Assignment - 2

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#Q1)

 # In a college, students are allowed to select any one sporting event during his

 # studies. Create two files as mentioned below :

 # File : sports.dat

 # Code Game

 # ---------------------------

 # 101 Cricket

 # 102 Football

 # 103 Tennis

 # 104 Badminton

 # File : students.dat

 # Name Code

#-----------------------------

 # Aamir 101

 # Sharukh 103

 # Salman 103

 # Ajay 102

 # Write a shell script to list the students according to their choice of games …

 # Eg. Cricket : Aamir

```
# Football : Ajay
# Tennis : Sharukh, Salman

#-----------------------------------------------------------------

while read line
do
        echo $line

done < sports.dat

echo -e "Choose sport name : "
read sport

code=`grep $sport sports.dat | cut -d ":" -f1`

echo "Following students play $sport"
`grep $code students.dat | cut -d " " -f1 > display.txt`
cat display.txt
rm display.txt
================================================================================
# Q2)

# Write a shell script to generate summary from the sales.dat file.
# Sales made by 3 salesman by selling 3 products are entered in a file. Add
atleast
# 10 records. The format is as shown below:
# Salesman:Product1:Product2:Product3
# Sample data:
# Mr. Abhishek Sharma:21:29:12
# Mr. Akash Srivastava:11:15:28
```

```
# Mr. Abhilash Dwivedi:31:04:13
#
# Calculate the followings :
# • Total sales of the company
# • Highest sold product
# • Best salesman (who sold the most)
# • Worst salesman (who sold the least)
#
**************************************************************************
**********************************************************************



sp1=0
sp2=0
sp3=0
ts=0

while read line
do
        p1=`echo $line | cut -d ":" -f2`
        p2=`echo $line | cut -d ":" -f3`
        p3=`echo $line | cut -d ":" -f4`
        sp1=`expr $sp1 + $p1`
        sp2=`expr $sp2 + $p2`
        sp3=`expr $sp3 + $p3`

        t=`expr $p1 + $p2 + $p3`
        sman=`echo $line | cut -d ":" -f1`
        echo "$sman $t" >> highsaleman.txt

done < Sales.dat
```

```
ts=`expr $sp1 + $sp2 + $sp3`
echo "Total sale of company : $ts"

echo "Product1 $sp1" > high.txt
echo "Product2 $sp2" >> high.txt
echo "Product3 $sp3" >> high.txt

echo "`sort -k2 -r -n high.txt | head -1 | cut -d " " -f1` is highest selling product"

echo "`sort -k4 -r -n highsaleman.txt | head -1 | cut -d " " -f 1-3` is best salesman"

rm high.txt
rm highsaleman.txt
================================================================================
#Q3)

# Create a file “medals.dat” which contains the details of medals won by each
# country in Olympics. The data in the file may be as given below :
# ( Country name is Primary key.)
# Country Gold Silver Bronze
# -----------------------------------------
# India 21 12 15
# Pakistan 12 10 08
# USA 10 14 19
# Srilanka 00 09 07
# ……..and so on……..
# • Write a shell script which will ask the user to enter the Country name, further modify the no. of medals for that country.
# • Delete all the countries who get zero Gold medals.
# • Calculate the total no. of medals won by each country.
```

```
# • Find the country with highest Gold medals.
#**************************************************************************
**********************************************************************



cat "medals.dat"

echo -n "Enter country name to modify medals : "
read country
echo -n "Enter gold medals :"
read gold
echo -n "Entrer silver medals : "
read silver
echo -n "Enter bronze medals : "
read bronze

while read line
do
        set $line
        if [ $country == $1 ]
        then
                echo "$1 $gold $silver $bronze" >> "temp.dat"
        else
                echo $line >> "temp.dat"
        fi
done < "medals.dat"

cp "temp.dat" "medals.dat"

echo "Medal list after update"
cat "medals.dat"
```

```
rm temp.dat

echo "----------------------------------------"
while read line
do
        set $line
        if [ $2 -eq 00 ]
        then
                echo "$1 country deleted"
        else
                echo $line >> "temp.dat"
        fi
done < "medals.dat"

cp "temp.dat" "medals.dat"
cat "medals.dat"

rm temp.dat
echo "----------------------------------------"

while read line
do
        set $line
        total=`expr $2 + $3 + $4`
        echo "Total medals won by $1 = $total"
        echo "$1 $2" >> highmedals.txt

done < "medals.dat"

echo "----------------------------------------"
```

```
echo "`sort -k2 -n -r highmedals.txt | head -1 | cut -d " " -f1` won the highest
gold medals"

rm highmedals.txt
================================================================================
# Q4)

# Write a shell script to generate summary from a file : “student.dat” with following format :
#
# Student_no : student_name : gender : marks1 : marks2 : marks3 Each field must be separated by a delimeter ‘-‘
#
# Process the following queries:
# • Calculate the total marks of each student
# • Calculate the percentage of marks for each student
# • Count the total number of male and female students
# • Count the total number of students who pass and those who fail.
#
#*********************************************************************************************************

cat student.dat

male=0
female=0
pass=0
fail=0

while read line
```

```
do
        set $line
        total=`expr $4 + $5 + $6`
        echo "$2 obtained $total marks out of 300"
        per=`expr $total \* 100 / 300`
        echo "$2 obtained $per percentage"

        if [ $3 == 'M' ]
        then
                male=`expr $male + 1`
        else
                female=`expr $female + 1`
        fi

        if [ $4 -ge 35 -a $5 -ge 35 -a $6 -ge 35 ]
        then
                pass=$(($pass + 1))
        else
                fail=$(($fail + 1))
        fi
done < student.dat

echo "Toatal male students = $male"
echo "Total female students = $female"
echo "Total pass students = $pass"
echo "Total fail students = $fail"
