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Section : A

WRITE SHELL SCRIPT FOR PATTERN MATCHING USING AWK,SED,TAR AND CPIO

1. Awk_file:

```
echo 'print file :'
awk '(print $0)' file.txt
echo
echo'print 1 and 3 columns of file:'
awk '(print $1,$3)' file.txt'
echo
echo 'print sum of numbers in column 1:'
awk '(sum+=$1) END (print sum)' file.txt'
echo

echo 'print avg of column 1 values of file:'

awk '{sum+=$1} END {print sum/NR}' file.txt

echo"

echo 'print 3 and 4 characters of column 3 of file:'

awk '{print substr($3,3,4) }' file.txt

echo"

echo 'print last column of file:'

awk '{print $NF }' file1.txt

echo

echo 'print true for id less than 1333 otherwise print false:'

awk '{if ($1 > 1333) {print "false" } else {print "false"}}' file.txt

echo"

echo 'print the square of the values of column 4 of file:'

awk 'function square(x) {return x*x } {print square($4) }' file.txt
```

Awk_output:

print all the rows and columns in file1:
1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
1337 em7 25000 27
1338 em8 32000 28

print 1 and 3 columns of file:
1331 10000
1332 12000
1333 11020
1334 13000
1335 19000
1336 20000
1337 25000
1338 32000

print sum of numbers in column 1 of file:
10676

print avg of column 1 values of file:
1334.5

print 3 and 4 characters of column 3 of file:
00
00
02
00
00
00
00
00

print last column of file:
25
24
22
23
26
25
27
28

print true for id less than 1333 otherwise print false:
true
true
false
false

false
false
false
false

print the square of the values of column 4 of file:
625
576
484
529
676
625
729
784

2. Sed_file:

```
'print file :'
cat file1.txt
echo
echo 'replace 31 with 01 line by line:'
sed 's/31/01/' file.txt
echo
echo 'after above command the original file doesn't change print file:'
cat file.txt
echo
echo'replace 26 in the place of 1337:'
sed 's/26/1337/g' file.txt
echo
echo'to delete a line no. 4:'
sed '4d' file.txt
echo
echo'to delete a last line:'
sed '$d' file.txt
echo
echo'to delete lines from 1 to 6:'
sed '1,6d' file.txt
echo
echo'to delete lines from 2 to last:'
sed '2,$d' file.txt
echo
echo 'to delete pattern matching line:'
sed '/1338/d' file1.txt
echo
```

Sed_output:

Print file:

```
1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
1337 em7 25000 27
1338 em8 32000 28
```

replace 31 with 01 line by line:

```
1301 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
1337 em7 25000 27
1338 em8 32000 28
```

after above command the original file doesn't change print file:
```
1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
1337 em7 25000 27
1338 em8 32000 28
```

replace 26 in the place of 1337:

```
1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
26 em7 25000 27
1338 em8 32000 28
```

to delete a line no. 4:

```
1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1335 em5 19000 26
1336 em6 20000 25
```

1337 em7 25000 27
1338 em8 32000 28

to delete a last line:

1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
1337 em7 25000 27

to delete lines from 1 to 6:

1337 em7 25000 27
1338 em8 32000 28

to delete lines from 2 to last:

1331 em1 10000 25

to delete pattern matching line:

1331 em1 10000 25
1332 em2 12000 24
1333 em3 11020 22
1334 em4 13000 23
1335 em5 19000 26
1336 em6 20000 25
1337 em7 25000 27

3. Tar_file:

```
echo "Creating an uncompressed tar Archive"
tar cvf file.tar hello1.txt
ls

echo ""
echo ""

echo " gzip compression on the tar Archive, using option -z"
tar cvzf file1.tar.gz *.txt
ls

echo ""
echo ""

echo " Creating compressed tar archive file using option -j"
tar cvfj file2.tar.tbz hello1.txt
ls

echo ""
echo ""
```

```
echo " Check size of existing tar, tar.gz, tar.tbz"
tar czf file2.tar.tbz | wc -c

echo ""
echo ""

echo " Update existing tar file"
tar rvf file.tar hello2.txt
ls

echo ""
echo ""

echo " List the contents and specify the tarfile using option"
tar tf file.tar

echo ""
echo ""

echo "Applying pipe to through grep command"
tar tvf file.tar | grep "hello"

echo ""
echo ""

echo "Viewing the Archive"
tar tvf file.tar

echo ""
echo ""

echo "pass a file name as an argument to search a tarfile"
tar tvf file.tar hello1.txt

echo ""
echo ""

echo "Verifies the integrity of an archive"
tar -vcW 100M file.tar hello2.txt

echo ""
echo ""

echo "Updates or adds files or directories to an already existing archive"
tar -Avf file.tar hello3.txt
ls

echo ""
echo ""

echo "Extracting files from Archive using option -xvf"
```

```
tar xvf file.tar
ls

echo ""
echo ""

echo "Untar single tar file "
tar xvfj file2.tar.tbz
ls

echo ""
echo ""

echo " Extracting a gzip tar Archive *.tar.gz using option -xvzf :"
tar xvzf file1.tar.gz
ls
```

tar_output:

Creating an uncompressed tar Archive

hello1.txt

file.tar

gzip compression on the tar Archive, using option -z

hello1.txt

hello2.txt

file1.tar.gz

Creating compressed tar archive file using option -j

hello1.txt

file1.tar.gz

file2.tar.tbz

Check size of existing tar, tar.gz, tar.tbz

788

Update existing tar file

hello1.txt

hello2.txt

file.tar

List the contents and specify the tarfile using option

hello1.txt

hello2.txt

Applying pipe to through grep command

-rw-r--r-- 0 user user 5 Mar 4 00:00 hello1.txt

-rw-r--r-- 0 user user 5 Mar 4 00:00 hello2.txt

Viewing the Archive

-rw-r--r-- 0 user user 5 Mar 4 00:00 hello1.txt

-rw-r--r-- 0 user user 5 Mar 4 00:00 hello2.txt

pass a file name as an argument to search a tarfile

-rw-r--r-- 0 user user 5 Mar 4 00:00 hello1.txt

Verifies the integrity of an archive

file.tar: OK

Updates or adds files or directories to an already existing archive

hello1.txt

hello2.txt

hello3.txt

file.tar

Extracting files from Archive using option -xvf

hello1.txt

hello2.txt

hello3.txt

Untar single tar file

hello1.txt

file2.tar.tbz

file.tar

hello2.txt

hello3.txt

Extracting a gzip tar Archive *.tar.gz using option -xvzf :

hello1.txt

hello2.txt

file1.tar.gz

hello3.txt

4. Cpio_file:

```
echo "#create a cpio file"
ls | cpio -ov > one.cpio

echo ""
echo ""

echo "#extract a cpio file"
ls | cpio -iv < one.cpio

echo ""
echo ""

echo "#creating tar using cpio"
ls | cpio -ov -H tar > one.tar

echo ""
echo ""

echo "#extract tar using cpio"
cpio -iv -F  one.tar

echo ""
echo ""

echo "#To create a *.tar archive with selected files"
find . -name "*.txt" | tar -cvf one.tar -T -

echo ""
echo ""
```

```
echo "#To only view *.tar archive file "
cpio -it < one.tar
```

cpio_output:

#create a cpio file

one.cpio

#extract a cpio file

./

one.cpio

#creating tar using cpio

one.cpio

one.tar

#extract tar using cpio

./

one.cpio

#To create a *.tar archive with selected files

./one.txt

./two.txt

./three.txt

./four.txt

one.tar

#To only view *.tar archive file

./one.txt

./two.txt

./three.txt

./four.txt