been executed, resulting in three lines of output: 'Characters: 38', 'Words: 8', and 'Lines: 3'. The prompt is now 'bramha@ubuntu:~/Desktop/assignment_3\$' again.

```
bramha@ubuntu: ~/Desktop/assignment_3  
bramha@ubuntu:~/Desktop/assignment_3$ awk -f q7.awk q7.txt  
Characters: 38  
Words: 8  
Lines: 3  
bramha@ubuntu:~/Desktop/assignment_3$
```