================================================================================
# Q.5) A reputed MCA institute of Gujarat has students from various states.
# A sample file “students.dat” is shown as under :

# State                M         F
```

```
# ----------------------------------
# Gujarat            18        12
# Maharashtra        12        04
# M.P.               08        04
# UP                 05        00
# Rajasthan          07        00


# Total Male candidates are 50 and Female are 20. Write a shell script to
generate a Statewise Candidate Distribution Report as under :


#                              STATEWISE CANDIDATES LISTING
# ------------------------------------------------------------------------
-----------------
#              STATE                %MALE              %FEMALE
TOTAL
# ------------------------------------------------------------------------
-----------------
#              GUJARAT               36                60
30
#              MAHARASHTRA           24                20
16
# ……..…….. ……. And so on ……..
echo "                  STATEWISE CANDIDATES LISTING             "
echo "-----------------------------------------------------"
echo "  State      %Male            %Female             Total"
echo "-----------------------------------------------------"


while read line
do
        set $line
        mper=`expr $2 \* 100 / 50`
        fper=`expr $3 \* 100 / 20`
```

```
        echo "$1 $mper $fper `expr $2 + $3` "

done < "candidate.dat"
================================================================================
# Q6)

# Write a Shell script  to generate summary from  a file “books.dat” which
contains the following details :

#     Field             Description
#    ------------------------------------------------------------
#     No                Numeric (4) – uniquely identifies each book.
#     Title             Alphanumeric(30) – title of the book
#     Author            Character(20) – Author of the book
#     Publisher         Character(20) – Publisher (PHI , TMH, BPB…)
#     Edition           Numeric (2)

#     Sample Data:
#                 b1001 Programming in Java     Balagurusway      TMH
      Second
#                 b1002 Computer Networks       Tanenbaum       Pearson Fifth
#                 b1003 Operating Systems       Chaudhari       Jaico   First

#     After creating the file do the followings :
#           • Your script must replace all the BPB publisher with TMH.
#           • List the titles with the name ‘Java’.
#           • List the books written ‘Balaguruswamy
#           • List the books which are not the first edition
#
********************************************************************************
************************************************************
```

```
echo "File before modify"
cat "books.dat"

echo "File after modify"
cat "books.dat" | tr "TMH" "BPB"

echo "Books named as java"
grep "java" "books.dat" | cut -d " " -f2-4

echo "Books written by balagurusway are as follow:"
grep "Balagurusway"  books.dat | cut -d " " -f2-4

echo "Books which are not first edition:"
grep -v "First" "books.dat" | cut -d " " -f2-4
================================================================================
#Q7)

#Create a file “election.dat” which contains the Election details for a
specific city.

#     Field               Description
#      -----------------------------------
#     Idno                Numeric    - Unique
#     Name                Character – Voter’s Name
#     Sex                 Character – M / F
#     Age                 Numeric
#     Ward                Numeric  – Ward no. / Division no. of the city.

#     Sample data:
#           e101 - abhishek - M - 35 - 44
```

```
#           e102 - ashutosh - M - 97 - 14
#           e103 - anamika - F - 21 - 50

#     Suppose the same file is to be modified after 4 years. Write a shell script to simulate this process.
#     Your program must update the age of all People ( Add 4 years to age). In case if the age exceeds 99 then delete the record
#     from the file, assuming that the person is dead.

#     Display the election.dat and final output of your program.
#*************************************************************************
**************************************************************

echo "File before update"
cat "election.dat"

while read line
do
        set $line
        age=$(($4 + 4))

        if [ $age -gt 99 ]
        then
                echo "$1 record deleted"
        else
                echo "$1 $2 $3 $age $5" >> "modify.dat"
        fi
done < "election.dat"

cp "modify.dat" "election.dat"
rm "modify.dat"
```

```
echo "File after update"
cat election.dat
```

```
# Q.8)  In a college, students are allowed to select any one elective subject
during his studies. Create two files by entering the data as mentioned below
(you may skip the heading line if required) :


# File : elective.dat
#       Code     Game
# --------------------------
#     101 AI
#     102 Computer Graphics
#     103 Parallel Processing
#     104 Data Mining


# File : students.dat
# RollNo.      Name     Code
# ------------------------------
# 1          Sonal            101
# 2          Madhu          101
# 3          Mahim          103
# 4          Esha              104


# Write a shell script to list the students according to their choice of
electives …


# Eg.  AI :- Sonal, Madhu
#        Computer Graphics: -
#        Parallel Processing :- Mahim
#        Data Mining :- Esha
echo "Elective subjects"
cat "elective.dat"
```

```
echo "Students details:"
cat "students1.dat"

while read line
do
        set $line
        echo "$2 $3"
        c=`grep -c $1 "students1.dat"`

        if [ $c -eq 0 ]
        then
                echo "No one choosen $2 $3 as elective subject"
        else
                grep $1 "students1.dat" | cut -d " " -f2
        fi

done < "elective.dat"
```

```
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```

