Institute of Technology Tallaght

IT Scripting and Automation

Lab 4

Dr. Fernando Perez Tellez

Exercise 1.

Create a text file (called employee) with the following information.

```
student@ITSA-Server:~/awk$ cat employee
1 John Manager Sales $ 40000
2 Mark Manager Technology $ 50000
3 Joe Developer Technology $ 30000
4 Sean Officer HR $ 35000
5 David Officer Sales $ 36000
```

1.1 Explain the outputs of the following AWK statements.

   a. $ awk 'BEGIN { FS = " " ;} {print $2;} ' employee
   b. $ awk '{sum=sum+$6;} END{print "Total salary: " sum;}' employee
   c. $ awk '{sum=sum+$6; print "Total salary: " sum;}' employee
   d. $ awk '{if($1 > 40000){ print $2" – "$6; }}' employee
   e. $ awk '$6>40000' employee
   f. $ awk 'BEGIN {print "Name\tRole\tDepartment\tSalary";}
        {print $2,"\t",$3,"\t",$4,"\t",$NF;}
        END{print "End of Report \n--------------";}' employee

1.2 Using the previous text file (employee) create an AWK statement to calculate:

   - The average salary in this company
   - The average salary for "Technology" department only
   - The total salary paid in "Sales" department only
   - Number of "Officer" employees

Exercise 2 .

Create the following script (called script2.sh) to process "/etc/passwd" file. Show execution of your script (screenshot). Explain the output of the script.

```
#!/bin/bash
directory=$1
file=$2
path=$1/$2
cat $path | awk 'BEGIN{FS=":";}{print $1;}' | sort
```

Script execution:

./script2.sh   /etc   passwd

Exercise 3.

Create AWK statements to do the following:

- Print the total number of kilobytes used by files with extension 'sh'.
- Count the number of lines in a file.

Exercise 4.

Create a Python script with the following functions:

- A function to show the content of "/etc/passwd" file (use **cat** command).
- A function to list the contents of "/tmp" directory. (use **ls** command).
- A function to list all the processes running on your system (use **ps** command).
- A function to display the disk space (in MB) used in the current working directory (use **du** command).

Note: You may need to check the arguments that are needed in each command, for this use **man** command.