LAB ASSIGNMENT 1

ON

OPERATING SYSTEM AND SHELL PROGRAMMING

Submission date : 26/07/2021

Q.1 Write Comparison between file systems of Windows and Unix operating systems.
Q.2 What will the following commands do?
(a) $ls [a-d]??
(b) $ls [a-z][0-9]*
(c) $ls -Rt
(d) $mkdir -m 740 apple
(e) $mkdir -p fruits/delicious/apple
(f) $touch 07151000 mbacourse.txt
(g) $cat mbacourse.txt lawcourse.txt
(h) $rmdir -p fruits/delicious/apple

(Q.3 Write the command for the following tasks:
(a) To display the list of files and directories that begin with a vowel
(b) To change the access time of the file mbacourse.txt to Feb 10 09:15
(c) To show the contents of the file mbacourse.txt along with line numberings
(d) To concatenate the contents of the two files mbacourse.txt and lawcourse.txt and store them in a third file career.txt
(e) To remove the empty subdirectories, students and teachers, from the college directory
(f) To copy the entire directory teachers along with its subdirectories in the name faculty
(g) To forcibly remove the file mbacourse.txt from the college directory
(h) To move the file mbacourse.txt from the current directory to the professional subdirectory of the college directory

Q.4 What will the following commands do?
(a) $chmod 410 management.txt
(b) $umask 233
(c) $chgrp jobs mbacourse.txt
(d) $head -c 100 mbacourse.txt management .txt
(e) $tail -2 management.txt
(f) $man -K disk
(g) $cut -d"," -f3 bank.lst
(h) $paste -d"<>" names.txt numbers.txt

Q.5 Write the command for the following tasks:
(a) To assign read, write, and execute permissions to the owner; read and write permission to the group; and only read permission to others for the file mbacourse.txt
(b) To set permissions for the directories to be created in the future as read, write, and exe cute for the owner; read and write for the group; and only read for others
(c) To change the ownership of the file mbcourse.txt to charles
(d) To display the first two lines of the files mbacourse.txt and management.txt

AWK PROGRAMING

1. Consider a file, stock.lst, which contains the product code, product name, price, quantity, and category of product as follows.

Product code	Product name	Price	Quantity	Category of product
101	Jeans	1000	10	garments
102	Camera	5000	3	electronics
103	Trousers	1200	5	garments
104	Laptop	4000	15	electronics
105	Cellphone	8000	8	electronics

With respect to this file, stock.lst, what will the output of the following commands be?
(a) $ awk '/garment/' stock.lst
(b) $ awk '/electronics/ { print $2,$4 }' stock.lst
(c) $ awk '$4 < 10' stock.lst
(d) $ awk 'NR >0 { print NR,$0 }' stock.lst
(e) $ awk 'NR == 2, NR == 4 { print NR,$0 }' stock.lst
(f) $ awk '{ print NF }' stock.lst
(g) $ awk '{ print $NF }' stock.lst
(h) $ awk '$5 ~/s$/' stock.lst
(i) $ awk '$2 ~ "^C" ' stock.lst
(j) $ awk '$2 ~ "^C" && $4 < 5 ' stock.lst

2. Considering the file stock.list as the input file, write the commands for performing the following tasks.
(a) To print only the code of the electronics products.
(b) To print the information of the products whose price is in the range 5000–10,000.
(c) To print all the products except jeans.
(d) To print the third record in the file.
(e) To print the product whose code is 102.
(f) To print the products whose product names begin from any character between a to d.
(g) To print all the products whose product name is more than six characters long.
(h) To print all the products whose quantity is less than 10.
(i) To print all the products whose product name is laptop.
(j) To print the product name and price of all the garment product whose code is less than 103 and whose price is more than 800.
(k) To print only the product names of the products whose quantity is between 10 and 15.
(l) To print all the products whose product name begins with the character ‘C’.

3. Consider a file, school.lst, with the following content.

101	Anil	Science	45	60	105
102	Rama	Commerce	55	30	85
103	Sunil	Science	35	20	55
104	Peter	Commerce	75	70	145
105	Sanjay	Science	95	80	175

Write the AWK scripts to do the following:

(a) Count the number of students with roll >= 105

(b) Count the number of commerce students

(c) Count the number of science students whose roll <= 103

(d) Count the number of students having total >100

4. Consider a file, data.lst, with the following content.

Anil sharma	Vaishali Nagar	science	45	67
Manoj gupta	Sri Nagar Road	commerce	66	89
Kamal sharma	Shastri Nagar	commerce	81	32
Rama sharma	Vaishali Nagar	commerce	45	91
Chirag Harwani	Vaishali Nagar	science	34	63

Write the AWK script for the following:

(a) Show all the lines/records between the specified range, to be entered by the user

(b) Show all the records having the pattern Vaishali Nagar in it.

(c) Replace the pattern science with commerce.

(d) Print all the contents of this fi le along with the total of two subjects of each student.

(e) Show all the records with surname ‘Sharma’.