```
# Q9)

# Create two files: subjects.dat and students.dat containing the subject
details and the student details.
#   Sample data is as shown below:

#     subjects.dat
#
#     Course_id-Semester_id-Subject_id-Subject_name
#     CS-1-1-FCO
#     CS-1-2-FOP
#     CS-1-3-SL
```

```
#     CS-2-1-DS
#     CS-2-2-DBMS
#     CS-3-1-OS
#     CS-3-2-JAVA
#
#     faculty.dat
#
#     Faculty_id:Semester_id:Subject_id
#     F1-2-1
#     F2-3-2
#     F3-1-3
#     F1-1-1


#   Write a shell script to list the faculties and their respective subjects.
Sample Output will be :
#
#     F1 : FCO, DS
#     F2 : JAVA
#     F3 : SL
#*************************************************************************
**********************************************************************



while read line
do
        sem=`echo $line | cut -d " " -f2`
        sub=`echo $line | cut -d " " -f3`
        fac=`echo $line | cut -d " " -f1`

        while read line2
        do
                set $line2
```

```
                if [ $sem == $2 -a $sub == $3 ]
                then
                        echo "$fac teaches $4 subject"
                fi
        done < "subjects.dat"

done < "faculty.dat"
================================================================================
# Q10)

# Create two files employee.dat and departments.dat and add atleast 10
records in the following format :

#     employee.dat

#     emp_id:department_id:birthdate
#     e101:M1:11-01-1960
#     e102:C1:21-03-1973
#     e103:M2:21-03-1973
#     e104:C1:21-03-1973
#     e105:B1:08-10-1965
#     e101:M1:11-11-1964

#     departments.dat

#     departmend_id:department_name
#     B1:Botany
#     C1:Chemistry
#     M1:Mathematics
#     M2:Management
```

```
#    Write a shell script to do the followings:
#     1) List all the employee_ids department-wise
#     2) List the employee_ids born after 1970
#     3) List the employee_ids according to birthdate in sorted order
#**************************************************************************
**************************************************************


echo "Department wise employees"

while read line
do
        did=`echo $line | cut -d " " -f1`
        dname=`echo $line |  cut -d " " -f2`

        echo "Department $dname"
        while read line2
        do
                edid=`echo $line2 | cut -d " " -f2`
                eid=`echo $line2 | cut -d " " -f1`

                if [ $edid == $did ]
                then
                        echo $eid
                fi

        done < "employee.dat"
done < "department.dat"

echo "Employees born after year 1970 are as follow:"
```

```
while read line
do
        age=`echo $line | cut -d " " -f3 | cut -d "-" -f3`

        if [ $age -gt 1970 ]
        then
                echo $line
        fi

done < "employee.dat"

echo "Employees sorted according to their DOB"

sort -n -k 3.9 -k 3.5 -k 3 "employee.dat"
```
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